

# Nutrition Garden: A Sustainable Model for Nutritional Security and Diversity

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Food security continues to be a matter of grave concern for India. Despite being the second largest producer of food, India is home to the world's second largest undernourished population (195.9 million). A review of studies examining the link between food security and malnutrition in children suggests a direct association with under nutrition in children in middle-income countries. Another study concludes that under nutrition/stunting is a consequence of household food insecurity.

Fruits and vegetables based nutri garden are not only rich in minerals and vitamins but also; contribute in a big way in maintaining health, overcoming hunger and malnutrition. The nutri-garden ensures access to healthy diet with adequate macro and micronutrients at doorstep. Nutri-garden is playing an active role in eradicating under-nutrition and it is advanced form of kitchen garden in which vegetables are grown as a source of food and income in a more scientific way. For small and marginal farmers, nutri-garden can contribute to the

family diet and provide several other benefits, particularly for women.

Nutri- gardens as they show a Medical Research (ICMR, 2010) recommendation for vegetable consumption can be fulfilled i.e. 300 gm of vegetable per person per day in which 50 g leafy

vegetable; 50 g root vegetables and 200 g other vegetables.

## What is a nutri-garden?

The concept of nutri-gardens builds on the optimal utilization of land to grow vegetables and fruits that can support the nutritional needs of the community and address the gaps in access, quality, and availability of diverse and nutritious diets. It represents an exemplar practice which addresses multiple goals of nutrition security, agri-food diversity, livelihood generation and environmental sustainability. Also, known as integrated homestead food production (IHFP), this concept entails cultivation of small scale plots often adjacent to households for enhanced food security and nutrition with a focus on "nutrition-sensitive, pro-poor & women-controlled approach to household food production". Moreover, homestead gardening can be coupled with promotion of backyard livestock, beehives and/or fish ponds. Research shows that IHFP can be used as a model for

increasing dietary intake (in particular, of micronutrients) and increased income for resource-poor households.

**Table 1: The contribution of nutrition-garden to the sustainable model and nutrition security**

SL. No.	Goal	Role of Nutri-Garden
1.	No poverty	Generate small but constant source of income, especially for women
2.	Zero hunger	Constant and cheapest source of nutritive food
3.	Good health and well being	Ensuring good health of whole family and source of balanced diet for women of reproductive age and young children
4.	Quality Education	Provide nutrition rich vegetable, which improves brain development in younger age and supplement family income, which help to get quality education.
5.	Gender Equality	Selling surplus produce from Nutri-garden generate source of income for women.
6.	Decent Work and Economic Growth	Provide opportunities for entrepreneurship development in rural area especially for women
7.	Sustainable Cities and Communities	Contributes in greening rural and urban areas and help in enhancing resilience from climate and disaster.
8.	Sustainable Consumption And Production	Nutri-garden helps in providing continuous supply of vegetables to households and help to complete nutrient cycle
9.	Climate Action	Strengthen family-level resilience and adaptive capacity to climate related risks and natural calamities.

### The objective of Nutrition Garden

- ✚ By recycling home trash, grey water, and other resources, the front yard, backyard, and space around the living space can be used to grow nutrient-dense vegetables and fruits.
- ✚ The goal is for all family members, particularly women and children, to consume at least 150-200gm of green vegetables and fresh fruits per person per day throughout the year.
- ✚ Integrate backyard poultry and goat farming for improved soil nutrient availability and increased income.

### Principles of Nutrition Garden

- ✚ Fruit vegetables, leafy vegetables, legumes, tuber crops, spices and some medicinal herb along with trees like banana, lemon.
- ✚ Own seed, own input can be used.
- ✚ Integrate livestock and recycle waste through composting.



### Benefits of Nutrition Garden

- ✚ It provides nutritional security
- ✚ Clean environment- Less disease- Better nutrition
- ✚ Organic farming- safe food, low cost, less time involvement (more resilient crops) and improved organic waste management

- ✚ Multiple and mixed cropping - increases dietary diversity and soil nutrition
- ✚ Increase the biodiversity i.e. improves sources of food for both animals and human
- ✚ Reduced the cost of production - supports consumption of nutritious food on regular basis, more profits from sale, scope to buy food that is essential but cannot be grown on own farm
- ✚ Recycling of the waste water
- ✚ Preservation of natural resources like forests and water bodies
- ✚ Good source of uncultivated foods- allows growth of wild foods – weeds, small insects, local fishes and wild fruit.

### Important component of Nutri-garden

#### a. Nutri-Garden produce

- ✚ A diverse range of nutrient-rich vegetable crop, combining traditional and improved varieties, suited to prevailing environmental conditions
- ✚ Garden management based on good agricultural practices (GAP) to overcome production constraints.

#### b. Nutrition

- ✚ Knowledge about the importance of vegetables for nutrition and health and knowledge about good food practices which enhance the uptake and utilization of micronutrients. e.g. Food synergy.

#### C. Sustainability

Supply of high quality nutritional rich vegetables seeds to farming community from an incessant source.

#### Selection criteria for vegetable crop

- Select vegetables liked by the family members, particularly women and children.
- Select a diverse range of vegetables, because all have different properties
- Select vegetables that are hardy, easy to grow, adapted to the local climate and soil.
- Select vegetables varieties tolerant to common pests and diseases.
- Quality planting materials (Seed, cutting, seedling and tubers) of the selected vegetables must be locally available and easily accessible by the family members.
- Include improved varieties but also traditional varieties to maintain agro-biodiversity and cultural heritage.
- New nutritive crop species or varieties can be introduced and tested for acceptability, and this can create enthusiasm for gardening.

### Layout of Nutrition Garden

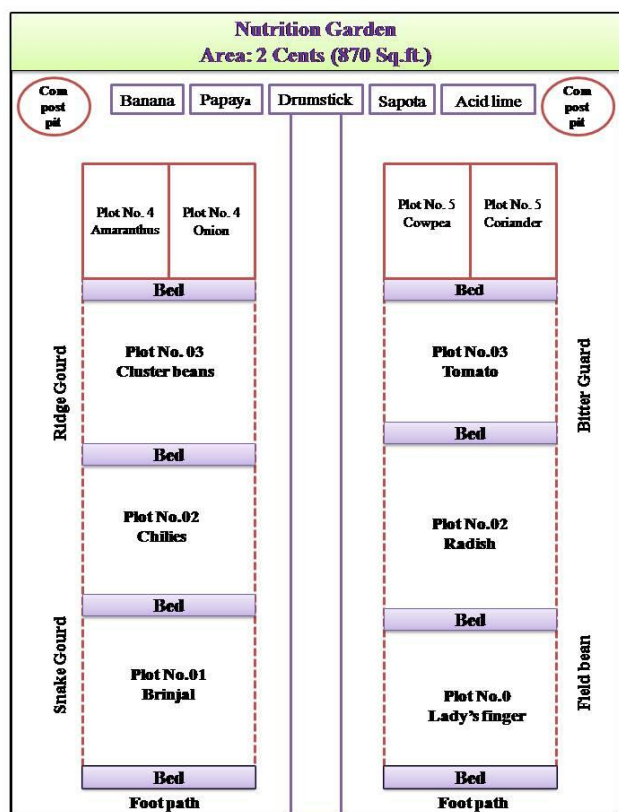
The size of a garden is not defined because it depends on the space available at the backyard of an individual house. As far as the shape is concerned a rectangular garden is preferred to a square one. Normally for a family of 5-6 people, 2 cents (870 sq ft) may be adequate to get vegetables throughout the year.

#### Layout

The main purpose of planning a layout for a vegetables garden is to obtain maximum output and a continuous supply of vegetables. The principles that are to be followed are as given below.

- ✚ Perennial plants such as drumstick, banana, papaya, curry leaf, gooseberry mango, guava, custard, sapota etc., should be planted at the rear end of the garden, so that they may not shade other crops.





- ✚ The adjacent space near the central footpath can be utilized for growing different short duration varieties such as coriander, amaranths, fenugreek, mint etc. these crops can be cultivated in different seasons.
- ✚ The fence surrounding the garden can be utilized for growing creepers and gourds

such as sponge gourd, bitter gourd, snake guard etc.,

- ✚ The compost pits should be placed in the corner of the garden.
- ✚ The garden should be divided into small plots with raised bunds. In the bunds one can grow root crops such as onion, turmeric, ginger etc.

### Conclusion

Nutri-gardens are cornerstone in traditional farming systems, since time immemorial but with time, it has lost its importance. Myriad colored vegetables into the daily diet will enhance the individual's ability to fight diseases and improve immunity. Also innumerable phyto-chemicals in a range of fresh fruits and vegetables act as anti-oxidant, anti-allergic, anti-carcinogenic, anti-inflammatory, anti-viral and anti-proliferative. Nutri-gardens are also very much essential in places and villages which are isolated and far from the local market. Awareness campaign regarding the proper nutrition, nutri-gardening, dietary habits, should be demonstrated in the rural and remote areas. Nutri-gardening is one of the advantageous ways to improve nutrition level in community with minimum investment.

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