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HOMESTEAD GARDENING: AN EMERGING VENTURE TOWARDS ACHIEVING FOOD SECURITY & NUTRITIONAL SECURITY - A STUDY OF SELECTED AREAS OF WEST BENGAL

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ABSTRACT

Although India is becoming relatively self-sufficient to meet the hunger of its people, in the developing world 800 million people currently face food and nutritional insecurity is a mere fact, and the challenges of meeting these needs are likely to become greater in the years ahead. Homestead gardening, an oldest form of agro-ecosystem, is in existence since the dawn of agricultural practice of human civilization, which contributes to household food security as well as nutritional security by providing direct access to food that can be harvested, prepared and fed to the family members, often on a daily basis. Even very poor or near landless people practice gardening which also ensures active family participation. The outcomes of home garden are more equally shared among members of the household and neighbours. Though copybook 'Nutritional Garden' is not found in the homestead of rural households across the third world as it misses the peoples' standpoints to a great extent. This paper focuses on the aspects of home garden and its impact towards achieving food and nutritional security based on the study we had at chandirampur village in Nadia District. We had our experience there, felt peoples' need and tried to incorporate the pros and cons of this farming with their livelihood,. Ultimately we tried to recommend some ways to them. In spite of its great prospect to achieve food and nutritional security, it fails due to fragmentation of homestead land due to transformation of joint to nuclear family, inappropriate garden design, improper management and monitoring, unrealized expectations and obliviously less focus on the research and extension agenda. Having mitigated food and nutritional insecurity & towards a better life, we must address sincerely with a better planning, proper land utilization pattern, replacement with a variety of profitable crops, fence crops, integration between the sub-components and their trade-offs and lastly the government should step forward and put forth recommended initiatives. This study examined the contributions of homestead farming to food security as well as the nutritional security in West Bengal. The authors tried to draw an inference to the easiest path to make the deprived section get rid of impoverishment and malnutrition.

KEYWORDS: *Food & Nutritional Insecurity, Homestead Gardening*

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INTRODUCTION

Agriculture is the backbone of Indian economy. About 56.4% of Indian population's livelihood depends directly on agriculture, accounting for around 14.5% of GDP. Agriculture has critical supply and demand links with the manufacturing sectors. During the past few years, agriculture sector has witnessed spectacular advances in the production and productivity of food grains, oilseeds, commercial crops, fruits, vegetables, food grains, poultry and dairy. During the second Green Revolution, India emerged as the second largest producer of fruits and vegetables in the world in addition to being the largest overseas exporter of cashews and spices.

Agriculture occupies a conspicuous position in Indian policy-making not only because of its contribution to GDP but also because of the large proportion of the population dependent on this sector for their livelihood. The growth in population and wealth stimulated demand because the domestic production was always unable to keep up, and there is increasing speculation that the Indian economy may be overheating leading to inflation. The downside of the increased import demand and the current commodity boom lead to a precise rise in India's food import. However, it is clear that India's agricultural sector made huge paces in developing its prospect.

But still it is a bare fact that 800 million people in the developing world currently face food insecurity, and the challenges of meeting their food and nutritional needs are likely to increase in the years ahead and this forms the base of our study.

Food and Nutritional Security: Still an Illusion

Millennium Development Goal set the target of "Halving hunger by 2015." Sadly, the recent statistics for India shows a very gloomy picture. According to statistics, India has the largest number of undernourished people in the world and this is in spite of the fact that it has made substantial progress in health determinants over the past decades, and worldwide it ranks second in farm output. The causes of existing food insecurity can be better viewed under three concepts, namely, the 'traditional concept', which includes unavailability of food and poor purchasing capacity; 'socio-demographic concept' which includes illiteracy, unemployment, overcrowding, poor environmental conditions and gender bias; and 'politico-developmental concept' comprising lack of intersectoral coordination and political will, poorly monitored nutritional programmes and inadequate public food distribution system.

According to the 1996 World Food Summit, food security exists "when every person has physical and economic access to healthy and nutritious food at all times in sufficient quantity to cover the needs of their daily ration and food preferences, in order to live a healthy and active life." The nutritional dimension is an integral part of the food security. In its simplest form, food security means that all people have enough to eat at all times to be healthy and active, and that people do not have to fear that the situation will change in the future.

Food security can be achieved based on the three fundamental pillars. The first is food availability, the second food access – economic and physical, and the third food utilization, ensuring that the nutritional outcomes are

adequate for every individual in the household. In the Indian context, these three pillars of food security are to be taken care of immediately to get rid of this suffocating situation.

Homestead Farming as a Medication

Whether they are known as home, mixed, backyard, kitchen, farmyard, compound or homestead gardens, family food production systems are found in most of the countries worldwide. They may be the oldest production system known and their very existence is the proof of their intrinsic economic and nutritional merit. Traditional tropical gardens typically exhibit a wide diversity of perennial and semi-perennial crops, trees and shrubs, well adapted to local microclimates and maintained with a minimum of purchased inputs (Figure 1). Studies on traditional mixed gardens emphasized their ecologically sound and regenerative characteristics, by which they "re-create natural forest conditions" and minimize the need for crop management (UNICEF, 1982).

The assertive role of home gardening in family nutrition and household welfare must be assessed on the context of wider farming system and household economy. Usually, the functions and output of the home garden complement field agriculture. Whereas field crops provide the bulk of energy needed by the household, the garden supplements the diet with vitamin-rich vegetables and fruits, energy-rich vegetable staples, animal sources of protein and herbs and condiments.

Table 1

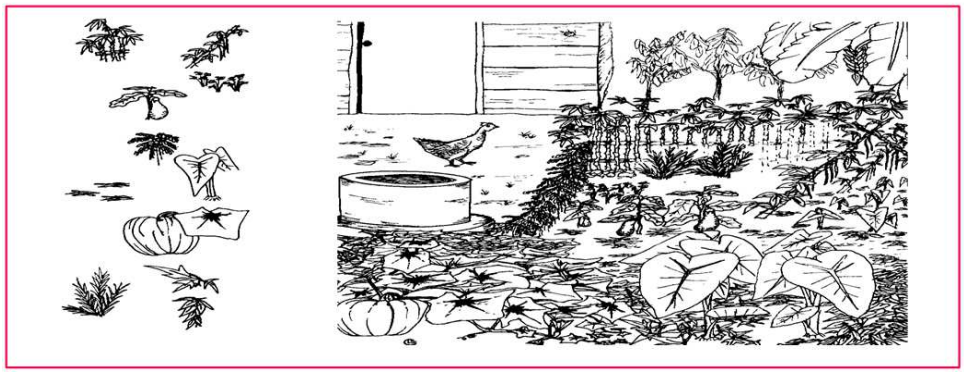

Figure1: Picture of a Copybook Home Garden

Different species of plants and animals used in a home garden are as follows:

Advocates of gardening cite an example that home gardening can be a sustainable strategy for improving food security and income, when gardens are well adapted to local agronomic and resource conditions, cultural traditions and preferences (Midmore, Niñez and Venkataraman, 1991; IIRR, 1991). This type of gardening is accessible to the poorest people since it involves low-cost, low-risk technology and may adapt to hostile environment (e.g. dry land gardens, flooding gardens). Landless households also benefit from simple hydroponics, container gardening and community or school gardening.

Contribution of Home Garden to Food and Nutritional Security

On a daily basis, home gardening contributes to household food security by providing direct access to food that can be harvested, prepared and fed to family members. Even very poor, landless or near landless people practise gardening on small patches of homestead land, vacant lots, roadsides or edges of a field, or in containers. Gardening may be done with practically no expensive resources, using locally available planting materials, green manures, "live" fencing and domestic methods of pest control. Thus, home gardening at some level is a production system that the poor can easily enter.

Gardening provides a diversity of fresh foods that improves the quantity and quality of nutrients available for the family. Households with gardens typically obtain more than 50% of their supply of vegetables and fruits (including such secondary staples as plantains, cassava, taro and sweet potato), medicinal plants and herbs; those households having garden systems that include animal raising also obtain their primary and often only source of animal proteins (Soleri, Cleveland and Frankenberger, 1991; Marsh and Talukder, 1994; UNDP, 1996). Very small mixed vegetable gardens provide a significant percentage of the recommended dietary allowance for protein (10 to 20 percent), iron (20 percent), calcium (20 percent), vitamin A (80 percent) and vitamin C (100 percent) (Marsh and Talukder, 1994; AVRDC, 1983–1989).

Homestead production is also a critical source of supplementary income for poor rural and urban households around the world. The combined value of garden production, including sale of surplus vegetable produce and animal products combined with savings in food and medical Expenses, varies seasonally but constitutes a significant proportion of the total income (upwards of 20 percent) for many households. The garden may become the principal source of household

food and income during the periods of stress, e.g. the pre harvest lean season, harvest failure, prolonged unemployment, health or other disabilities suffered by family members or agricultural and economic disruption caused by war. For instance, after the civil war in Kampala, Uganda, urban agriculture substantially fed the city with non-cereal foods (UNDP, 1996). Also, in the 1990s, residents in Baghdad, Iraq and Sarajevo, Bosnia and Herzegovina relied on gardening to provide for many of their nutritional needs (UNDP, 1996).

The Role of Women and Children in Home Garden

Although it is often assumed that women are the principal home gardeners, the role of women in gardening varies by region and culture. Gardening is typically a family activity involving women, men, children and the elderly, with some tasks carried out separately. Men generally participate in the heavier tasks (bed establishment, fence building, well digging and tree harvesting), while women manage the day-to-day maintenance tasks. Women and children typically care of small live stocks. The elderly have a special role in passing down traditional gardening knowledge to the next generations, especially their understanding of the care and use of native plants.

Accordingly, it is significant to involve the whole family in promoting gardening projects. This is especially true in cultures where women are not generally exposed to outsiders and will hesitate to get involved in new activities without the approval of their husbands. In addition, women may have limited time available for gardening, especially when they are employed in their own farm or off-farm field productions as well as time-consuming domestic tasks such as gathering fuel and water and preparing food.

Marketing of garden produce can be a significant source of independent income for women. This aspect is particularly critical in female-headed households, where men migrate for long periods or in cultures where women traditionally feed the family through their own work. In instances where women are not allowed to go to the market for selling garden food, garden food can be sold from the home garden itself or male children can take it to the markets to sell home garden products.

Objectives

The objectives of our study are as follows:

- To draw attention towards the food as well as nutritional insecurity of India, especially in West Bengal.
- To encourage homestead farming to as a way out of the existing misery.
- To gain knowledge about the situation prevailing within agricultural community for a Home Garden.
- To make them aware of the prospects of home garden and its relation with their food security.
- To find out different aspects for maintaining home garden with the help of the collected data.
- To identify the constraints and find some solutions for the betterment of this venture.

Research Methodology

The chapter describes the research adopted for the purpose of the present study. However, the entire discussion is based on the following topics:

- Area sampling
- Respondent sampling
- Data collection
- Statistical tools used

Area Sampling

Selection of District

Nadia district, an ideal representative of new alluvial zone, was intentionally selected. It has a prosperous profile of diverse farming, especially vegetables. These apparently put forth the influence on homestead garden.

Selection of Block

Block Haringhata was selected consciously, keeping in view the large proportion of migrated people having small holding of lands. This along with the general attributes of new alluvial zone adds a further interesting socio-economic

dimension to homestead garden study.

Selection of Village

The village Chandirampur was selected as it was easily accessible to the researcher and understood with all its socio-cultural facets and a large population base.

Respondent Sampling

Total enumeration technique of sampling was followed. All the inhabitants of Village Chandirampur were chosen for the study. Out of 364 households, 141 households were extensively studied (Those households were observed to be true to sense home gardening by Hoogerbrugge and Fresco, 1993).

Data Collection

The schedule is prepared on the basis of previous work, researchers' experience and expert consultancy. Before starting final data collection, schedules were pre-tested for elimination, addition and alteration with non-sample respondents of the study area.

Pilot Study: Before conducting the actual study, a pilot study was conducted on non-sample respondents to understand the basic situational background of the respondents. This study helped in addition, alteration and elimination of some techniques and respondents per the need of study.

The parameters considered for the study were:

- Frequency of distribution of households by occupation
- Category of homestead garden on the basis of nature of returns and seasonal plants grown
- Source of seeds and plant materials
- Plants no longer found in homestead garden
- Labour use pattern in the households for different home garden activity
- Medicinal plants
- Distribution of surplus produce
- Principles maintained in homestead garden
- Attributes of an ideal garden
- Problems of homestead garden as mentioned by respondents

Statistical Tools Used

Here only two statistical tools have been used, these are frequency and percentage.

RESULTS AND DISCUSSIONS

The results of the study are presented in this chapter with the help of frequency and percentage analysis.

One hundred and thirty-two households were selected as respondents for this study, but only 141 households out

of 364 were taken as effective respondents, because they were sensed to be true to sense home gardens. The results were presented in terms of occupation, category of homestead garden, on the basis of nature of returns and seasonal plants grown, source of seeds, crops no longer found in homestead garden, principles maintained, medicinal plants, labour use, decision-making, attributes of an ideal garden and problems.

Table 2: Frequency, Distribution of Households by Occupation

Occupation	Frequency	Percentage	Rank
Farmer	66	46.64	1
Labour	21	14.84	2
Business	18	12.72	3
Service	12	8.48	4
Service and farmer	9	6.36	5
Service and business	6	4.24	6
Business and farmer	6	4.24	7
Service, business and farmer	3	2.12	8

From Table 2 it is revealed that among the respondents, farmers comprise the highest percentage (46.64%) practicing homestead gardening. Mostly they are marginal and small farmers. They cultivate different crops in their fields for commercial purpose. Simultaneously they cultivate different crops like fruits, vegetables, woody trees in different seasons of the year in their homestead gardens. In homestead gardens, the family members get involved in the gardening work and obtain added income by marketing or save money by not buying vegetables, etc., from outside. Besides it helps to maintain the nutritional status of their family. The lowest percentage (2.12%) is found in case of service, business and farmer category, because they are very busy in their profession and they have less leisure time to spend in homestead gardens. But female members of the families in this category have time to maintain homestead gardens, comprising 2.12%.

Table 3: Nature of Returns and Seasonal Plant Growth

Category	Frequency	Percentage	Rank
Plants grown in winter season	75	53.19	1
Plants irregularly grown	39	27.65	2
Plants grown round the year	27	19.14	3

From table 3 it is evident that in majority of the gardens (53.19%)winter plants are grown. As crops are grown once in a year, different aspects of cultivation like fertilizer management, irrigation, plant protection measures are followed regularly. Very less households grow plants round the year because they are principally engaged in service or get fully involved in home gardening. Thirteen-nine homestead gardens could be categorized under plants grown irregularly; these are characterized by dispersed activities of the home gardeners throughout the year rather than intensive care due to involvement in other activities.

Table 4: Source of Seeds and Planting Materials

Source(n = 318)	Frequency	Percentage	Rank
Own	99	31.13	1
Haat	96	30.1	2
Neighbour	66	20.75	3
Nursery	52	13.20	4
Government	15	4.71	5

Table 4 outlines the sources of seeds and planting material availed and used by the home gardeners in a comprehensive manner. According to Table 4, the majority of the homestead gardeners use their own seeds (31.13%) or collect seeds and planting materials from haat (30.1%). In fact the female members of their family store the seeds from previous harvest and wait for favourable situation for further planting. Some homestead gardeners collect seeds and planting materials from neighboured (20.75%) and nursery (13.20%). Collection of seeds from the neighbourhood is the consequence of informal social relationship and mutual understanding. Mostly flowers and some fruit plants (where quality of planting material is a concern) are collected from nursery. Forest plants and fruit plants are mostly got from the panchayat at a low price, though it accounts for a small percentage (4.71%).

Table 5: Labour Use Pattern in Home Garden

Activity	Male	Female	Male and Female	Male, Female and Child	Total
Soil preparation	63(44.68%)	9(6.38%)	69(48.93%)	-	141
Sowing	9(6.38%)	36(25.53%)	96(68.08%)	-	141
Irrigation	-	12(8.51%)	93(65.95%)	36(25.53%)	141
Pest and disease management	39(27.65%)	33(23.40%)	69(48.93%)	-	141
Harvesting	-	-	39(27.65%)	102(72.34%)	141
Marketing	24(17.02%)	-	-	-	141

Homestead garden is a successful arrangement of collective action by all the family members. So, proper supervision, execution and engagement of all family members for making a homestead garden successful are very much decisive factors. The result shows it is male members in 63 cases, both male and female in 69 cases and female members in only 9 cases engaged in soil preparation. Soil preparation is generally thought to be laborious job involving physical activity that is why perhaps females either stay away or assist male members in soil preparation.

In case of sowing, male members were involved in only 3 cases, both male and female in 96 cases and only female members in 36. So this result shows that female members are mostly engaged in sowing activity. In the study area, respondents did not discriminate sowing on a gender basis. Still female members engaged in sowing was more than the male members due to the reason that they mostly stored the seeds and made decisions regarding the choice of crops.

In case of irrigation, male and female in 93 cases and in 36 cases of male, female and child together are involved. Homestead gardens plants require irrigation when required. Female and child members of the family have always been present at home and are closely observing the irrigation needs of the garden plants properly.

The labour use patterns in disease and pest control are mainly done by female in vegetable and male in fruits and woody plants. Here male members are in 39 cases, both male and female in 69 cases and female only in 33 cases. In case of vegetables, pest and disease control are done by female with the application of their traditional knowledge of

plant protection.

But harvesting is done by male, female and child members in 102 cases, both male and female in 39 cases. Harvesting is a regular activity per the requirements of the family and, hence, is carried out by all the family members.

Interestingly 24 of 141 households are engaged in marketing. As marketing mostly requires travelling to public places (Market, Haat), it is natural that female members will often abstain from the job.

Table 6: Medicinal Plants Found In Homestead Gardens

Medicinal Plants	Frequency	Percentage
Tulsi (*Ocimum tenuiflorum*)	93	38.75
Nayantara (*Catharanthus roseus*)	27	11.25
Marigold (*Calendula officalis*)	39	16.25
Patharkuchi (*Bryophyllum pinnatum*)	9	3.75
Neem (*Azadirachta indica*)	24	10.00
Pudina (*Mentha arvensis*)	6	2.50
Kalmegh (*Andrographis paniculata*)	12	5.00
Basak (*Justicia adhatoda*)	6	2.50
Ban Amla (*Phyllanthus emblica*)	6	2.50
Ban Tulsi (*Croton bonplandianum*)	3	1.25

Homestead garden can be looked as a place for maintaining medicinal plants due to its significance in our day-to-day life; 87.32% house hold grow medicinal plants in their homestead gardens. They are mainly used for family treatments against different diseases like cough, dysentery, skin diseases, haemorrhage, diarrhea, etc. Generally medicinal plants like tulsi, nayantara, patharkuchi, kalmegh, basak, neem, etc., were found to be cultivated in homestead gardens in the research area. From table 6, it has been found that among the different medicinal plants cultivated in the area, tulsi occupies the highest proportion. Ninety-three of the respondents (38.75%) cultivate tulsi in their homestead gardens due to its ritual value. Nayantara (11.25%) and marigold (16.25%) were grown for its antidiabetic and antihaemorrhagic features.

Table 7: Distribution of Surplus Produce

Distributed to	Frequency	Percentage	Rank
Neighbour	78	55.31	1
Market	24	17.02	2
Family consumption	18	12.76	3
Relatives	12	8.51	4
Neighbours, relatives and market	9	6.83	5

Table 7 demonstrates that the produce of the homestead gardens may be distributed either among the neighbours and relatives or to both of them in order to maintain a good relationship. Some produces are sent to the local market so that it fetches additional income to the growers. Here 78 respondents distribute their homestead garden produce to the neighbours, which accounts for 55.31%, and 12 (8.51%) respondents distributed their produce among the relatives because they stay nearer to their houses, and only 24 (17.02%) respondents market their surplus produce after home consumption, 3 respondents are associated with the distribution of the produce to the neighbours, relatives and some portion of their produce was sent to the market. Eighteen respondents did not distribute their produce to their relatives, neighbours and market, because they use their produce for home consumption.

Table 8: Principles Maintained In Homestead Gardens

Principles	Frequency	Percentage	Rank
Not to plant banana in front of the house	18	17.10	1
Not to grow bamboo in homestead garden area	15	14.20z	2
Not to apply pesticide on garden plants	15	14.20	
Not to plant pine apple in the garden	15	14.20	
Not to plant shal in the homestead garden	12	11.4	3
Not to plant similar plants in similar places	12	11.4	
Not to plant palm and tamarind together	9	8.55	4
Not to allow the root system of pomegranate enter the house	9	8.55	

No. of households maintaining principles = 57
Total no. of principles maintained = 35

This table focuses on the principles maintained by the homestead garden owners which have tremendous effect on practicing and growing crops or plants in these gardens. Table 8 demonstrates that of the 141 effective respondents, 70 intends to maintain different principles and taboos related to homestead gardens. Because they have obtained these principles either from their ancestors or they note the roots of different problems while cultivating the crops year after year. For example, they do not grow banana in front of the house because of mosquito menaces and also avoid growing pineapple due to snake trouble. Only 15 respondents mentioned they do not grow bamboo due to its shading habit. Some avoid pomegranate tree near their house as its roots jeopardizes the walls.

N.B.

The results of the statistical tools used for all the tables are matched with our study and with an another study conducted in 2003 by one of our alumnus Satyanarayan Roy at Chakdah of Nadia district during his MSc thesis on System analysis of homestead gardens in selected areas of West Bengal, and we found that the results were quiet similar and satisfying.

Table 9: Attributes of an Ideal Homestead Garden

Attributes	Frequency	Percentage	Rank
Irrigation facility	114	21.96	1
Large area	69	13.29	2
Variation in plant species	51	9.82	3
Least shaded region	45	8.67	4
Fertile soil	45	8.67	
Clean and free from weed	42	8.09	5
More than one crop throughout the year	36	6.93	6
Good quality 1 lower plants	18	3.46	7
Supervision by all family members	18	3.46	
Variation in vegetables grown	18	3.46	
Least use of chemicals	12	2.31	8

This table demonstrates the farmer's insight on different criteria of an ideal garden, 21.96% respondents regarded irrigation facility as the most influential criteria for an ideal garden. It was, perhaps, some home gardeners did not have source of irrigation within the immediate proximity, some did not have enough labour to fetch water from distance and the

availability of water sources was irregular due to seasonal variations. Large area (13.29%), variation in plant species (9.82%), least shaded region (8.67%), fertile soil (8.67%), clean and weed-free status (8.09%) are also key criteria as distinguished by the respondents. Only 6.93% of the respondents mentioned more than one crop should be grown throughout the year for getting different produce. Engaging all the members of a family, good quality of flower plants, variation in cultivation of vegetables at homestead gardens were major criteria of an ideal home garden as remarked by them.

Table 10: Problems Faced By the Growers

Problems	Frequency	Percentage	Rank
Lack of irrigation	114	28.53	1
Destructive activity of monkey	90	22.53	2
Lack of time for supervision and care	45	11.26	3
Small area	39	9.76	4
Pest and disease infestation	39	9.76	5
Grazing of animals	33	8.25	6
Poor availability of good quality seeds	18	4.50	7
Theft	15	3.00	8
Shade	12	2.25	9

The table represents the different problems observed and mentioned by the respondents. Each problem is ranked on the basis of frequency as indicated by the respondents. Irrigation problems (28.53%) was ranked first, attributing to the non availability of water resource within the immediate proximity of most of the home gardens. Interestingly destructive activity of monkey was ranked second. The lack of time for supervision and care (11.26%), small area (9.76%), pest and disease infestation (9.76%), grazing of animals (8.25%), poor availability of good quality seeds (4.50%), theft (3%) and shade (2.25%) were serious problems of the respondents.

Constraints

The authors already found the prevailing pot holes in the context of home garden in the areas listed in table 10. Nevertheless, promoting gardening as a nutrition or community development strategy is controversial by strong advocates and opponents. Critics point to poor project design, management and monitoring, unrealized expectations and lack of sustainability: “the frequent failure of garden projects to achieve significant, cost-effective, sustained and positive changes is due in large part to the familiar litany of development project errors. Foremost among them is a lack of understanding of and adaptation to local conditions, resulting in extension agents, demonstration gardens, planting materials and garden establishment and management strategies unsuited for local environmental, social and resource supply conditions” (Brownrigg, 1985).

Some studies indicate that gardening is not cost-effective as a nutrition intervention as compared with fortification, supplementation and targeted subsidies (Popkin et al., 1980; Brownrigg, 1985). Another common criticism is that gardening is feasible only for households with access to land, water and technical assistance, leaving out many of the food insecurities.

Further, opponents claim that homestead production is often encompassed as a panacea for food insecurity, when in fact it has proved unreliable as a steady source of food and income for poor households.

Suggestions

Having studied the existing situation and status of homestead garden, the authors recommend some ways out.

- Copybook Nutritional Garden is in no way applicable to homestead garden, considering the field reality, as the homestead is utilized for rearing cattle, poultry and goat, child recreation, post-harvest operation. So, the homestead should be used in accordance with the above said outlooks keeping in view the trade-off of different components.
- Crop selection should be done on the basis of farmers' and household preference.
- Selection of different components of farming should be done on the basis of easy maintainability, less costly compatibility with the limited resource access.
- Management should eliminate domestic animals, birds and other pest attack
- Farming should be compatible with sunlight shades, semi shades and optimal use of the sunlight by adapting multitier system
- It should be built on domestic knowledge. Understanding the traditional gardening system is critical. Even in communities where gardening is not traditionally practiced , exploration of nearby communities that do gardening can give a more thorough understanding of the constraints of gardening in the past. If these constraints – whether climatic, economic or cultural – are overpowering, they may signal the need to abandon the idea of a household garden promotion project.
- Work should be done intensively in areas where households have some experience with home gardening to build on traditional methods to enhance household food security.
- Recommend the use of a group approach and village leaders for technical training.
- Integrate nutritional awareness and education into garden planning.
- Involve whole family members in garden planning and management and especially involve women in the distribution of garden harvests and income generation.
- Be flexible with respect to the choice of species and cropping patterns, encouraging diversity and use of locally adapted varieties.
- Encourage reliance on local materials for soil, water and pest management and on household or community seed production; minimize "giveaways".
- Monitor the project for regular feedback and fine-tuning of training and other needs.
- Having studied the selected areas and consulted with SAU experts and scientists, we understood some rationale behind the selection of crops depending on various factors. Along with the seasons our views are represented as follows:

Table 11: Crops for a Home Garden

	Crops	Period
1	a. Cauliflower (early) intercropped with palak	a. July–October
	b. Potato	b. November–March
	c. Amaranthus	c. April–June
2	a. Cabbage (late) intercropped with lettuce	a. October–February
	b. Okra	b. March–June
	c. Radish	c. July–September
3	a. Brinjal (winter) with palak as intercrop	a. July–March
	b. Amaranthus	b. April–June
4	a. Onion	a. November–May
	b. Okra	b. June–October
5	a. Cauliflower (late) intercropped with knolkhol	a. October–February
	b. Brinjal (summer) intercropped with red amaranthus	b. March–September
6	a. Cabbage (early) intercropped with knolkhol	a. September–December
	b. Bitter gourd	b. January–May
7	a. Tomato	a. August–December
	b. Onion	b. January–June
8	a. Potato (early)	a. September–December
	b. Snap melon (kakur)	b. January–May
	c. Cowpea (green manure)	c. June–August

CONCLUSIONS

Furthermore, home gardening is one of the possible interventions for improving food security among the poor, and it should be considered in the context of a broader national food security strategy. Indeed, the complex synergies of food availability, access, consumption and nutritional status with poverty, health, mental ability, productivity and economic development demand an integrated approach to solving food insecurity in the long-term. Home gardening has a special role in this strategy, in providing direct access to food through self-reliance rather than depending on externally supported programmes such as food for work, targeted subsidies and supplementation and fortification schemes, none of these can be relied on for sustained support.

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