

NUTRITION BULLETIN

Improving household food security in Cambodia through integration of poultry production into existing home gardening programs

Results of the pilot project on household poultry production have revealed significant improvement on household food security; both for the production as well as the consumption of poultry products. In addition, Household Poultry Producers (HPP) have also generated additional income from selling surplus poultry and eggs produced. This additional income allows the household to acquire better quality foods, such as fish and other meat, and it also contributes to the improvement of the household socio-economic situation. It is recommended that this project be expanded to target more households who already participate in the homestead gardening project, so that the contribution of homestead food production on household food security can be maximized, thus improving nutritional status of the household members.

Background

Since 1998, Helen Keller International (HKI)/Cambodia has implemented a homestead food production and nutrition education program to improve micronutrient status among young Cambodian children and women through improved year-round availability and consumption of micronutrient-rich foods. This program demonstrated that with minimal technical support, households can be encouraged to produce varieties of vegetables and fruits throughout the year, which does not only have an impact on micronutrient deficiencies, but also improves household food security, empowers women, and contributes to poverty alleviation (see HKI/Cambodia Round Report 1, 2, 3, 4, 5 and 6).

However, recent findings suggested that the bioavailability of vitamin A from fruits and vegetables is much lower than what

has been previously assumed. Therefore, in order to maximize the contribution of homestead food production to combat vitamin A and other micronutrient deficiencies, it is important to increase the availability and consumption of animal foods by raising small animals, such as poultry and fish at the household level. HKI/Cambodia expanded the scope of its homestead gardening program to include poultry production activities as a pilot project, which has shown positive results in improving household poultry and egg production and consumption.

Objectives of Pilot Project

HKI/Cambodia initiated a pilot project in October 2001 to explore the feasibility of promoting low-cost poultry production and increasing consumption of animal products and to identify constraints that may prevent increased production and consumption.



of animal foods among households in rural areas.

This pilot project was conducted in collaboration with two of HKI's existing NGO partners who are currently implementing the homestead gardening program. These two NGOs were selected based on their interest and experience in this area: Partners for Development (PFD) in Kratie province and Women's Service Organization (WOSO) in Kompong Speu province. Two hundred households were randomly selected from those participating in the existing homestead gardening program. Women of reproductive age and preschool children were the primary targets for health education and for nutritional improvement.

Description of the Pilot Project

The pilot project was structured around the establishment of village-based poultry farms and subsequent individual household poultry farms. Village-based poultry farms are owned by village farmers and are run as a micro-enterprise. Under this approach, each established village model poultry farm (VMPF) supported 2-3 groups of 15-20 household poultry producers (HPPs). Thus, 30-50 HPPs received inputs, such as chicks, ducklings, training, and demonstration support from the VMPF. HKI staff provided training to NGO staff on poultry production and nutrition education. HKI staff also assisted NGO staff with training VMPF owners and HPPs. The NGO partners were responsible for conducting the training for VMPF owners and HPPs, carrying out regular field visits to VMPFs and HPPs and providing assistance for day-to-day activities. They were also responsible for organizing and

Table 1. Median numbers of eggs, and poultry produced, and income generated by VMPFs (n=6) during 1st round and 3rd round monitoring.

Poultry and Eggs Produced	1st Round (Nov 01-Feb 02)	3rd Round (July-Oct 02)
Eggs produced in last month	41 (0-300)	93 (24 -1,535)
Ducks produced and owned in last four months	193 (0-398)	152 (0-323)
Chickens produced and owned in last four months	27.5 (3-64)	71.5 (15-180)
Money earned from sale of poultry products in last four months	0 (0-75,000)	443,500 (15,000-2,825,000)

implementing a nutrition education component in conjunction with homestead food production activities.

Monitoring and Evaluation of the Pilot Project

A routine monitoring system was established to observe project progress. Every four months, data was collected from VMPFs and HPPs by the monitoring teams. The data presented here are monitoring data from the 1st round (Nov 01-Feb 02), which represents the first 4 months of activities, compared to those from the 3rd round (Jul-Oct 02), one year into the activities. All 6 VMPFs and 100 of the 200 HPPs were included in the monitoring. The 100 HPPs were randomly selected at each round of monitoring.

Results of Pilot Project

a. Village Model Poultry Farms (VMPF): Production and Income Generation

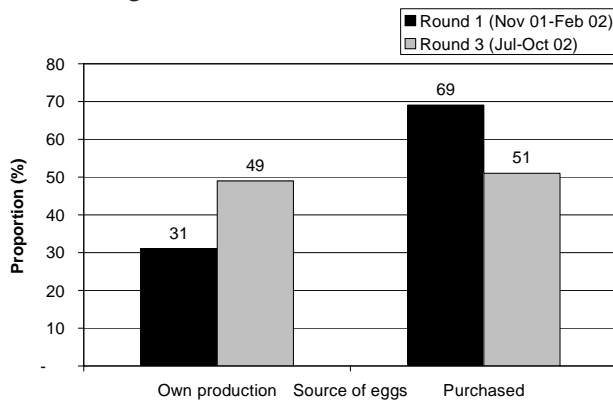
One of the main purposes of the VMPF is to produce inputs, such as quality chicks and ducklings for household poultry producers (HPPs). **Table 1** describes the median numbers of eggs and poultry produced, and income generated by VMPF owners.

Quantities of chickens and eggs produced during the 3rd round monitoring increased significantly compared to the 1st round monitoring. However, there is a reduced change in median number

Table 2. Median numbers of eggs produced, consumed, and income generated during the 1st and 3rd round monitoring by HPPs. Numbers in parentheses below the median figures denote maximum and minimum values (N=100)

	1 st Round (Nov 01-Feb 02)		3 rd Round (July-October 02)	
	N		N	
Eggs produced last month	76	10 (0-60)	100	19 (0-170)
Eggs consumed last week	100	3 (0-25)	81	6 (0-40)
Eggs consumed last week by mothers	62	1 (0-9)	71	1 (0-12)
Eggs consumed last week by children under 5 years old	62	2 (0-7)	71	2 (0-9)
Income earned last month	76	0 (0-90,000)	100	15,000 (0-105,000)

Figure 1. Sources of eggs for household consumption during the 1st and 3rd round monitoring.



of ducks produced between 1st and 3rd round. This is attributed to local preference to consume chicken meat instead of duck meat, therefore making it more difficult to attain a good selling price for adult ducks. In the 3rd round monitoring, the median income generated by VMPF owners over the last four months was 443,500 Reils (US\$ 114.00), which is a major increase compared to the 1st round.

*b. Household Poultry Producers (HPP):
Production, Consumption, and Income
Generation*

One of the objectives of the project is to increase household production and consumption of poultry products, particularly eggs. **Figure 1** shows the sources of eggs for household consumption during the 1st and 3rd round monitoring. After having participated in the project for a year, households depended less on the market for their daily procurement of eggs for consumption; more than 49% of the households cited “own production” as

their main source of eggs for family consumption compared with only 31% during the 1st round monitoring.

Table 2 shows that the production, consumption as well as income earned from selling poultry products increased between the 1st and 3rd round. The median numbers of eggs produced, rose from 10 during the 1st round to 19 during the 3rd round, while the median numbers of eggs consumed in the previous week by the household members was 3 during the 1st round and 6 during the 3rd round. However, the median numbers of eggs consumed by mothers and preschool aged children remained the same. A possible explanation for this could be that the distribution of eggs for consumption among the household members, particularly its importance for mothers and children, was not given special attention in the nutrition education conducted by NGOs. This needs to be changed. During the first year of project implementation, households were able to sell the surplus poultry produced with income rising from 0 Riels in the 1st round to 15,000 Riel in the 3rd round.

Figure 2 shows the principal use of money earned from the sale of poultry products during 3rd round. 78% of households had earned money from the poultry production activities. Most of this income was spent on food (65%) and other expenditures included productive activities (28%), medicine (5%) and education (1%).

Figure 3 indicates the types of food purchased with this income earned and it clearly shows that predominately other nutrient rich animal foods such as fish and pork/ beef are bought, counting for 63%.

Figure 2 Principal use of money earned from the sale of poultry products during the 3rd round monitoring (July –October 02). (N=78)

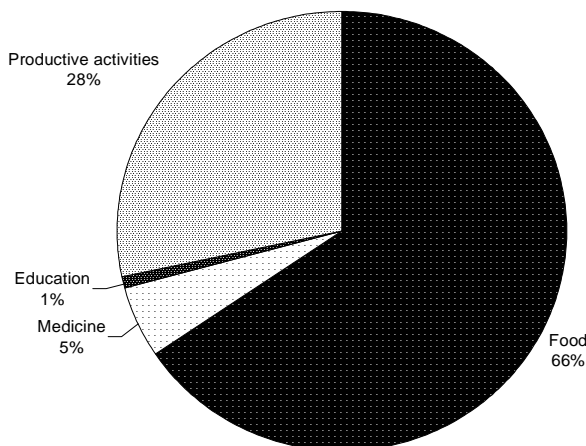
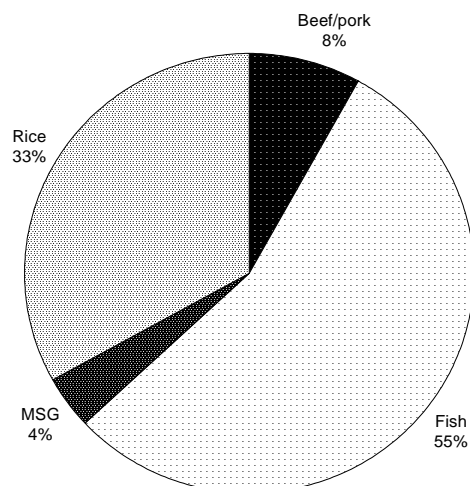


Figure 3 Type of foods purchased using income earned through sale of poultry products (N=51).



Conclusions

After 12 months of operation, VMPFs achieved high production and sale of poultry products. VMPFs were able to directly provide inputs to HPPs, signifying a self sustaining model for poultry production at the community level. This enabled households to produce their own poultry products for consumption and generating income.

HKI's pilot project also demonstrated that income earned from selling surplus poultry products plays an important role in improving household food security. Most of the income generated was used to purchase other micronutrient rich foods, particularly fish and meat, which should contribute to the improvement of overall nutritional status of household members.

However, despite the increase in the number of poultry and eggs produced and consumed by households, egg consumption by mothers and children had not yet changed. In the view of the specific nutritional needs of mothers and children, egg consumption by them needs to be increased.

Recommendations

1. This poultry production project should be expanded to target more households with children under five, in particular those households that already participate in the homestead gardening project.
2. During the nutrition education sessions and demonstrations, NGOs should place more emphasis on increasing egg consumption by mothers and children
3. Integration of poultry/animal husbandry production into existing home gardening programs should be encouraged as it is feasible and cost effective to ensure household food and nutrition security.

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