

# Nutri-Sensitive Agricultural Resources and Innovations (NARI)

Implementation by KVKs



**Division of Agricultural Extension  
Indian Council of Agricultural Research  
New Delhi 110012**

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## FOREWORD

**N**utrition is the fundamental pillar of human health and sustainable development. The access to nutritious food is the key for food security and progress towards eradicating hunger, poverty and malnutrition. Conflict, climate variability and extremes, and economic slowdowns and downturns are the major drivers slowing down progress to achieve the Sustainable Development Goals (SDG2). It is important to take actions to address major drivers of food insecurity and malnutrition and the inequalities affecting the access of millions to food. Beyond adequate calories intake, proper nutrition has other dimensions that deserve attention, including micronutrient availability and healthy diets.

Eradication of malnourishment requires nutrition sensitive and specific interventions for which agri-food system has to be transformed into a more resilient system which will serve diverse food rich in nutrient to all people to make them nutrition secure. Nutri- Sensitive Agricultural Resources and Innovations (NARI) programme implemented by Indian Council of Agricultural Research, New Delhi through Krishi Vigyan Kendras in all over the country. The establishment of nutrition garden, demonstration on bio-fortified varieties, food fortification, value addition and income generation activities for women are being carried out. The training programmes and extension activities are being organized for nutrition literacy in villages to make them Nutri-SMART Villages.

The booklet entitled “**Nutri-Sensitive Agricultural Resources and Innovations (NARI)-Implementation by KVKs**” contains information on nutrition related interventions carried out in Nutri-SMART Villages. I hope this publication will be helpful to create awareness to achieve nutrition security by establishment of Nutri-SMART Village. The efforts of ATARIS and KVKs in bringing out this publication are commendable.

(Himanshu Pathak)

Dated the 30<sup>th</sup> January, 2024  
New Delhi





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## PREFACE

Second sustainable development goals (SDG) of UN aimed eradicating of hunger and malnutrition by the year 2030" which requires food and nutritional security. A healthy workforce is key component to transform developing nation into developed nation for which availability and access to healthy diets to all peoples specially women and children are imperative. India has achieved food sufficiency but despite of this malnourishment status of country is a formidable challenge towards the holistic development of the country. Thus, the link between agriculture and nutrition is crucial for food and nutrition security which urges Nutrition Sensitive Agriculture (NSA) approach to move beyond production and productivity of foodgrains to diversified agriculture to increase economic opportunities and improve the availability of micronutrient-rich foods.

NSA also addresses intra-household distribution of food and individuals' absorption and intake of micronutrients and acknowledged individual behavior is also responsible for nutritional outcomes. Indian Council Agricultural Research, New Delhi is focusing nutrition sensitive agriculture approach by implementing Nutri-sensitive Agricultural Resources and Innovations (NARI) programme through Krishi Vigyan Kendras across the country.

NARI programme is focusing on NSA interventions such as establishment of diversified and intensifies homestead nutrition garden with proper crop planning and scientific management, demonstration of bio-fortified varieties & their value added products and poshan thali for all four critical stages life made by locally available food items rich in nutrients. Small scale income generation activities and crop management practices were shown for quick adoption to empower women and save their time. Training activities and extension activities were also organized for nutritional literacy for better production-linked pathways to nutrition.

This publication "**Nutri-Sensitive Agricultural Resources and Innovations (NARI)-Implementation by KVKs**" comprised information of above nutrition related interventions carried out by the KVKs in the rural villages to transform it in Nutri-SMART Village for nutritional security.

I wish that this publication will provide valuable insight to the planners, policy makers, researcher and field functionaries in accelerating the nutritional security efforts.

(U S Gautam)



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# INTRODUCTION

Malnutrition is 'curse' for India as it impediment to overall societal development. The low level of under-nutrition coupled with increasing level of over nutrition causing double burden in developing countries. According to United Nation, 690 million people are undernourished and this number is more in Asia and Africa. About 2 billion people do not have regular access to safe, nutritious and sufficient food while stunted and wasted children of under-five age group were 144 million and 47 million, respectively in 2019.

India is being 'self-sufficient' in the food grains production but badly affected by malnutrition and its consequent problems. Existing evidences show that prevalence of under-nutrition among under-five children in the country is still considerably high i.e., 35.8 percent underweight, 21 percent show wasting and 7.5 percent are severely wasted. Amongst the Indian states, the magnitude of malnutrition in the states of Rajasthan, Uttar Pradesh, Bihar, Assam, Madhya Pradesh, Chhattisgarh and Odisha is considerably high. It is not only due to lack of accessibility to adequate quantity and quality of food for the rural masses, but also due to lack of literacy about nutritional and balanced diet, hygiene and sanitation.

Nutrition specific and nutrition sensitive intervention along with nutrition related policies will ensure nutrition security in India. Dietary diversity, consumption of micronutrient rich food by micro-nutrient supplementation and food fortification, nutrition literacy, is required to combat problem of malnutrition with water, sanitation and hygiene (WASH) to ensure nutrition security.

Nutrition plays an important role in achieving the second Sustainable Development Goal i.e. zero hunger. Nutrition security goes beyond food security to access essential nutrients not only calories. It is defined as adequate nutritional status in terms of protein, energy, vitamins and minerals for all household members at all times. To tackle the problem of malnutrition by ensuring nutrition security for every person specially for women and child a new initiative "Nutri-Sensitive Agricultural Resources and Innovation" started by the Indian Council of Agricultural Research through Krishi Vigyan Kendras across the country. Under NARI programme, each KVK established atleast one Nutri-SMART Village in their jurisdiction area and promoting nutrition-related interventions to ensure nutrition security.

KVKs conducted demonstration on nutrition garden, bio-fortified varieties, value addition and other nutrition related aspects, organized capacity building programmens for farm womens and aganbadi workers and awareness progammes to increase nutrition literacy. *Poshan Thali*, *poshan rangoli*, *poshan garlands* and *poshan calenders* were promoted to create awareness about the micro-nutrient rich food items and their sources. Small scale income generation activities also promoted for women empowerment.

To further strengthen *Poshan Maah* was also celebrated during September 2020 by Indian council of Agricultural Research, New Delhi under NARI programme which aimed to sensitize farm women and others on various aspects of nutrition to address malnutrition through different interventions. During this month, Special initiative viz., capacity development of farm women and aganwadi workers, plantation drive programme, promotion of bio-fortified varieties, promotion of nutri-garden, promotion of *poshan thali* of traditional food and *poshan rangoli*, awareness programmens and media coverage by social media, print and electronic media were organized at wider scale to sensitize women on nutrition for health improvement.

Under this programme, collaboration is also done with Ministry of Women & Child Development, State Department of Agriculture, State Horticulture Department and other related Departments. Thus, NARI programme advocating nutrition sensitive agriculture approach to make food more available, accessible, diverse and nutritious for ensuring nutrition security.

This booklet summarized the efforts taken by Krishi Vigyan Kendras for maternal and child care, nutrition literacy and women empowerment practices. It gives keen insight regarding nutrition intervention on above aspects and will be beneficial for scientific and farming community.



Backyard nutrition garden



Poshan Rangoli



Training on nursery management



Terrace Garden



Saat din Saat Kyori



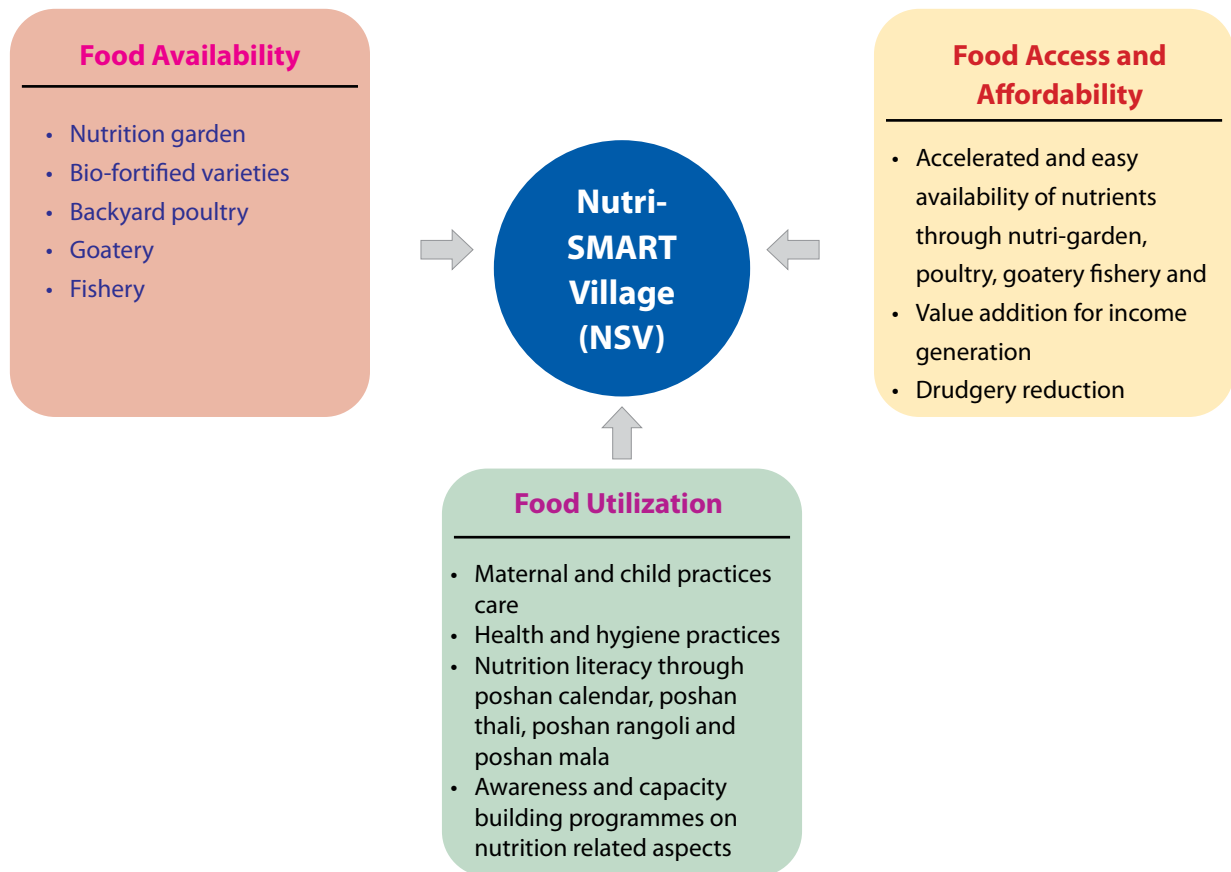
Bio-fortified varieties

## 2. NUTRI-SMART VILLAGE CONCEPT

Nutri-SMART Village (NSV) is a scientific approach based on concept "Grow what you eat and Eat what you grow." It resembled as unique architecture for nutrition-sensitive agriculture established as "minilab" for showcasing precise nutritional security using available resources, nutritional literacy, motivation & attitudinal change. The main idea behind establishment of Nutri-SMART Village is fulfilling nutritional requirement for making nutrition sufficient and healthy citizen to achieve second Sustainable Development



Goal. Innovative practices to promote nutrition-sensitive agriculture and food security, improving maternal and child nutrition, nutrition literacy, capacity development of women institutions/ SHGs/ FIGs/FPOs and value chain management was focus areas in which Krishi Vigyan Kendra's were working for making villages as Nutri-SMART.



Concept of Nutri-SMART Village

## Seven steps for establishment of Nutri-SMART Village

7 steps for establishment of Nutri-Smart villages are as under:

**Step-1- Pre-assessment of nutritional status of households.**

- **Anthropometric methods** (ICMR & WCD, Govt of MP)

**Step-2- Diet survey of Smart village (Individual food intake survey methods)**

**Method-1**

Retrospective intakes  
Questionnaire- based

{ Dietary History  
Food- Frequency  
24- hour Recall

**Method-2**

Current intakes

{ Dietary Records  
Chemical analysis of duplicates

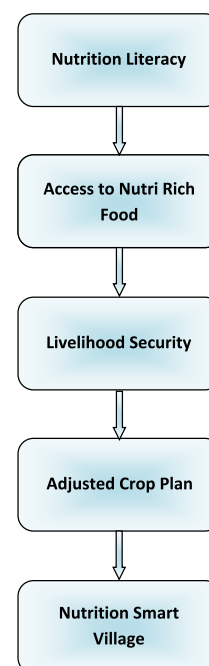
**Step-3- Seven days food diary**

**Step-4- Nutritional requirement of households**

**Step-5- Nutrient Supplementation Sources**

**Step-6- Crop Plan for Nutritional Availability**

**Step-7-Confirmatory assessment of nutritional status of the intervened households.**

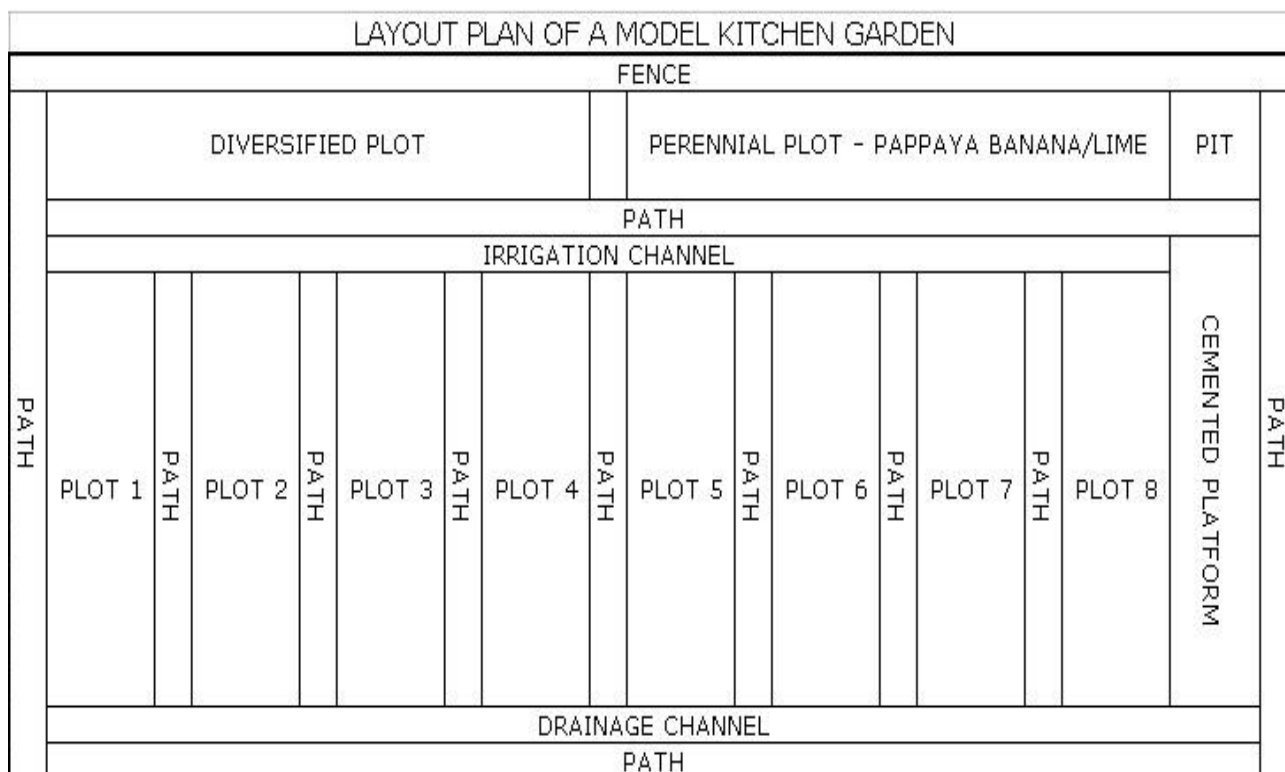


### 2.1 Nutrition Garden

In Nutri-SMART Villages, nutrition garden as backyard, kitchen garden, terrace garden, community nutrition garden and nutrition garden at residential schools were established. Nutrition garden is an integrated system which comprises a recreational area and a garden, producing a variety of foods including vegetables, fruits and medicinal plants for home consumption or sale. The prime motive of nutrition garden is to supply fresh vegetables and fruits to all the family members, particularly women and children throughout the year as per Recommended Dietary allowances (RDA).

Krishi Vigyan Kendras conducted demonstration on nutrition garden and provided input materials for establishment of nutrition garden along with information on scientific practices of crop cultivation with proper crop plan for three seasons for round the year availability of food crops. Nutrition garden layout and crop plan are designed as per the availability of the land in the household and need of the household. Dietary diversity is associated with household or individual food availability and intake of nutrients from different food groups and is an important component of nutritional outcome. Thus, Multiple and mixed cropping of vegetables and fruits are demonstrated to increase dietary diversity at household level. The benefits of a diverse diet found effective in improving nutritional quality and child growth. Awareness programme and capacity building programme also organised for scientific management of nutrition garden.





Nutrition garden Layout

## 2.2 Saat Din Saat Kyari (Seven days Seven plots)

*Saat Din Saat Kyari* is based on the concept of “Each kyari per day per week (especially for leafy vegetables) along with other seasonal vegetables”. Crops (vegetable & fruit) are growing for entire year (season-wise) in kitchen garden in which limited land in the backyard divided into space for fruit plants and seven small plots. The ideal size for *saat din saat kyari* is 210 square meter area with size of kyari 3x10 m (first kyari) and 3x5 (second kyari) and total path area is two meter. Seasonal vegetables are growing in inner circle and fruit plants are growing outside of circle.



Nutritional Garden with “*Saat Din Saat Kyari*”

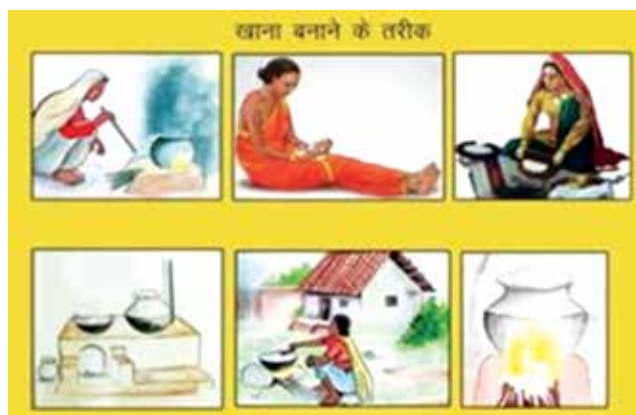


### 3 NUTRITION SUPPLEMENTATION FOR MATERNAL AND CHILD HEALTH

Women have special role in healthy population. Women's awareness and understanding about nutrition not only increase own's health but also whole family health thus women play important role in implementation of healthy nutrition policy at family and society level.

Malnutrition is major cause of death and disabilities worldwide directly and indirectly. Undernourished mothers give birth to malnourished children, with high probability of suffering from chronic diseases in adulthood. Anaemia is also a prevailing phenomenon in adolescent girls and pregnant women. Anaemia also associated with increasing maternal mortality as their diets are often lack in iron content. Poor feeding of infant and children affect growth of the child as the starting 1000 days are very important for infant development. Thus maternal and child care is utmost important for a healthy nation. The target of maternal and child care are all women in their reproductive age groups, i.e., 15 - 49 years of age, children, school age population and adolescents.

The causes of malnutrition are directly related to inadequate dietary intake and diseases and indirectly it is related with household food security, maternal and child care and environment. The Krishi Vigyan Kendras carried out demonstration on Nutrition garden and other nutritious food product to increase availability and access to nutritious food at all season. In collaboration with Women and Child Development Department, KVKs organized capacity building and awareness programme on nutrition for farm women. In Aganbadis nutrition garden also established by the KVKs and organized capacity development programme for aganbadi workers.



Diet Plan



Training programme on nutri-rich foods



### 3.1 Interventions by Krishi Vigyan Kendra on Nutrition Supplementation for Maternal and Child Health

#### Vertical Farming - Ensures Nutritional Security of Households

Vertical farming is an innovative method of cultivating vegetables where the crops grown in a layer system (Vertically) using grow bags with support system within limited space. Krishi Vigyan Kendra – MYRADA, Erode District, Tamil Nadu conducted 26 training programmes on home gardening with vertical farming system and covered 360 members. KVK developed vertical farming system at instructional farm with different models and supported the farm women and housewives to cultivate and consume fresh vegetables and greens at their door steps. KVK demonstrated vertical farming in two types i.e. *Dish pandal* and *Rack system* and established AESC (Agri Entrepreneurship Service Center) at KVK premises. The technology supported 25 families and one residential school to get fresh vegetables in their Midday meal programme.



Vertical garden

#### Establishment of Nutritional Garden in West Rajnagar, Khowai District, Tripura

KVK, Khowai organized an awareness programme on nutritional gardening for food security at West Rajnagar which is 100 % tribal area under Tulasikhar Block of Khowai district of Tripura. Bibhukumari group was formed under the instruction of KVK, Khowai under NARI Programme at West Rajnagar Village. The group selected a land of 0.08 ha to establish a nutritional garden in 2018. KVK assisted this group in establishment of nutrition garden and provided vegetable seedlings and high value vegetable crop seeds. They produced good amount of vegetables from their nutritional garden and additional produced vegetables were sold to the local market mainly green chilli, capsicum, broccoli and potato. They maintains nutritional garden around the year, which supplies enough vegetable for her 4-5 family members. The Bibhukumari group has inspired more fellow farmers as a result, 15-20 nos. of farm family of nearby villages also started Nutritional Gardening of their own.



Vegetable production in nutrition garden

### Terrace Garden for Urban Household Nutrition Security

Urbanization and growing population is a big threat to nutritional security. Terrace garden is one of measure to utilize the available open space in a productive way. Krishi Vigyan Kendra, Raipur conducted demonstration on terrace gardening in Jeevan Vihar Colony, urban area of Raipur district. Initially four urban women selected in 2017 for demonstration and it reached out to 20 families. Inputs were provided by the KVK to them with training on establishment and management of terrace garden. Area covered under terrace garden was 400 sqft. roof top/family from which 209 kg vegetables were produced annually. The cost of cultivation per unit was Rs 2550 with net return Rs 1930. This way terrace garden not only provided nutrition to urban family but also minimized their cost for vegetable purchasing.



Terrace garden

### Nutrition Garden for Dietary Supplementation of Fresh Fruits and Vegetables

Smt. Leela Bai lives in a family with five members in Hanumatiya Pawar village of Neemuch block, Distict- Neemuch. She established nutrition garden (area 250 Sq.m.) with the help of KVK-Nemuch in the year of 2018. Now she became a motivator for many women in the village. Krishi Vigyan Kendra supplied vegetable kits and vegetable seedlings. She adopted the technology given by KVK experts as a result of which she produced 300-350 kg of vegetables. She is happy to enhance the nutritional security for her family and earning additional income on an average of Rs. 7,000/year from sale of surplus produce of 250 kg sold in local markets. Due to her success the farm women were encouraged to go for cultivation of diverse vegetables primarily for house consumption and established 10 nutritional gardens in the same village.



Nutrition garden



Training programme on nutrition garden

## Cultivation of Leafy Vegetables

The systemic cultivation of vegetables helped them in obtaining satisfactory amount of vegetables which they consumed themselves as well as sold in nearby local market. KVK Dibrugarh conducted demonstration on cultivation of green leafy vegetables such as lettuce, spinach, mustard greens, corriander, beet and methi sag in 20 farm households in Modhupur Deorigaon. The layout of the garden was 10 sq.m (2 x5) sq.m. and total six number of bed made for vegetable production. The average yield: 600kg from 0.14 ha area which fulfils daily requirements of Vit A, Vit C, Calcium, Iron and minerals (as per RDA) for 60 days of a family with average five members (both adults and children). Establishment of a nutrition garden will help them in obtaining the essential nutrients. The nutrient deficiency diseases will be diminished by consuming vegetables from it.



Leafy Vegetable cultivation

## Establishment of Nutrition Garden in Rural Households

Linking of agriculture with nutrition is the prime necessity of the day. There is also a need to ensure enhanced access to nutritious food and encourage consumption of such type of foods. Nutrition of a household is usually taken care of by women, which includes use of different types of food material, some of which like fruits and vegetables can be grown in a kitchen garden. Krishi Vigyan Kendra-Kancheepuram, Tamil Nadu conducted training programmes to establish Nutri garden in the village. KVK also supplied seeds, seedlings of vegetables and fruits, manure like vermicompost, neem cake and panchakavya for nutri garden. Demonstration was conducted on Nutri-garden model in the backyard using crop guidance like plot development, planting, manuring, weeding and harvesting. Training and demonstrations enhanced the nutrition knowledge of the farm women that resulted in adoption of nutri-garden and continuously maintaining it. Regular harvest of greens and vegetables increases consumption these vegetables daily.



Training programme on establishment of nutrition garden

## Nutri-dense recipes for better maternal health

Nutritional well being of an individual and a family is important for the health and development of a society. The challenge is to ensure that adequate nutrients through proper diet are given to mother and young children so that better maternal and child health can be attained. Krishi Vigyan Kendra- Amritsar, Punjab conducted demonstration of nutrition rich recipes from local grown products was given to Tarsikka Anganwari center where 25 Anganwari workers on Tarsikka block. Women's were trained on making nutrition rich recipes for each season according to the availability of raw material. The focus of the recipes was to improve maternal health and to provide nutritive recipes of different varieties for young kids so that they can be weaned away from junk food. Anganwari workers learned how to make nutritive products from fermentation and sprouting. No instance of acute malnutrition among kids below 5 years of age noticed in village Tarsikka.



Demonstration on nutri-rich recipes

## Drumstick (*Moringa oleifera*) leaves powder supplementation in adolescent girls

Drumstick is miracle tree which is mineral packed, vitamin rich and nutritious vegetable. Drumstick seed, leaves, roots and flowers are often used in traditional medicine products in human food. This vegetable serves as a valuable source of nutrient for all age groups. KVK Morena, Madhya Pradesh conducted demonstration on Drumstick (*Moringa oleifera*) leaves powder supplementation in 15 adolescent girls to increase hemoglobin. Drumstick (*Moringa oleifera*) leaves powder was supplemented by chapatti, potato and dal. The supplementation resulted increase in nutritional status of adolescents girls. Total 4.31 percent increase in Hb level and 0.74 percent increase in weight was observed.

### Nutritional parameters

Nutrient contents per 100g	DLP supplemented food items		
	Chhapati	Potato	Dal
Protein (g)	13.58	3.58	23.35
Fibre (g)	2.84	2.73	9.81
Iron (mg)	7.09	2.65	8.45
Calcium (mg)	778.5	340.5	815.5



Demonstration on Drumstick leaf powder Supplementation



Fortification of chapati by moringa powder

## Bio-fortified Varieties

### Bio-fortified Wheat Varieties Fulfilling Nutrient Demands of Farm Families

Bio-fortified wheat varieties were promoted by KVK Harda, Madhya Pradesh to fulfill nutritional requirement especially micro-nutrients like iron, zinc and protein. These varieties are also the source of extra income of family due to more demand of bio-fortified durum wheat in the market. KVK-Harda has conducted many trainings and awareness programmes related to Bio-fortified varieties of wheat and other crops and its effect on health for farm families from 2017-18 onwards as a result around 215 ha area has been covered under the bio-fortified wheat varieties in Abgaonkhurd village which is transformed as Nutri-SMART Village by the KVK. HI 8663 (Poshan), HI 8759 (Pusa Tejas), HI 8737 (Pusa Anmol) varieties were adopted by the farm families and consumed as wheat flour, dalia, dhokla and bati flour in their daily diet for nutritional security. Consumption of these varieties fulfilling protein, energy, calcium, iron, zinc requirement by 60, 38.02, 20.50, 76, 107 per cent respectively of RDA.



Demonstration on wheat bio-fortified varieties

### Bio-fortified Maize Variety for Nutritional Security

Smt Sonu Katara of Jamthun Village, District Ratlam, is innovative graduate farm women having total land holding is 1.25.0 ha which is irrigated. She is sowing maize and soybean in kahrif season while in rabi, mustard, chickpea and wheat cultivating. She got training from KVK Ratlam on bio-fortified maize varieties cultivation. Now, she started cultivation of maize bio-fortified variety (IQMH 203) under the guidance of the KVK Ratlam. KVK was providing technical backstopping by field visit, agro-advisory services, group discussion and diagnostic visit at her field. IQMH 203 variety yield was higher (9.09 %) in comparison to hybrid variety. Also this variety is rich in lysine (3.48 % in protein) and tryptophan (0.77 % in protein) in comparison 1.5-2.0 % lysine and 0.3-0.4 % tryptophan in popular hybrids.



Demonstration on maize bio-fortified varieties



## 4. NUTRITION LITERACY

The second Sustainable Development Goal acknowledged the persistent problem of hunger, food insecurity and undernutrition in the world. 'Nutrition literacy' can play a key role in changing outcomes of nutrition related interventions and programmes. Nutrition literacy may be defined as the extent to which individual have the ability to obtain process and understand basic nutrition concept and information and adopt it. It is also a skill needed to make appropriate nutrition decisions. It provides information about nutrient rich food, traditional food practices, new food exposure, seasonality and locally available foods, food preparation skills, care and feeding practices. Nutrition literacy might be helpful in changing nutrition related behavior because healthy diet practices plays important role in prevention of malnutrition. However, understanding what comprises a healthful diet is complex and may require high cognitive skills.

Inadequate nutrition literacy may contribute to food insecurity. Food and Agriculture Organization (FAO) also emphasized the need to educate people about eating the right food to combat the problem of malnutrition. Participative and learning approaches are required for transmission of information and knowledge on nutrition. Krishi Vigyan Kendra are disseminating nutrition related information and knowledge by conducting awareness and training programmes, demonstration of traditional food rich *thali*, *poshan mala*, *poshan rangoli* and *poshan* calendar under Nutri-Sensitive Agricultural Resources and Innovation programme. KVKs are conducting training programmes on nutritive recipes made by locally available food items and making of traditional food to farm women and aganwadi workers. KVKs also demonstrated nutrition garden in residential schools and aganwadi centers so that children and farm women may also aware about the seasonal fruits and vegetable and used it in their food menu. Nutrition literacy has pivotal role in prevention of malnutrition by creating awareness among peoples about healthy diet and diet practices to incorporate in their lifestyle.



Nutrition Literacy programmes organized by KVKs

## 4.1 Interventions by Krishi Vigyan Kendras on Nutrition literacy

### Nutrition Garden at residential School

Krishi Vigyan Kendra- Kanker has done pioneer work in establishment of nutrition garden in school premises. KVK conducted demonstration on their farm in 300 sq m area which was sufficient to fulfil the vegetable requirement of a normal family. Vegetables crops were grown season wise and in a manner for year round vegetable production. The Collector of Kanker district Mrs. Shammi Abidi was very impressed with the work of KVK on nutrition garden when she visited to KVK Kanker. She ordered for establishment of nutrition garden in residential school with the assistance of KVK Kanker. In 2015-16, nutrition garden was established in ten school, later in 2016-17 it was established in 30 schools and now it was decided to establish nutri-garden in every school. KVK also conducted training programme on nutrition garden for hostel warden and principals of the schools. This intervention has saves Rs. 12000/six month for every school.



Nutrition garden at school

### Poshan Thali

Krishi Vigyan Kendra is promoting *poshan thali* to bring awareness about nutrition rich healthy diet and their incorporation in diet plan of different critical phases of life for nutritional security. The *thali* is enriched with traditional food items i.e. richest source of micronutrient and energy and made by locally available food items.



Poshan thali

**Poshan Thali according to different age group by Krishi Vigyan Kendra-Raigarh, Chhattisgarh**

## Poshan Thali for different stages


### Poshan Thali for babies

**Daily recommended quantity**

	(0-6 months)	(6-12 months)
Body weight (kg) -	5.4	8.6
Energy (Kcal) -	108	98
Protein (/ kg Body weight)-	2.05	1.65
Calcium (Mg.) -	500	500
Vitamin A -	350	350

**Dietary supplements**

Khichdi, lentil water, milk, lai/murra with milk





### Poshan Thali for Adolescents

**Daily recommended quantity**

Energy (Kcal) -	2060
Protein (gm) -	65
Fat (gm) -	22
Calcium (Mg) -	600
Iron (Mg) -	28

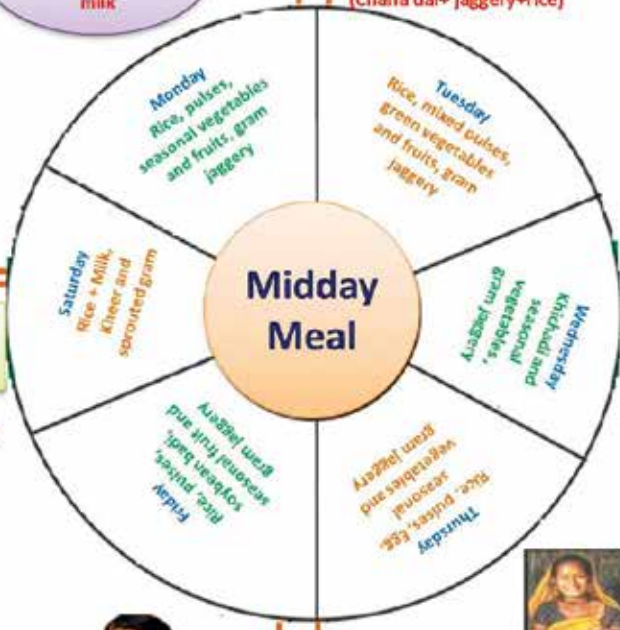
**Poshan Thali**

Rice : 100 gm  
 Mix Dal : 30 gm  
 Cholai Bhaji : 100 gm  
 Tomato Chutney : 100 gm  
 Puri Roti : 50 gm  
 (Chana dal+ jaggery+rice)

**Nutrition Elements :**

Energy (Kcal) -	990
Protein (gm) -	15
Fat (gm) -	10
Calcium (mg.) -	260
Iron (mg.) -	14




### Poshan Thali for Pregnant women

**Daily recommended quantity**

Energy (Kcal) -	1875+300
Protein (gm) -	50+15
Fat (gm) -	30
Calcium (mg.) -	1000
Iron (mg.) -	38


**Poshan Thali**

Rice : 100 gm  
 Moong Dal : 30 gm  
 Roti : 2 (50 gm)  
 Kochai Kari: 100 gm  
 Bhatua: 100 gm  
 Salad: 100 gm



**Nutrition Elements**


Energy (Kcal) -	850
Protein (gm) -	24
Fat (gm) -	10
Calcium (mg.) -	400
Iron (mg.) -	13



### Poshan Thali for Lactating Mother

**Poshan Thali**

Rice : 100 gm  
 Moong Dal : 30 gm  
 Panpurawa Roti : 2 (100 gm)  
 Tomato Chutney : 100 gm  
 Soybean badi: 50 gm  
 Sprouted Salad : 100 gm  
 Peanuts + Jaggery : 40 gm




**Daily recommended quantity**

	(0-6 months)	(6-12 months)
Energy (Kcal) -	1875+550	+400
Protein (gm) -	50+25	+18
Fat (gm) -	20+45	+45
Calcium (mg.) -	1000	1000
Iron (mg) -	30	30

**Nutrition Elements**

Energy (Kcal) -	1100
Protein (gm) -	30
Fat (gm) -	20
Calcium (mg.) -	400
Iron (mg.) -	16



### Poshan Rangoli

Poshan rangoli are made up of pulses, cereals, nutri cereals, vegetables and fruits promoted by Krishi Vigyan Kendras to bring awareness among farm women about the sources of protein, minerals and fibers.



Poshan rangoli made by food grains, fruits and Vegetables

### Poshan Mala

Poshan mala is also a creative idea to bring awareness about nutritive sources among farm women. Poshan mala made of pulses, oilseeds, vegetable and other nutritive crops were prepared and demonstrated to beneficiaries to make them aware about the sources of nutrition.



Protein Power of Pulses



Iron & Calcium Rich Mala



Alsi (flaxseed) & Mahua  
Poshan Mala

## Poshan Calendar

Agriculture based *poshan* calendar were prepared at zonal level for which reference were taken from nutrition book, Krishi Vigyan Kendras, Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur and Women and Child Development Department, Madhya Pradesh. This calendar is prepared month wise for *poshan* related activities. List of crops grown in particular month were described for nutrition garden, recipes of nutritive foods and nutritional diets for children, adolescent girls, pregnant ladies and lactating mother are described in this calendar.

### Agriculture Based Poshan Calendar

पोषण करे वाली पद, अपनी पकी करे ! खा-पके कर खाये के प फलके दुर !

**January-February**

Crop	Quantity (kg/ha)	Moisture/Water
Carrot	100	Carrots require 4.0-7 mm/hr. rain, irrigation or portable can also be taken in place of soil.
Potato	50	Two levels needed
Leafy vegetables	200	Half bush/cowled
Other vegetables	75	Half bush/cowled
Yellow chole	75	Half bush/cowled
Green chole	50	Half bush/cowled
Milk	100	1 cup
Sugar and Jaggery	10	100 grams



**Grow in the main time garden set in the month of January-February**

Vegetables	Nutrients	Fruits	Nutrients
Drumstick, Fenugreek, Cudra, Bellard, Carrot, Pumpkin	Vitamin, Iron, Calcium, Minerals	Papaya	Vitamin A
Bean	Vitamin-C, Mineral	Orange & lime, Jack, Wood Apple, guava, Pear	Vitamin C, Mineral
Mushroom	Iron, Vitamin	Iron, Vitamin and Other Minerals	Minerals & Minerals, Energy
Cucumber, Bean, French bean, cabbage, cauliflower	Iron, Vitamin, Minerals	Peanut	Calcium, Energy

**To remove the deficiency of blood in women, drink 1 glass of sweet milk mixed with 1 teaspoon turmeric powder. To overcome the deficiency of calcium, include milk and green leafy vegetables in the diet.**

**Beneficial coincidence**

- Seasonal fruits should be consumed
- Fruits other than juicy fruits should be eaten after meals.
- You can drink mango and cow's milk mixed together.
- Bathes and/or cold can be treated.
- Milk can be eaten with milk.
- Amle powder can be taken with curd.
- You can eat curd with cooked pulses.
- You can eat green leafy vegetables with milk.
- Fenugreek greens can be eaten with curries.
- After a meal, take rest on a left side for some time.

**Importance of Drumstick**

- It is rich in iron and calcium.
- It is rich in medicinal properties.
- By giving juice of drumstick leaves to children, their growth is improved.

**Warning:** Drumstick leaves are not to be eaten if they are rotten.



**Work to be done in this month**

**Agricultural Operation**

- Prepare seedling for the new crop of brinjal and chili.
- Prevent aphids in fenugreek and okra/cucumber crops.
- Prevent the stem fly and fruit borer pest in pea.
- Control of spider, thrips, whitefly pest in brinjal, okra, tomato.
- Use cycle kidge for weeding in vegetable beds.

**Food Processing**

- Get the chips of tomatoes, herbs, potatoes, etc., dry them and use them.
- Dry the leaves of drumstick in the shade.
- Use sprouted grains by drying, roasting and grinding them.
- Prepare multi-grain flour by mixing one kg of processed sorghum/pigeon in ten kg of wheat.

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Department of Women and Child Development, Madhya Pradesh

### Agriculture Based Poshan Calendar

**January-February**

Recipes for making nutritious dishes

**Drumstick's curry**



**Ingredients required:** Drumstick (100g), Besan - 1 cup, Ghee / Mustard - 4 cups  
For tempering: oil - 1 tsp, Mustard - 2 pinch, cumin - half teaspoon, turmeric powder - half teaspoon, fenugreek seeds - half teaspoon, mustard - half teaspoon, green chili - 2 finely chopped, curry leaves, salt (as per taste).

**Process:**

- Add gram flour, turmeric, salt, red chili to the curd and mix well.
- After heating oil in a pan, tempering with asafoetida, cumin seeds, fenugreek seeds, mustard seeds, green chilies and curry leaves, add chopped beans of drumstick.
- Add the whipped mixture to the tiffin and cook it well on low flame. Serve garnished with chopped coriander leaves.

**Drumstick's pickle**



**Ingredients required:** Drumstick pods - 200 grams, salt - 1 tsp, Mustard oil - 1 to 1.5 cups, salt - 1 tsp, Anardana - a pinch, Turmeric powder - 2 tsp, Fenugreek powder - 1 tsp, red chili powder - quarter tsp, black pepper powder - quarter tsp, yellow mustard (mustard) oil - 2 tsp.

**Process:**

- For making pickle, first of all, wash and dry the drumstick pods, cut them into small lengths, mix one teaspoon of salt and keep them in a box for three days.
- Once a day, stir the drumstick pods up and down with a spoon.
- After three days, prepare pickle from the chopped drumstick pods kept in salt.
- Put oil in a pan, heat it well, then add the spices and stir the pan down and when the oil cools down a bit, add all the spices and mix. Now mix the prepared drumstick beans in the spices.
- After the prepared pickle cools down completely, keep it in a glass jar.
- Keep the pickle going up and down with a spoon once a day.

Drumstick pod pickle can be eaten after keeping it for 1-2 months. To use the pickle for a long time, heat a small amount of oil in the pickle, let it cool down so that the pickle remains submerged in the oil.

**Drumstick's vegetable**



**Ingredients required:** Drumstick - 8-10, Chopped potatoes - 1 cup, Tomato - 2-3, Coriander powder - half spoon, Coriander powder - 1 spoon, Oil - 2 spoon, Turmeric, Salt - as per taste.

**Process:**

- Wash oil in a pan and heat it. Add cumin seeds and let it sizzle, then add chopped potatoes and fry for some time.
- Now add drumstick and fry it with potatoes and cook for some time after adding all dry spices, salt and chopped tomatoes.
- Add 1 cup of water and cook on low flame till the potatoes are cooked.
- Remove from the flame and serve with green chutney and/or rice.

**Drumstick's chutney**



**Ingredients required:** Drumstick leaves - 1 bundle washed and dried by putting with a cloth, oil - 2 tsp, cumin - half tsp, red chili - 5-7, soaked gram dal - half tsp, washed and dried - half tsp, mustard - half teaspoon, Anardana - 1 piece soda/lemon, water - 100 ml per taste.

**Process:**

- Heat a tablespoon of oil in a pan.
- Roast cumin, red chili, and Anardana, then take them out of the pan and keep them in a separate plate.
- Now drumstick leaves with a spoonful of oil in a pan and stir until they become soft and let it cool.
- Grind all the ingredients coarsely with salt and mustard.

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Poshan Calendar

## Nutrition literacy by training and awareness campaign

Krishi Vigyan Kendra- Dhamtari conducted training on fish cum vegetable culture, nutritious food related to fish, mushroom production and awareness program about *poshan thali*. These programmes aimed to aware farm women and farmers about benefit of eating fish, mushroom and traditional foods are rich in high quality protein, vitamin and minerals required for healthy life. Fish is an important source of omega -3 fatty acids. These essential nutrients keep our heart and brain healthy. After training and awareness campaigns the farm women got aware about nutrition and compulsorily include nutritive food in their family diet. The plants like drumstick, papaya and vegetable seeds were planted by them in their backyard *poshan badi* as a result the villagers are very less dependent on outside market for vegetables and fruits.



Training and awareness programme on nutrition

## 5. SMALL SCALE INCOME GENERATION

Krishi Vigyan Kendra also conducted demonstration on small scale income generation interventions to empower women economically besides nutrition security under NARI programme. The aim of economic independence to give women a higher status within the family and enhance women's control in the income and spend the greater amount devoted to their children's education, health and nutrition. Generally, women are using their income for wellbeing of the family. Thus, economic independence helps women to choose right food items for household nutrition security and also take part in decision making for household. Hence, KVKs also conducting training programmes and demonstration that not only improve nutrition status of women but also give them economic independence.

Farm women have skills to do small-scale agricultural and animal production, processing and preservation by value addition. KVKs are providing training according to skills of the women's and motivating them to work in group by formation of SHG/FPO. Food drying, processing and preservation; preparation and marketing of dairy products; establishment and improvement of livestock and poultry raising, other activities relevant to agricultural and animal production and handicrafts are practices in which farm women are engaged for small scale income generation.



Small scale income generation activities

## 5.1 Interventions by Krishi Vigyan Kendras for economic empowerment

### Cultivation of mushroom in groups

The “Modhuma” SHG of Modhupur Deorigaon turned into a successful SHG through cultivating Mushroom. The group consisting of 15 members which was established in the year 2020 performed as usual activities. KVK Dibrugarh conducted various programmes under NARI in the village, cultivation of mushroom was one of them. The members of the group showed much interest and enthusiasm in performing this activity. Spawns of oyster mushroom were provided by KVK, Dibrugarh conducted detailed demonstration of each step on oyster mushroom cultivation. In just four months they obtained Rs.12000 by selling mushrooms in local market. They also developed mushroom production unit that will be beneficial to the community in large. An individual can avail protein 3.1gm, potassium 318 mg, dietary fibre 1 gm, vitamins and minerals from 100 gm mushroom. Moreover, it will be helpful for diabetic and heart patients.



Mushroom production

### Production of jackfruit chips

The value addition of jackfruit is avoided by many farmers instead it's used as a vegetable because of its aroma. One of the gainful utilization of jackfruit is production of fried chips. It was the enterprising spirit of Smt. Y. Indira Devi, a resident from Lourembam Makha Lekai Village in Manipur, to take up this venture for further production to produce quality fried jackfruit chips. Method demonstration on popularization of jackfruit chips is being carried out at Lourembam by KVK-Thoubal. She has earned a good income from the jackfruit chips during the peak season and encourage other farm women to follow her footsteps. The product recovery is 700g chips /1kg of fresh jackfruit. The product is marketed at the rate of Rs.350/700g in the local areas.



Processing of jackfruit into chips

## Food processing unit established by women SHG

The SHG of women attended training programme on value addition of millets conducted by KVK, Jammikunta. In this training, they learned & involved in practical works, like preparing millet food items (biscuits, cakes, different snack items with millets), ready to cook, ready to eat items etc, packing & labeling and marketing techniques. After attending the training programme, these SHG women formed a group & registered 'Vijaya Sri J.L.G.' food processing unit & registered under FSSAI also. They started preparing ready to eat items made with millets (Jowar biscuits, ragi biscuits, korra biscuits, bajra laddu, korra cake, ragi laddu, murukulu with millets etc). Along with these items they have flour mill also, during festival times this flour mill supports this group economically. They supply on order basis and participate in Exhibitions conducted by NABARD and IKP DRDA, Karimnagar. This group is earning 18000/- to 20000/- per month from their sales and living happily with their family members and willing to expand their business in future.



Millet food processing activities

## A Woman reached to the height of Managing Director of FPO

Mrs. S. Tamil Selvi is 26 years old, completed BE graduation and worked in a private company with a salary of Rs. 20,000/month. She was not satisfied with her job as it could not meet her family requirements. She approached KVK, Ariyalur and attended training programme on Desi Bird Rearing. She started feeding the birds with locally available feed stocks to reduce the cost on feed and also established one low cost hatchery unit with a capacity of 120 eggs and one automatic hatchery unit with a capacity of 250 eggs. She is earning an income of Rs.45,000/month now and serving as a role model for other women farmers. She received successful women entrepreneurship and Best Women Entrepreneur award. She also formed a "Desi Bird (Siruvidai) Association" with the technical support from ICAR – KVK, Ariyalur District and acting as an Association leader with more than 100 small poultry farmers of Ariyalur district that turn into "Animal Husbandry and Fisheries Farmer Producer Company" supported by NABARD and appointed as Managing Director position to look after activities of FPO that comprises 300 members.

## An enthusiast rewriting her fate from the lands of broken moon-Cold Arid Ladakh

Mrs. Padma dolkar is from Chemdey village of Leh District. She is a marginal farmer with only about 7 kanals of land and earlier cultivating only barley and some vegetables barely minimum for her domestic consumption. She took one month training at KVK Leh and after that she has turned into a hardcore vegetable gardener who grows her own nursery and even distributes them among relatives and neighbors. She grows a number of vegetables and even utilizes technologies that not only fulfill her domestic vegetable requirement but also generate income by selling them in the market. From an area of about 218 m<sup>2</sup>, Padma earns an amount of Rs.90539 in six months. That means she is making Rs. 15090 per month from agriculture alone. She wants to include a greenhouse in her nutri-garden where she plans to grow vegetables that will be available in lean period.



Vegetable cultivation for income generation

### Bees empowering the women

Bibi Paramvir Kaur, a successful and progressive farm women living in village Bhunder under Maur Mandi block of Bathinda district, who has become a successful beekeeper. This lady beekeeper has started beekeeping with 5 hives after getting training in bee keeping from Krishi Vigyan Kendra, Bathinda and now she is maintaining 150 hives without financial support. Hands on training were also provided to Paramvir on various aspects like maintenance of bee colonies round the year, diagnosis & management of bee enemies, processing and marketing of honey for starting beekeeping. During dearth period, she moves her hives to Rajasthan so that honey production continues uninterrupted. She sold honey in the village without any brand at Rs. 300-350 per kg shows her ability to produce good quality honey from which earned Rs. one lakh per annum. She has also given employment to two workers in her apiary. Now she has applied for getting a brand name to FSSAI.



Bee keeping

### Hope in Hard Times: Sri Guru Arjan Dev Self Help Group

Mrs. Charanjit Kaur of village Bhagwanpura, Tehsil Samrala, District Ludhiana belonging to landless family had low socio-economic status. She and her husband depended on daily job for their livelihood. They were guided by Krishi Vigyan Kendra Samrala from where she got technical training to start some work for better earning. The KVK experts gave training of her interest and form a Self Help Group by involving 10 likeminded women of her village to earn a better livelihood. Then she formed "Sri Guru Arjun Dev Ji Self Help Group". Under NARI, KVK have trained all the women members in layout of kitchen gardening, preservation and value addition of fruits and vegetables. Vegetable kits and other inputs were provided to them and they were also prepared value added product. KVK helped in marketing of their products by providing a platform at KVK seed shop, through Kisan Hut, linking its clientele with group, exhibiting their products during Kisan Melas, arranging their stalls during various extension functions. The economic status of members of SHG is better than it was at time of group formation.



Value added products



Nutrition garden

### **Kadakhnath poultry farming**

*Kadakhnath* poultry farming is sustainable for income generation along with nutritional security. This story highlighted the hard work and dedication of Hemlata Dhurve who became an entrepreneur of *kadakhnath* farming in Chakar village of Pipariya tahsil in Narmadapuram (M.P). KVK Narmadapuram provided 40 *kadakhnath* chicks with the help of the veterinary department of Pipariya and many trainings to the farmer on *kadakhnath* farming with continuous visits to their farm. The farmer has successfully generated an income of Rs. 15000 from eggs & Rs. 32000 from meat. The progressive farmer Hemlata Dhurve sold eggs on a commercial scale. She was providing fertile eggs to other 20 farmers. Now 40 farmers were practicing this less capital intensive and sustainable economic return & livelihood oriented enterprise in the district.



*Kadakhnath* Poultry rearing

## 6. TECHNOLOGICAL INTERVENTIONS BY KRISHI VIGYAN KENDRAS AND ITS PERFORMANCES

### 6.1 Demonstration on Nutrition Garden

At national level, under this programme, a total of 34966 nutrition garden established that benefitted 67875 farm women and farmers during the year 2019-2022. In yearly basis 12020, 6265 and 16681 nutrition garden were established which benefitted 18564, 19001 and 30310 farm women and farmer during 2019-20, 2020-21 and 2021-22, respectively. These nutrition garden includes backyard/kitchen garden, community nutri-garden, terrace garden and vertical garden.

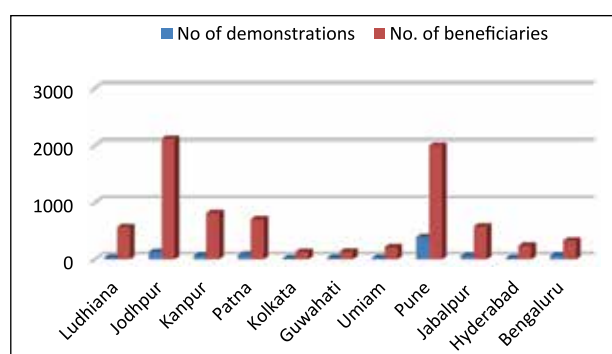


Fig 1: Total nutrition garden established by ATARIs and beneficiaries from 2019-20 to 2021-22

Table: 6.1 Year wise nutrition garden established by ATARIs and beneficiaries benefitted

ICAR-ATARI	2019-20		2020-21		2021-22	
	No of established	Beneficiaries	No of established	Beneficiaries	No of established	Beneficiaries
Ludhiana	787	911	53	632	3790	5303
Jodhpur	3423	4504	2685	3335	3663	3668
Kanpur	1239	1392	644	1272	1965	3441
Patna	946	4343	15	393	707	6151
Kolkata	53	53	25	157	367	377
Guwahati	452	513	28	167	347	565
Umiam	487	869	56	260	704	1684
Pune	2363	2882	1882	4427	3420	5375
Jabalpur	1040	1300	149	1324	183	1778
Hyderabad	971	1362	375	5059	1276	1353
Bengaluru	259	435	353	1975	259	615
<b>Total</b>	<b>12020</b>	<b>18564</b>	<b>6265</b>	<b>19001</b>	<b>16681</b>	<b>30310</b>



Demonstration on nutrition Garden

## 6.2 Demonstration on Bio-fortified varieties

Food grains rich in essential nutrient plays a pivotal role in providing balanced food in sustainable manner. Bio-fortified varieties have potential to supply micro-nutrients and a major step in combating malnutrition. At national level, under this programme, a total of 887 bio-fortified varieties demonstration and were conducted which benefitted 7787 farm women and farmers during the year 2019-2022. In yearly basis total 551, 125 and 211 nutrition garden were established which benefitted 3662, 1683 and 2442 persons during 2019-20, 2020-21 and 2021-22, respectively.

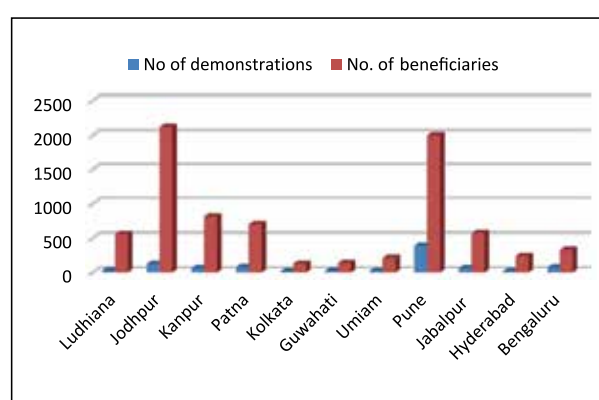


Fig 2: Total demonstration conducted on bio-fortified varieties by ATARIs and beneficiaries from 2019-20 to 2021-22

Table: 6.2 Year wise demonstration conducted on bio-fortified varieties by ATARIs and beneficiaries benefitted

ICAR-ATARI	2019-20		2020-21		2021-22	
	No of demonstrations	Beneficiaries	No of demonstrations	Beneficiaries	No of demonstrations	Beneficiaries
Ludhiana	8	230	6	77	16	253
Jodhpur	85	1294	18	312	20	511
Kanpur	20	186	19	259	24	369
Patna	44	126	23	338	9	236
Kolkata	6	65	4	19	4	40
Guwahati	3	15	13	76	9	42
Umiam	4	61	3	23	15	124
Pune	357	1417	15	359	14	219
Jabalpur	16	116	16	155	29	302
Hyderabad	6	119	6	45	7	72
Bengaluru	2	33	2	20	64	274
<b>Total</b>	<b>551</b>	<b>3662</b>	<b>125</b>	<b>1683</b>	<b>211</b>	<b>2442</b>



Durum wheat variety HI 8713



Wheat variety Pusa Ujala (HI -1605)

Under this programme, bio-fortified varieties of cereals, millets, oilseeds, pulses, vegetables and tuber crops were demonstrated. During 2020-21 (Table 6.3), pearl millet crop demonstrated in 111.90 ha area followed by wheat (104.13 ha), mustard (98.6 ha), rice (47.29 ha), maize (16.61 ha), finger millet (10.00 ha), sorghum (10 ha), lathyras (4.0 ha), lentil (3.2 ha), groundnut (2.25 ha), sweet potato (2.22 ha) and cauliflower (0.22 ha)

During 2021-22 (Table 6.4), wheat crop demonstrated in 189.20 ha area followed by mustard (103.10 ha), pearl millet (96.50 ha), rice (52.00 ha), potato (35.00 ha), finger millet (20.00 ha), maize (16.80 ha), groundnut (10.5 ha), lentil (10.0 ha), sorghum (10 ha), sweet potato (5.8 ha), and soybean (1.0 ha).

**Table 6.3 Bio-fortified varieties demonstrated under NARI Programme during 2020-21**

Category	Crop	Variety	Area (ha)	Beneficiaries
Cereal	Wheat	BHU 25 & BHU 31, HI 8663 (Poshan), K-1006, MACS-4028, PBW1 Zn, WB 02, Karan Vandana (DBW187), HI-8759 (Pusa Tejas), DDW 47, HPBW-01, DBW-222	104.13	561
	Rice	CR Dhan - 310, CR Dhan-315, CR Dhan 309 & 311, DRR-45, DRR-48, DRR-50, Red Rice (Ratnagiri-7)	47.29	143
	Maize	HQPM 1, HQPM 5, LQMH1 (IMH-QPM-1530), Pusa Vivek QPM-9, Guru 99, Bio-9637	16.61	114
Millet	Finger millet	Dapoli Safed-1	10.00	15
	Pearl millet	ABV-04, AHB-1200, HHB-299 & HHB-311, VR 929 (Vegavathi), Dhanshakti, GHB-1225, , MPMH-17	111.9	444
	Sorghum	Parbhani Shakti, Phule Revati	10.00	25
Oilseed	Groundnut	Girnar 4 (ICGV 15083)	2.25	9
	Mustard	Pusa Mustard 30, Pusa Mustard 31	98.6	261
Pulses	Lentil	Pant Ageti Massor 1 (L4717), Pusa Vaibhav	3.2	20
	Lathyras	Ratan, Pratik	4.0	20
Vegetable	Cauliflower	Pusa Beta Kesari 1	0.22	40
Tuber	Sweet Potato	Bhu Krishna, Bhu Sona	2.22	31
<b>Total</b>			<b>410.42</b>	<b>1683</b>



Rice variety CR Dhan 310



Upma of wheat variety HI 8663

**Table 6.4 Bio-fortified varieties demonstrated under NARI Programme during 2021-22**

Category	Crop	Variety	Area (ha)	Beneficiaries
Cereal	Wheat	HI 8759, HI 8663, HI 1633, DBW 187, MACS 4028, PBW Zn 1, WB 02, HPBW-01, DBW-322, DBW-303	189.2	843
	Rice	Zinco Rice MS, CR Dhan 310, CR Dhan 311, DRR Dhan 45, DRR Dhan 48	52.0	377
	Maize	HQPM 5, Vivek QPM 9, HQPM 5, Pusa HM 4	16.8	474
	Pearl Millet	HHB 299, Dhanshakti, ABV 04, AHB 1200 Fe	96.5	50
Millets	Finger millet	Indravathi	20.0	203
Pulses	Lentil	IPL 220	10	5
Oilseed	Groundnut	Girnar 4	10.5	21
	Mustard	Pusa Mustard 30	103.1	357
	Soybean	NRC-127	1.0	10
Tuber	Potato	Kufri Nilkanth	35.0	9
	Sweet Potato	Bhu Sona, Bhu Krishna	5.8	93
<b>Total</b>			<b>540</b>	<b>2442</b>



Wheat variety HI 8663



Soybean variety NRC 127

### 6.3 Demonstration on value addition activities

Value addition activities not only provide employment opportunities but also supplied nutrients in the rural areas. The KVKs under NARI programme promoting value addition activities to the farm women for economic empowerment as well as supply nutrients from the value added local farm products. Under this programme, at national level, a total of 1800 activities conducted that benefitted 26692 farm women and farmers during the year 2019-2022. In yearly basis 352, 771 and 677 value addition activities conducted which benefitted 6636, 11218 and 8838 farm women and farmers during 2019-20, 2020-21 and 2021-22, respectively.

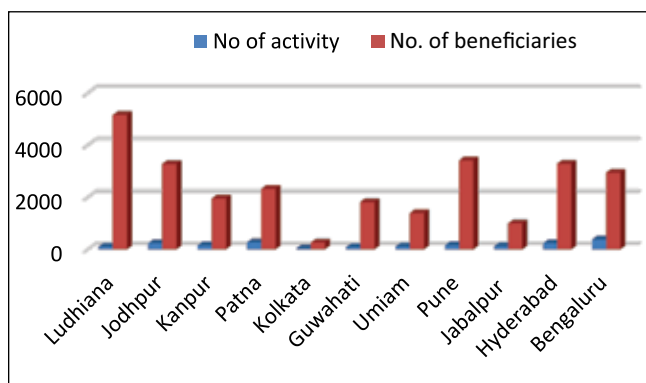


Fig 3: Total value addition activities conducted by ATARIs and beneficiaries from 2019-20 to 2021-22

**Table: 6.5 Year wise demonstration conducted on value addition activities by ATARIs and beneficiaries benefitted**

ICAR-ATARI	2019-20		2020-21		2021-22	
	No of activities	Beneficiaries	No of activities	Beneficiaries	No of activities	Beneficiaries
Ludhiana	19	459	24	3140	51	1544
Jodhpur	34	910	191	2356	0	0
Kanpur	52	728	24	226	69	987
Patna	26	814	21	244	211	1258
Kolkata	5	87	23	107	5	56
Guwahati	34	1051	15	193	28	558
Umiam	22	357	20	203	61	814
Pune	27	596	60	1354	64	1452
Jabalpur	48	456	25	95	42	437
Hyderabad	77	1078	69	565	79	1632
Bengaluru	8	100	299	2735	67	100
<b>Total</b>	<b>352</b>	<b>6636</b>	<b>771</b>	<b>11218</b>	<b>677</b>	<b>8838</b>



Value added product of mushroom



Mahua Nutri-bar

## 6.4 Training programmes in Nutri-SMART Village

Training activities are being conducted by the KVKs to enhance skills of the women on preparation of nutrition rich dishes by locally available resources, food fortification, nutrition garden establishment and crop plan for nutrition garden, production practices of bio-fortified varieties and their consumption, value addition activities etc. Under this programme, at national level, a total of 7778 training programmes conducted that benefitted 218574 participants during the year 2019-2022. In yearly basis, total 2238, 2883 and 2657 training programmes were organized which benefitted 62573, 74368 and 81633 participants during 2019-20, 2020-21 and 2021-22, respectively.

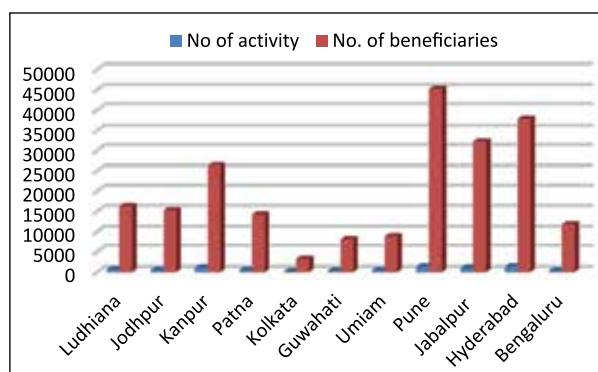


Fig 4: Total training programmes organized by ATARIs and beneficiaries from 2019-20 to 2021-22

Table: 6.6 Year wise training programmes organized by ATARIs and beneficiaries benefitted

ICAR-ATARI	2019-20		2020-21		2021-22	
	No of activities	Beneficiaries	No of activities	Beneficiaries	No of activities	Beneficiaries
Ludhiana	249	5756	112	2670	276	7797
Jodhpur	274	7909	290	7201	0	0
Kanpur	132	2894	456	11704	523	11743
Patna	61	1369	261	8033	185	4695
Kolkata	33	1211	26	732	50	1229
Guwahati	26	483	135	3585	184	3953
Umiam	58	774	182	4072	191	3939
Pune	431	14772	320	10477	578	19937
Jabalpur	414	10570	412	10733	207	10852
Hyderabad	289	8537	635	13461	409	15788
Bengaluru	271	8298	54	1700	54	1700
<b>Total</b>	<b>2238</b>	<b>62573</b>	<b>2883</b>	<b>74368</b>	<b>2657</b>	<b>81633</b>



Training programme on nutri-rich foods



Training programme on value addition

## 6.5 Extension activities for nutrition literacy

Nutrition literacy can change nutrition related behavior by which person to maintain a healthy lifestyle by choosing appropriate healthy foods. Thus, KVKs were engaged in organization of extension activities to increase the nutrition literacy in the rural areas. *Poshan* calender, *poshan mala* and *poshan rangoli* of vegetables, fruits and food grains were demonstrated to increase the knowledge of the rural women and adolescents about sources of micro-nutrients. *Poshan thali* made of nutri rich traditional food for all, specially for young children, adolescents, pregnant women and lactating mothers were demonstrated. Awareness campaign, field activities etc. conducted and nutrition literature were distributed. As well as *Poshan Maah* also celebrated by the KVKs in the month of September in every year under this programme. At national level, a total of 12712 extension activities were conducted that benefitted 1612145 farm women and farmers during the year 2019-2022. In yearly basis, total 3443, 5108 and 4161 extension activities were organized which benefitted 731285, 743186 and 137674 farm women and farmers during 2019-20, 2020-21 and 2021-22, respectively.

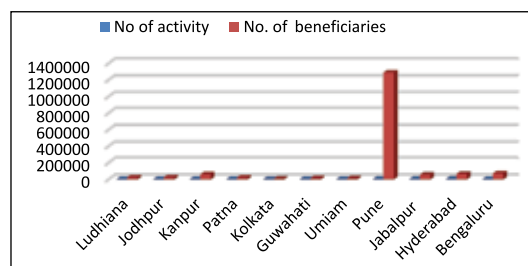


Fig 4: Total extension activities organized by ATARIs and beneficiaries from 2019-20 to 2021-22



Poshan Rangoli

Table: 6.7 Yearwise extension activities organized by ATARIs and beneficiaries benefitted

ICAR-ATARI	2019-20		2020-21		2021-22	
	No of activities	Beneficiaries	No of activities	Beneficiaries	No of activities	Beneficiaries
Ludhiana	191	8146	86	2221	500	11480
Jodhpur	332	11243	303	11078	20	528
Kanpur	151	5220	496	30312	677	21488
Patna	49	1172	381	13106	406	5289
Kolkata	48	2796	24	645	40	840
Guwahati	23	509	155	3762	332	5578
Umiam	79	980	343	3342	302	4873
Pune	608	625387	576	619149	692	40554
Jabalpur	390	11191	985	24479	634	17656
Hyderabad	699	10948	1686	27927	485	22223
Bengaluru	873	53693	73	7165	73	7165
<b>Total</b>	<b>3443</b>	<b>731285</b>	<b>5108</b>	<b>743186</b>	<b>4161</b>	<b>137674</b>

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### (A) Contribution by ATARIs

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