

# Home Garden for Improved Nutrition and Household Income of Resource Poor Families



## INTRODUCTION

Home garden, *Ghar Bagaincha* in Nepali, refers to a land use system around homestead, where several species of plants and animals are managed by the family members with primary intention of household consumption. In addition to vegetables and fruits, components in a home garden can be quite diverse which includes fish, poultry, mushroom, honey bees, fodder, ornamental plants and medicinal plants. Selling surplus home garden produces helps farmers to generate income too. Home gardens hold relatively higher diversity than other farming lands. The management technology is basically low-cost oriented which maximizes the utilization of the available local resources. The key unifying principle is that the management of these components fulfill the family's nutritional and other socio-cultural needs round the year. Though there is great variation in size and composition among home gardens, most of those are vegetable based.

The term "home garden" is often considered as synonymous to 'kitchen garden' in Nepal but as an approach they differ in terms of function, size, diversity, composition and other features. Kitchen garden would simply be considered as merely a component of home garden as it deals with vegetables only. Home garden

is more conscious about diversity in species, nutritional services and its continuity throughout the months, integration of livestock and other components, sustainable management of resources, and local seeds and varieties for self-sustainability.

After a long term research over home garden approach, LI-BIRD concluded that home garden helps to reach out to resource poor and disadvantaged groups for their improved family nutrition through dietary diversity. The sales of small livestock, surplus vegetables and fruits including mushroom contribute to family income and helps household resilience of poor and vulnerable farming families.

The project is funded by European Union. The project is jointly implemented by DCA, MDO, EDC, LI-BIRD and FIAN Nepal. 'Sustainable Agricultural Development for Smallholder and Marginalized Farmers in Far Western Hills of Nepal (SADP)' is being implement in Gaguda, Satphari and Dhirkamandu VDCs of Doti District, and Bardadevi, Kalika and Darna VDCs of Achham District for the period of three years (2014 to 2017). One of the objectives of this project is to increase and improve home gardens of the resource poor farming families for improved nutrition and household income.

## PROCESS

To strengthen home garden management, SADP adopted the following steps:

### 1. Training of Trainers (TOT) to leader farmers

As the first step to start home garden intervention, 40 leader farmers were selected from around 6 VDCs of two districts. They were provided with 3 days TOT on integrated home garden. The training module covered importance of nutrition, introduction and scope of improved home garden management, practical ways to improve crop/species management, soil and water management of home garden, etc. After one year, the farmers were again provided a two days refresher training to deepen their knowledge and motivate them to share the learnings to neighbours.

### 2. Village level trainings by trained leader farmers

Total 96 one-day home garden orientations were organized at village level, by the trained leader farmers. 40 and 56 home garden orientations in Doti and Achham respectively helped 2,497 farmers to start improving their home garden which included 1,697 (68%) women.

### 3. Vegetable composite seed kit and fruit saplings

As a third step, SADP helped farmers with composite vegetable seed kits for two years that included 9 types of vegetables seed each time. The packet was composed of local and improved seeds of nutritious vegetables as the aim of home garden intervention was to improve family nutrition in a sustainable manner. Similarly, 3 fruit saplings, on average, were distributed to all those households to help them add diversity in home garden. In 2014 and 2015, more than 2,500 households grew and consumed diverse home garden crops.

### 4. Mushroom cultivation training

As the concept of integrated home garden promotes addition of other enterprises like poultry, small livestock, mushroom and fish, the project also tried

to demonstrate the benefit of integrating mushroom in home garden. Around 300 households were provided training on mushroom production and also supported with spawn. More than 80 percent trainees successfully grew mushrooms, and consumed and sold the surplus too.

### 5. Continuous advisory support

SADP staff always helped farmers by suggesting solutions when there was a technical problems like cultivation techniques and disease problem. Besides, SADP mobilized Female Community Health Volunteers to help farmers, especially women, to reinforce the knowledge about the importance of diverse diet in nutrition and human health. Those volunteers visited women and farmers groups focusing on households where pregnant and lactating mothers or children of age under five existed.

## RESULTS

Altogether 95% households associated with SADP have improved their home garden management. 2,450 households in six VDCs of Achham and Doti now manage home gardens of average size 250 and 300 sq m respectively. Now 60 households have vegetable sufficiency for at least 9 months in project implemented VDCs. 50% households in Achham and 70% households in Doti have successfully added more than 6 types of vegetables and at least 2 types of fruits in their home gardens. On an average, farming families in Achham and Doti maintain 12 and 13 different species of fruits and vegetables in their home gardens (Table 1).



**Table 1.** Changed status of home gardens

District	Total beneficiary HHs	No of HHs that have increased at least 6 types of vegetables and 2 fruit species	Average diversity Baseline		Average diversity-Endline	
			Vegetable	Fruit	Vegetable	Fruit
Achham	1495	797 (53%)	6	1	9	3
Doti	1120	789 (70%)	5	1	10	3

In addition to fruits and vegetables, there are other components integrated in home garden which complement the nutritional supply as well as income. Mostly farmers have integrated cattle and buffalo, goat and chicken in their home gardens (Table 2) with their own effort. Besides, with project support, some families have started producing mushroom which is definitely a good source of protein to the family and also provides opportunity to have immediate income. By selling surplus home garden produces, 23 percent of the total project households were able to earn at least Rs.5,000 in year 2015-16. Overall, the average annual income from home garden vegetable sell is Rs.6,397 per hh.

**Table 2.** Integrated components of home garden

District	Total HH	Cattle and buffalo	Goat	Chicken	Mushroom
Doti	1120	915 (82%)	806 (72%)	532 (47%)	77 (7%)
Achham	1495	700 (47%)	782 (52%)	455 (30%)	170 (11%)

Looking at the current species composition, home garden is serving important micronutrients to the poor families in Doti and Achham who could not afford to purchase such diverse vegetables and fruits. All the vegetables which have become common in SADP implemented VDCs, are good source of important nutrients like iron, zinc and Vit A (Table 3).

**Table 3.** Mostly available vegetables in SADP implemented VDCs and their nutritional benefits

SN	Vegetable	Consuming families (% hhs) [N=2500]	Important nutrients	Major health benefits
1	Bitter gourd	75	Vitamin A, C, B vitamins including folate and minerals (Fe, P, Mg, K, Zn)	Helps to lower blood sugar levels helpful during pregnancy, increases immunity, relieving indigestion and constipation
2	Pumpkin	74	Vit A, C, E and B vitamins, and minerals (Fe, Mg, K, P, Cu)	Increases immunity, good for visual sight, helps to minimize age-related macular disease in elderly
3	Leaf Mustard	57	Vit A, K, folate and minerals mainly Ca, and Fe	Highly beneficial during pregnancy, increases immunity against number of diseases, helps to minimize Fe deficiency anemia, eye diseases and prevents constipation
4	Brinjal	57	Vitamin K, B1, B6, Folate and various minerals	Helps in blood circulation and internal metabolism, controls high blood cholesterol, increases immunity against various diseases

5	Tomato	56	Rich in different types of Vitamins, Minerals and antioxidants	Good for heart, helps to fight diseases including cancer, makes skin soft and healthy
6	Cauliflower	56	Vitamin C, K, B vitamins, protein and various minerals	Increases immunity against cancers and other diseases, maintains internal metabolism and digestion
7	Bean	58	Protein, Vitamin A, C, Folate and minerals especially Fe	Promotes immunity, checks Fe deficiency anemia, good for pregnant women, good for eyes, blood and stomach
8	Radish	57	Vitamin B2, B6, Folate and C, and minerals-Fe and Ca	Increases immunity and stimulates digestion
9	Okra	53	Dietary fiber, protein, vitamin A, C, K, Folate and other B vitamins, and minerals: Ca and P and K	Improves digestion and body immunity against diseases, helpful to pregnant mothers
10	Cucumber	52	Vitamin A, C, K, and minerals especially K	Increases immunity, improves digestion and blood circulation good for bone and brain
11	Snake gourd	51	Various vitamins, and minerals especially Fe, Ca	Enhances digestion, helps internal metabolism and blood circulation, helpful to diabetics
12	Cabbage	52	Dietary fiber, Vit C, K, B vitamins and minerals: Ca, Fe, Mg, P, K	Immunity against diseases including cancers, helps in blood formation and circulation, and digestion
13	Onion	50	Vitamin A, C, folate and minerals	Helps to fight common cold to heart diseases, cancer, diabetes and skin problems like inflammation, blisters and boils

Symbols used for minerals: Fe-Iron, Ca-Calcium, Zn-Zink, Mg-Magnesium, P-Phosphorous, K-Potassium

## CONCLUSION

Home garden occupies only five percent of the total cultivable land but still is an integral part of Nepalese agriculture. Species richness of home garden and opportunity of integrating other several components into it makes home garden capable to offer number of options to the family to help them improve family nutrition and household income. Given the small scale nature of the home garden intervention, it is indisputably appropriate for the land-poor and disadvantaged farmers, who cannot afford for large scale farming.

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