



Photo: Helen Keller International

Homestead food production

Household garden in Bangladesh

A strategy for reducing micronutrient malnutrition and poverty in South Asia

Aminuzzaman Talukder

Improving nutritional status, including micronutrient status, can lead to increased productivity, increased child survival and growth and reduced maternal morbidity and mortality. Home gardening activities are centered on women and it can also increase the income of women, which may result in the better use of household resources and improved caring practices and empowerment. Thus, the simultaneous impact of home gardening programmes in terms of giving women a voice and promoting their full participation in domestic life can make an important contribution to the overall development of communities.

Micronutrient deficiency disorders are serious public health problems in South Asian countries with long term consequences. Globally, more than 250 million children in developing countries are at risk of vitamin A deficiency; more than half of these children live in South Asia. Iron deficiency affects more than 2000 million women and children and more than 1500 million people in the world are at risk of iodine deficiency. Micronutrient malnutrition is a serious public health problem in Bangladesh.

Inadequate dietary intake is an immediate cause of malnutrition and thus it seems logical that food and agriculture activities could contribute to improvements in nutrition and micronutrient status. Global availability of cereals is adequate, but substantial proportion of the population still subsists on inadequate caloric intake and child under nutrition still persists in many countries, suggesting that distribution of food is inadequate. Global availability of non

cereal foods, such as animal and horticulture foods is well below global requirement. Consequently, micronutrient deficiencies, which result mainly from inadequate intake of micronutrient rich foods, particularly animal foods, are prevalent in most parts of South Asia. Food based strategies such as home gardening, small animal husbandry, poultry and social marketing of foods, lead to better food production, food consumption, income generation and overall food security.

Several interventions are currently being implemented in Bangladesh, Nepal and other countries in South Asia to control micronutrient deficiencies. Several strategies are necessary for addressing the problem of malnutrition. One such strategy is food-based programmes to improve access and availability of plant and animal foods at the household level. There is growing evidence that food-based strategies, including homestead food production, have an impact on vitamin A deficiency and other micronutrient deficiencies. Such strategies also increase household food security. By increasing the variety of fruits and vegetables available for consumption and additional eggs, meat, liver, fish or milk, the diversity of the diet is increased; this has been shown to have positive impacts on nutritional status.

Development of Homestead Food Production Programme in Asia- Pacific

Initial pilot home garden programme

Helen Keller International (HKI) initiated first a pilot programme in 1990 among 1000 households to explore the existing gardening practices, feasibility of promoting low cost vegetable gardens combined with nutrition education and to identify constraints that might prevent increased production and consumption of vitamin A rich foods among poor households.

Findings from the pilot programme suggested that with technical assistance and support, households in Bangladesh could be encouraged to produce fruits and vegetables throughout the year. A mid-term evaluation in 1992 confirmed that the combined home gardening, nutrition education and gender aspects of the programme had a very positive impact on vegetable consumption among women and young children. Other findings suggested that increasing the varieties of vegetables in the garden was associated with increased vegetable and fruit intake.

Scaling up

In 1993, Helen Keller International began a national expansion of this pilot programme working in collaboration with local nongovernmental organizations (NGOs) and government organizations (GOs) across Bangladesh. The objectives of the

There is growing evidence that food-based strategies, including homestead food production, have an impact on vitamin A deficiency and other micronutrient deficiencies.



Photo: Helen Keller International

Production village model farm

project were to increase the number of households which sustainably produce micronutrient rich vegetables and fruits round the year, increase the number of households producing more varieties (at least 6) of vegetables, and increase the frequency of consumption of vitamin A rich food by the most vulnerable groups. HKI selects its partners from local GO and NGO partners, who have ongoing development programmes, have community linkages, work with women's groups, and have strong management capability. HKI provides training and technical assistance to the agriculturists and extension agents of the partner NGOs. Based on the experience in Bangladesh, HKI started the same programme in Nepal in 1996, in Cambodia in 1998, and in the Philippines in 2004.

Integration of animal husbandry with home garden

Recent findings suggested that the bioavailability of vitamin A from fruits and vegetables is much lower than what has been assumed. Fruits and vegetables, therefore, play a smaller role in combating vitamin A deficiency. In order to maximize the contribution of homestead food production to combat vitamin A and other micronutrient deficiencies, it is very important to increase availability and consumption of some animal foods by keeping small animals, poultry and/or fish. HKI has further expanded the home gardening programme to include other homestead food production schemes, such as poultry raising and egg production on end of 2001 in three countries, Bangladesh, Cambodia and Nepal.

Results

Based on the existing practices, production and diversification, gardens are classified in three different categories, (a) *Traditional*: scattered, seasonal production and only growing gourd type



Photo: Helen Keller International

Woman gardener in Bangladesh

vegetables, (b) *Improved*: seasonal vegetables grown in addition to gourd types and (c) *Developed*: productive throughout the year, vegetables in addition to gourd types, on fixed land.

Changes in gardening practices were noted. There was only one household without a garden at the first round of monitoring and that by the second round of monitoring at least one-third had upgraded their gardening practices from traditional to improved or improved to developed.

The programme has increased the production and consumption of fruits, vegetables, and egg in the working areas. The production and number of varieties being produced is highest among households who practiced developed gardening. Children in households with developed gardens consumed vitamin A rich foods, such as green leafy vegetables and yellow fruits, more frequently than did children in households without a garden or with a traditional garden. The number of varieties and vegetable production was three times higher in developed gardens than in traditional gardens and children's frequency of consumption was 1.6 times higher. In Nepal, on an average, mothers and children ate 2 eggs per person per week.

Impact and upscaling

Homestead food production has been shown to be an important way to improve the intake of micro nutrient rich foods, particularly for poor households in the South Asian Region. The pilot programme was initiated to identify ways to improve the existing homestead gardening practices. Following the development of the home gardening model, the programme was scaled up by forming partnerships with local non-government organizations. From 1993 to the present, the programme has been expanded. To date HKI has worked with more than 100 NGO partners and reached more than 900,000 households in Bangladesh, Nepal and Cambodia. Regular monitoring has demonstrated that the programme successfully increased the production and consumption of vitamin A rich foods in the target households.

Recent evaluation has shown that home gardening has improved the economic status of its beneficiaries by increasing the number of households that generate garden income and the income generated from gardening activities. On an average, 50 percent of the households earned income approximately US\$ 7 by selling fruits and vegetables and US\$ 4.5 from poultry and eggs in the last two months. This income is largely spent on food, productive assets and education, thus contributing directly and indirectly to increased accessibility of food. In addition to the direct income contribution, the project has also increased the quantity of vegetables and fruits from homestead gardens consumed by household beneficiaries, which is equivalent to US\$ 31 for three months.

Homestead gardening programme can be credited not only with improving the availability of food to households but also their ability to access quality foods. Therefore, their overall food security and more importantly, the benefits gained by households in participating in homestead gardening programme were sustained after withdrawal of the three-year long support.

Conclusion

Homestead food production has been shown to be an important way to improve the intake of vitamin A and other micronutrient rich food, particularly for poor households in countries like Bangladesh, Nepal and Cambodia. The ways through which home gardening and poultry production increases consumption of vitamin A rich foods and contributes to improving vitamin A status are several. Food availability including the availability of animal foods, and food security are major components of poverty alleviation.

Homestead food production increases the availability of plant foods, animal foods as well as their round the year consumption. Both the increased availability as well as the increased choice of foods increases vegetable and animal foods consumption. In addition, homestead food production provides additional income for poor households, which is mainly used for purchasing foods of higher nutritional quality including animal products. The participation in the home gardening programme together with the income that the activity generates has been found to empower women. Their participation in decision-making increased and that, amongst others, had a positive impact on food preparation practices and care seeking behavior.

Aminuzzaman Talukder

Country Director,
Nepal and Asia-Pacific Regional Agriculture Advisor,
Helen Keller International, Nepal

This is an edited version of the article titled "Homestead food production-a strategy for reducing micronutrient malnutrition and poverty in South Asia" published in Nutrition Security in South Asia, Symposium organised by Nutrition Foundation of India with support of Government of India and United States Department of Agriculture, March 7-9, 2005.