

Homestead Food Production Programs Improve Household Nutrition Security

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Micronutrient malnutrition in the Asia Pacific region

- Micronutrient malnutrition is a contributing factor in up to 35% of under-five childhood mortality (Black RE, et al 2008)
- At least one half of pre-school aged children and pregnant women are affected by MN malnutrition including vitamin A and iron
- There is a high prevalence of anemia among women and children in rural areas.
- There is also a high prevalence of infectious diseases



Micronutrient-food intake in Asia

- Rural Asia: low micronutrient intake due to poor quality (mostly plant source foods) and a lack of diversity of the diet.
- Lower bioefficacy of β -carotene from plant foods than previously assumed.
(West et al. 2002, J. Nutr. 132: 2920S–2926S)
→ Need to include animal foods into food-based programs to increase micronutrient intake (HKI Nutrition Bulletin Jan 2003, APRO)

HKI's Homestead Food Production Program (HFPP)

Home Gardening (vegetables & fruits)

combined with

Animal Husbandry (poultry etc.)

combined with

Targeted Nutrition Education

to

**improve the intake of micronutrient rich food among
women and young children**

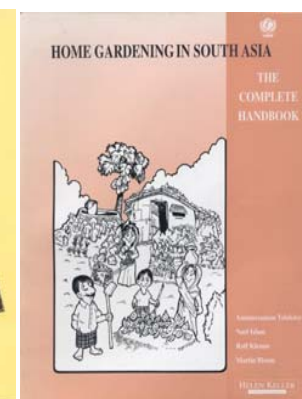
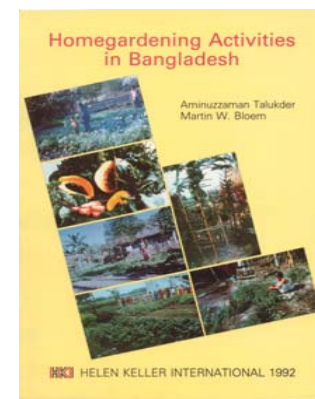
What is food security and nutrition?

Definition of food security:

When all people, at all times, have physical and economic access to sufficient, safe, and nutritious food, and to meet their dietary needs and food preferences for an active and healthy life.

Elements of Food Security and Nutrition:

- i. Availability ii. Access
- iii. Use and Utilization iv. Stability



Key points to remember for FSN

- The overall outcome for food security is the nutritional status of the population.
- All four key elements (availability, access, utilization and stability of food) are important for achieving a good nutritional status.
- Where the nutritional status is low, there is no food security even though there might be a surplus of food supply at the national or regional level.

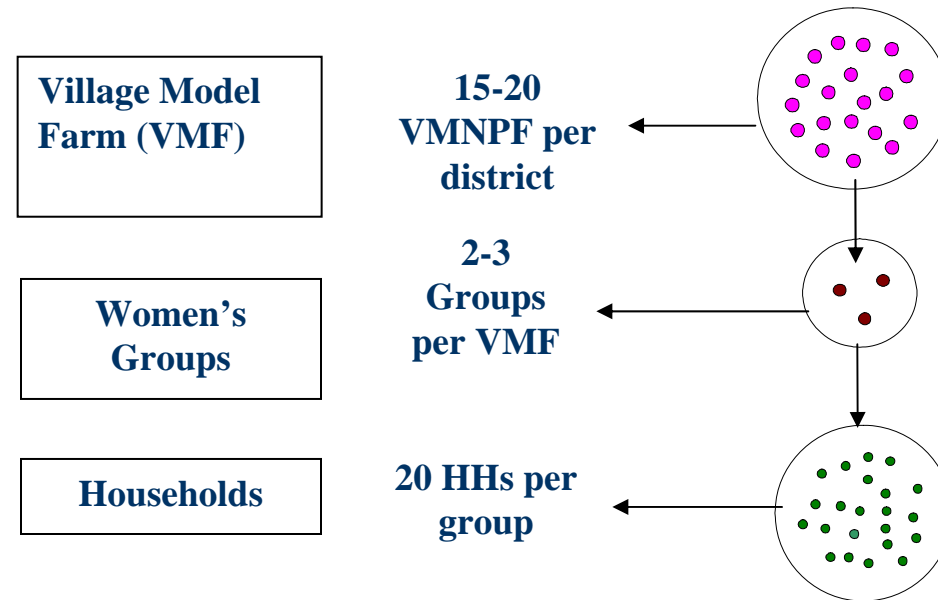
HFPP to date



HKI has:

- Worked in partnership with > 200 NGOs and GOs in four countries- Bangladesh, Nepal, Cambodia & Philippines
- Covered > 950,000 households and 5.5 million beneficiaries over 19 years of implementation
- Integrated nutrition education and essential nutrition actions with HFP program
- Establish homestead food production practices through Village Model Farm (VMF)
- Selected women as primary farming beneficiaries

Model for implementation of HKI's homestead food production program



Village Model Farm (VMF)



Village Model Farm



Study aim

To review the impact of HKI's Homestead Food Production Program and identify lessons learned for further scaling up in new areas of existing countries and to other countries.

Methodology of Evaluation

- Cross-sectional data collected in four countries covering 28,000 households between 2003-2007
- Baseline and Endline surveys conducted between 2003-2007 with both target and control groups
- Control groups selected with similar socio-economic status
- Pre-coded questionnaires used to obtain information on animal food production, consumption and income earning

Methods II

- Capillary hemoglobin (Hb): using Hemocue®
- Anemia definition:
 - Non-pregnant women: Hb <120 g/L
 - Children under five years: Hb <110 g/L
- Blood sample collected from ~ 1200 non-pregnant women and ~1000 children < 5 years
- Other data collected:
 - SES, nutrition KAP and health behaviors, income, decision-making pattern
 - anthropometric measurements

Intervention inputs

- Inputs support
 - Improved breed of chicken, fish cultivars, horticultural inputs
 - Poultry vaccines, animal fodder (Napier grass)
- Training in farming and animal husbandry
- Essential Nutrition Action (ENA) training
- Establishment of links for marketing & resource access
- HKI: financial, technical & managerial
- NGOs: personnel, operational
- HH: chicken; poultry & fish feed, poultry shed



Type of homestead garden

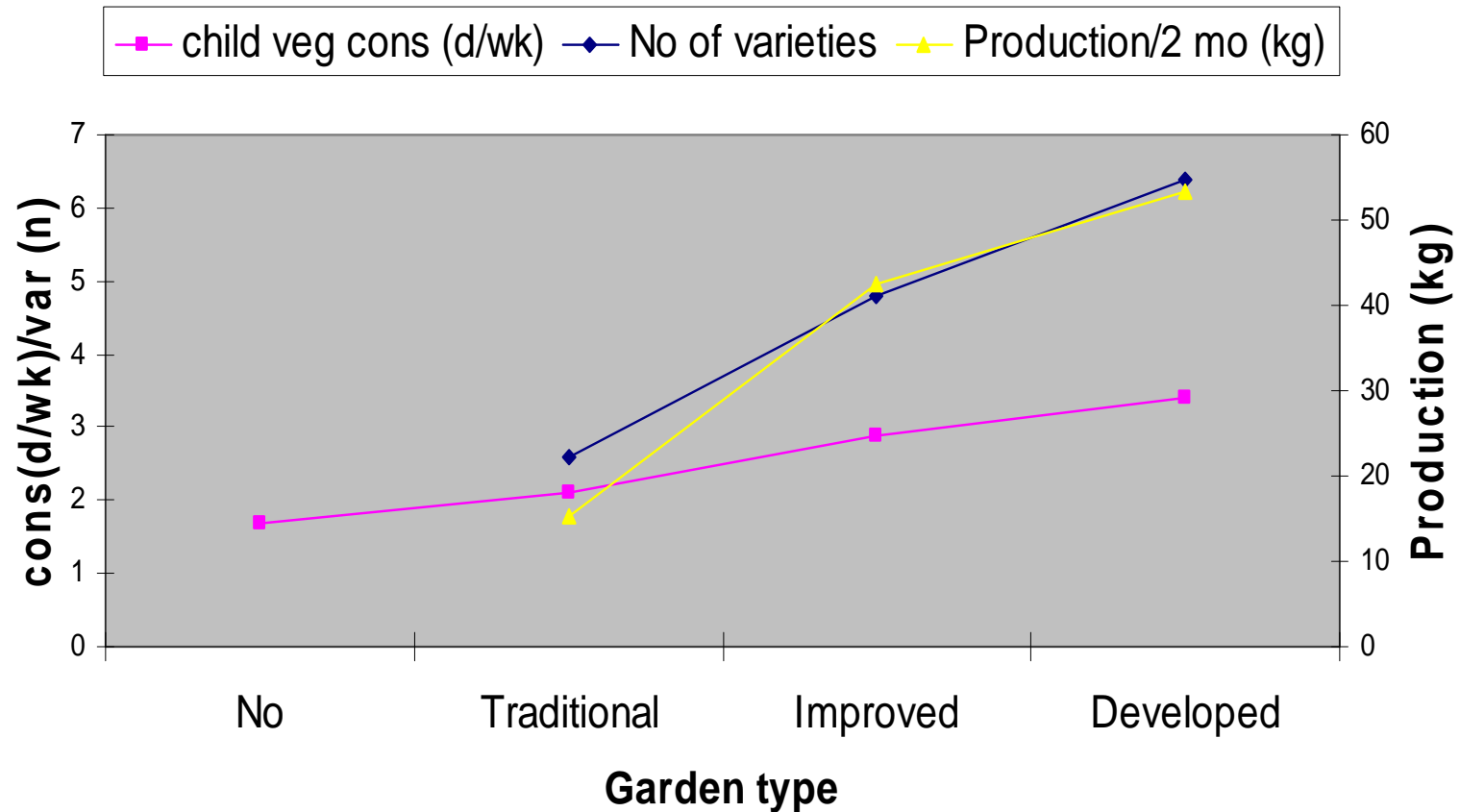
Traditional: Produce only gourd and traditional types of vegetables, seasonally in scattered plots.

Improved: Produce a number of vegetables in fixed plots, but seasonal.

Developed: Produce a wider range of vegetables in fixed plots throughout the year.



Type of garden related to production and consumption of vegetables (n=10,107)

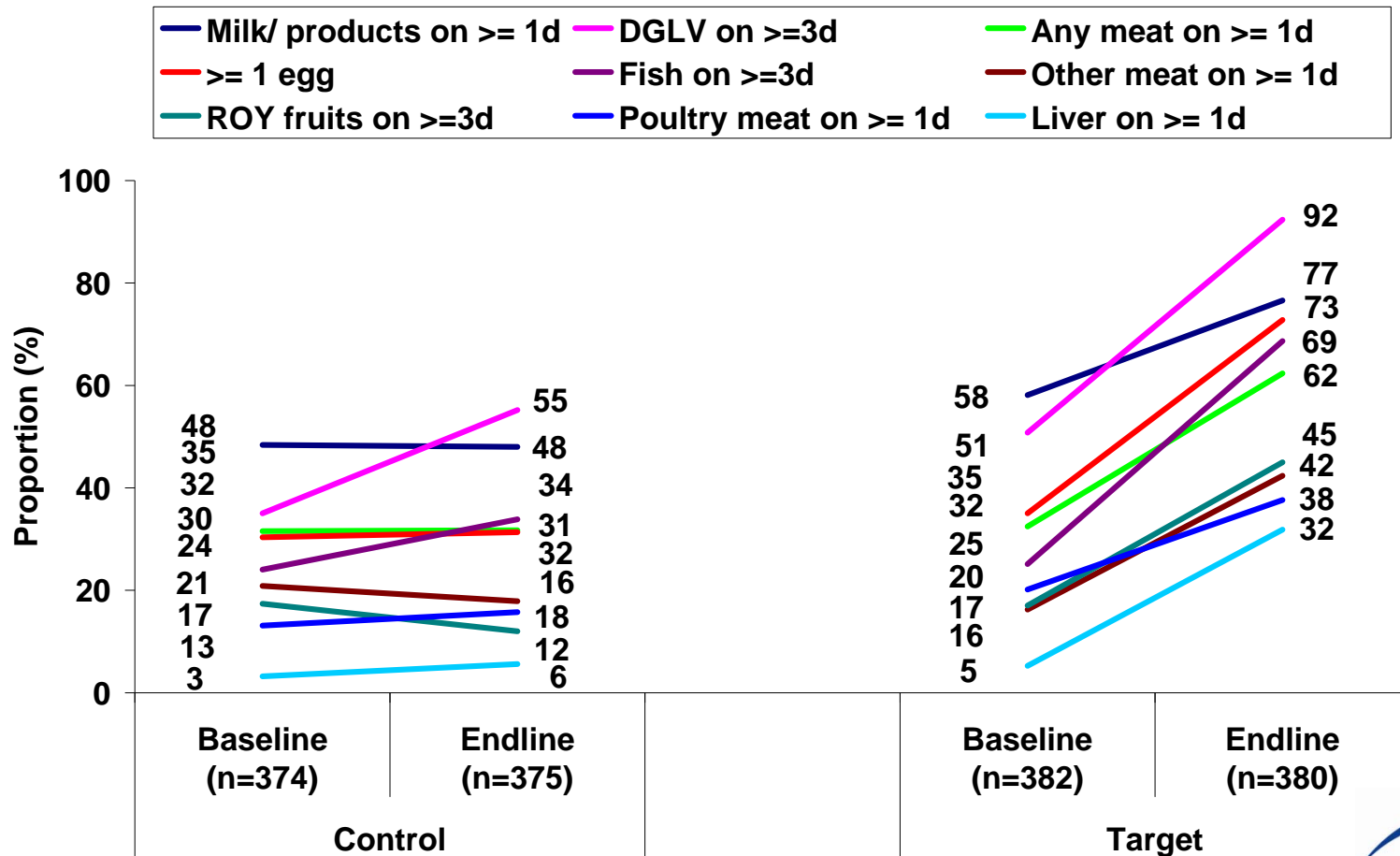


(Talukder et al. Food Nutr Bull 2000;21:165-172)

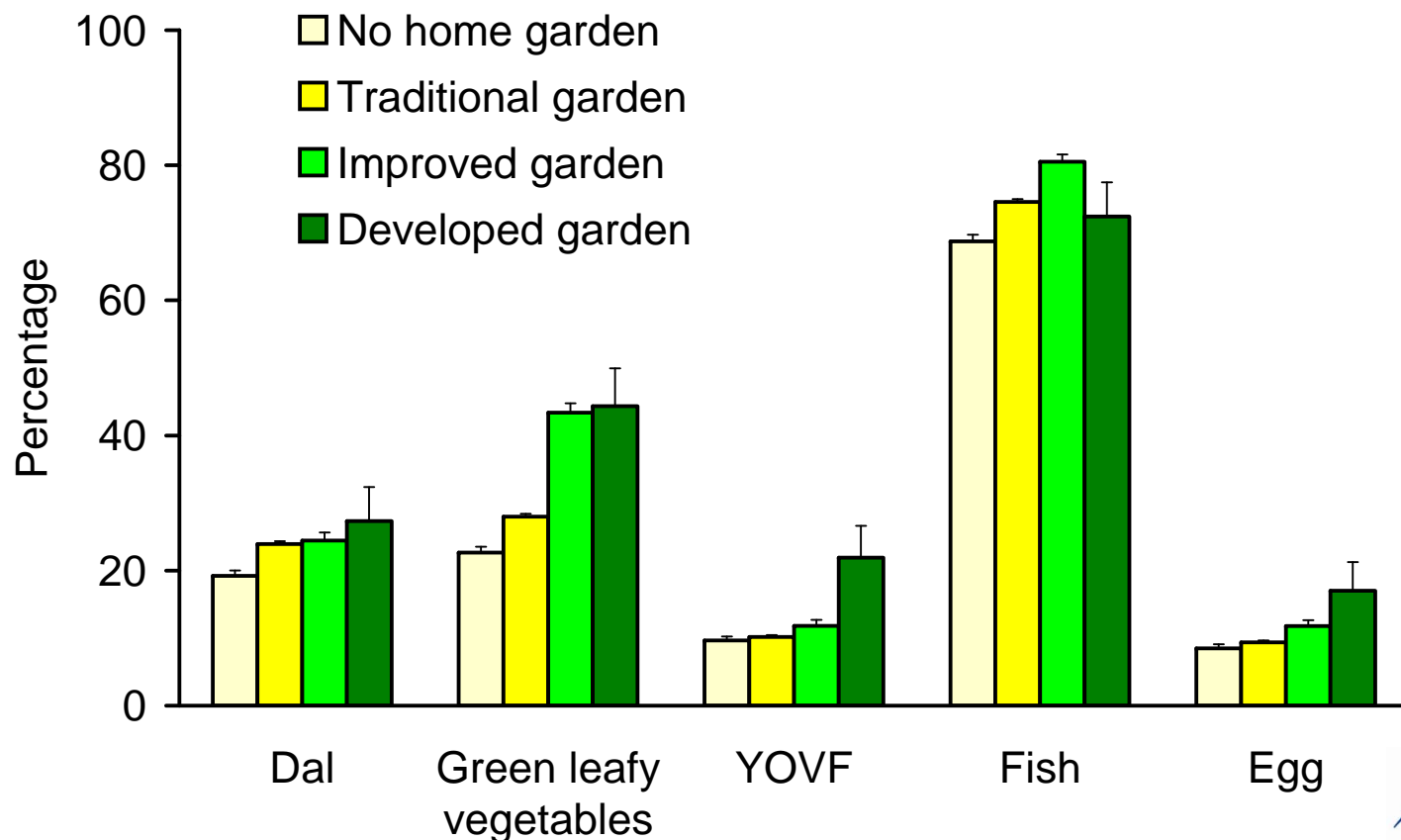


Helen Keller
INTERNATIONAL

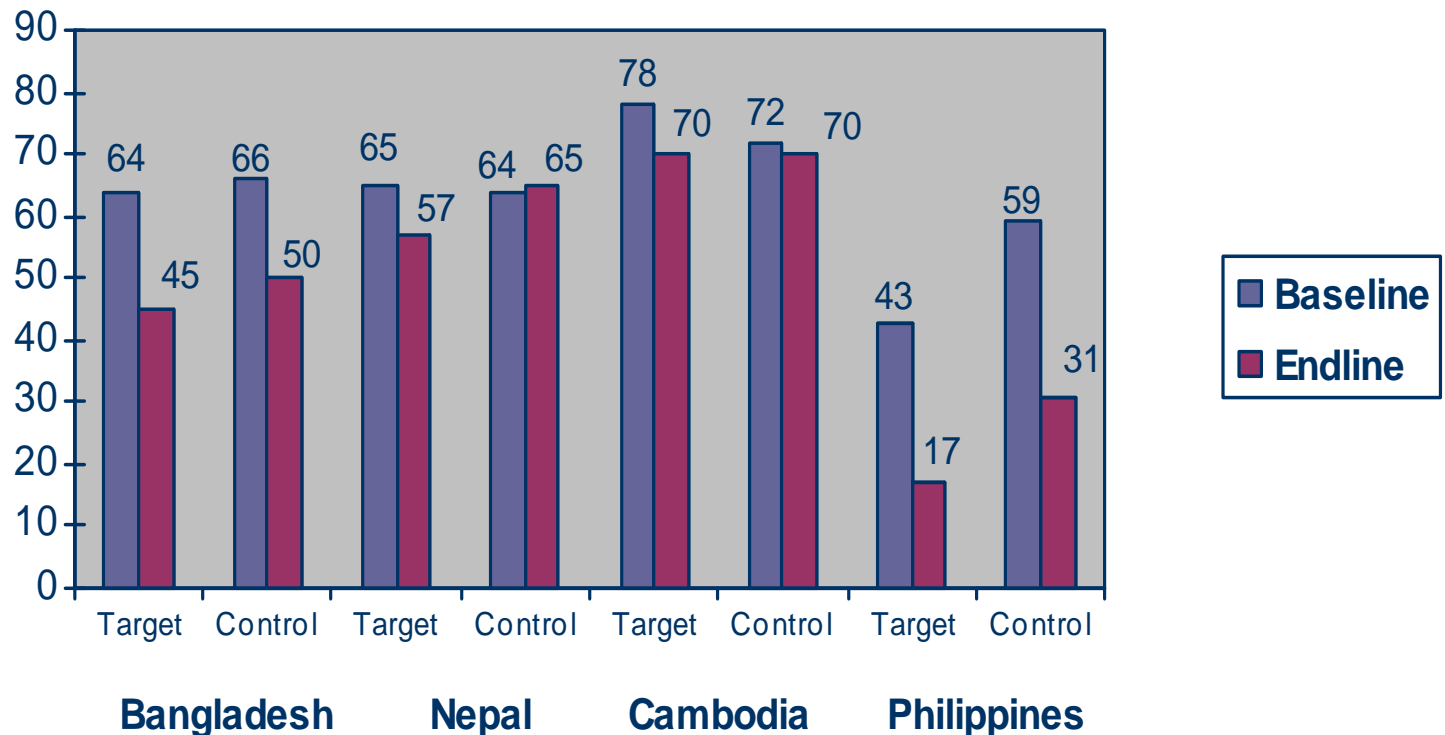
Consumption of various food items in the previous week



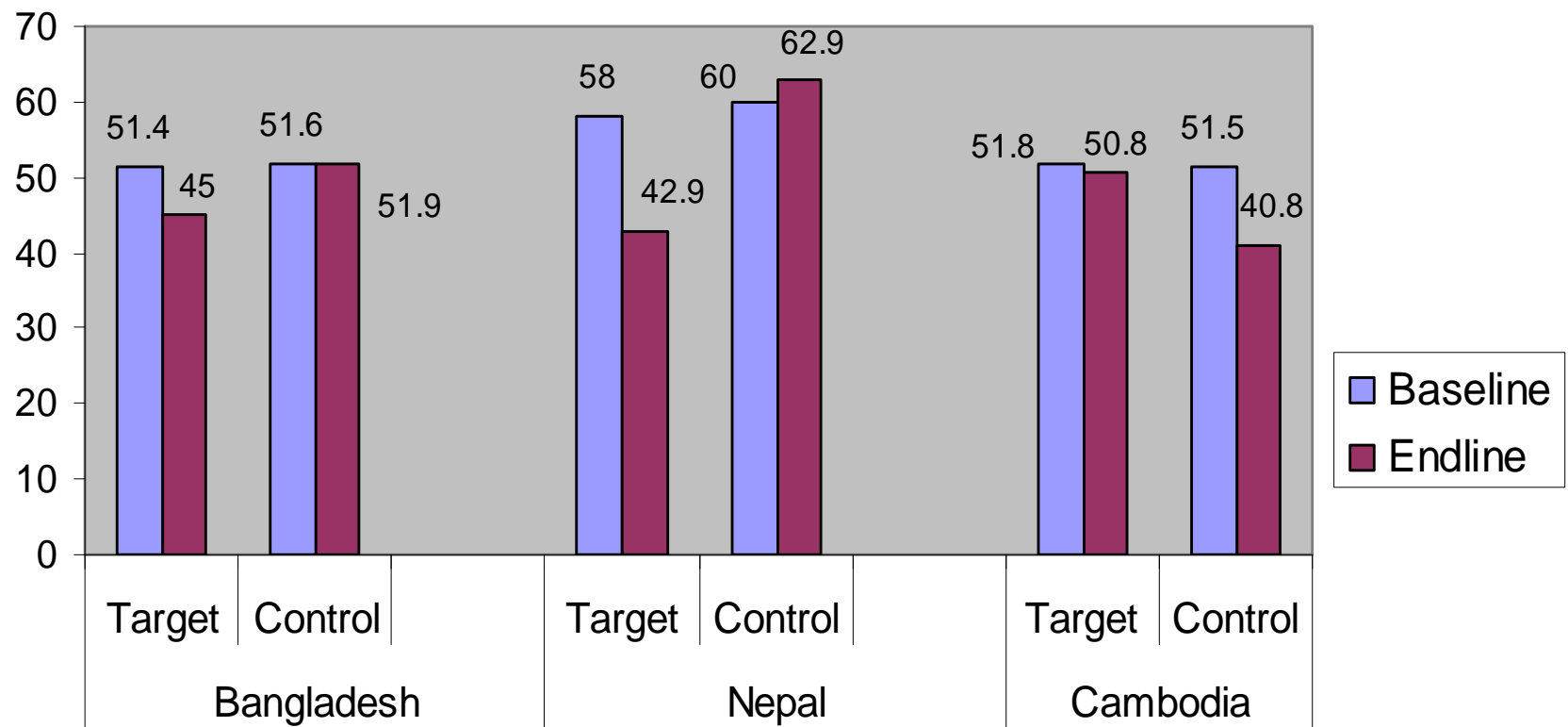
Households that consumed non-grain foods regularly (≥ 3 d) in previous week by type of garden in Bangladesh ($n = 53,850$)



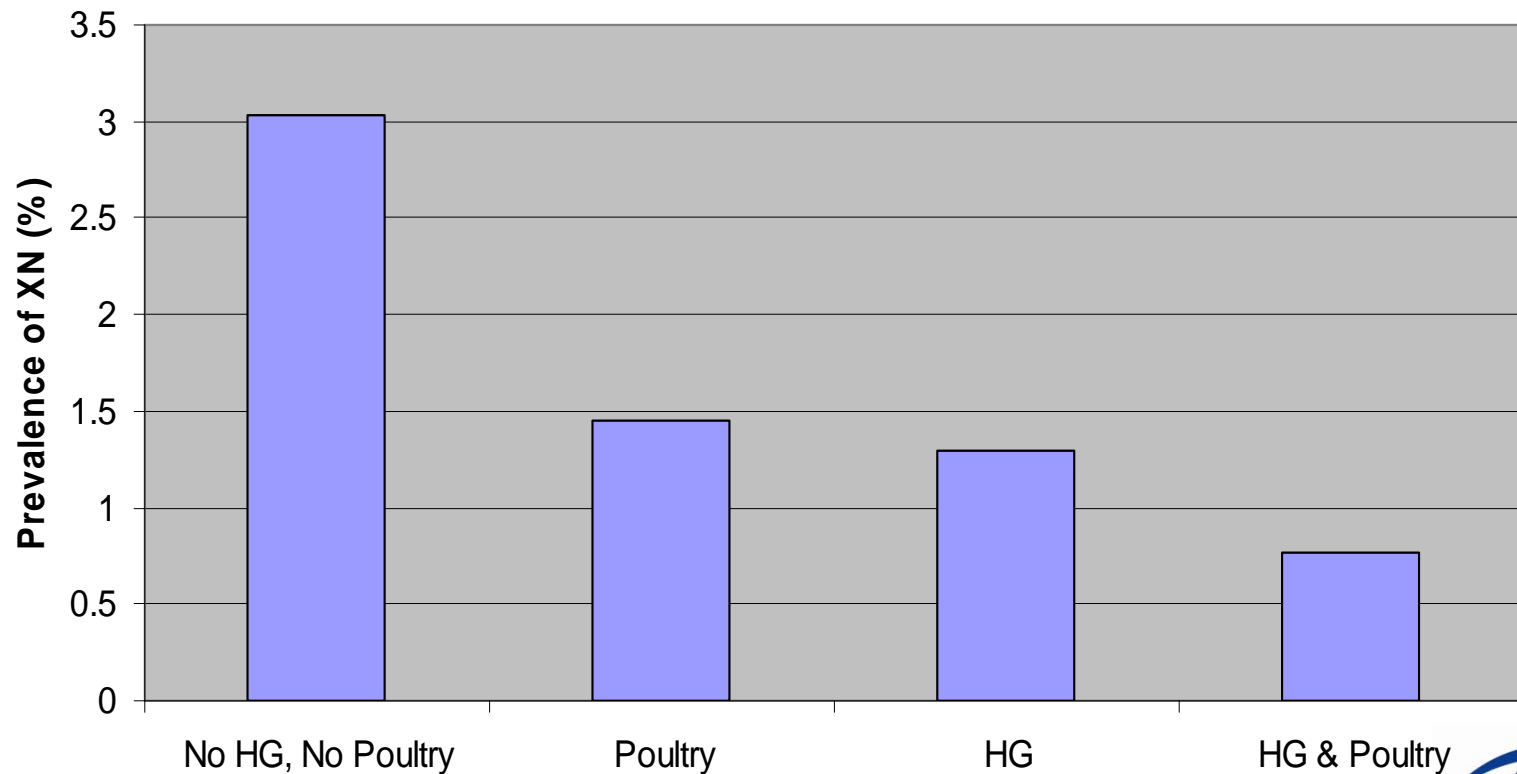
Anemia prevalence among children aged 6-59 mo from program and control households in Bangladesh, Cambodia, Nepal and Philippines at BL and EL



Anemia prevalence among non-pregnant women from program and control households in Bangladesh, Cambodia and Nepal at baseline and endline



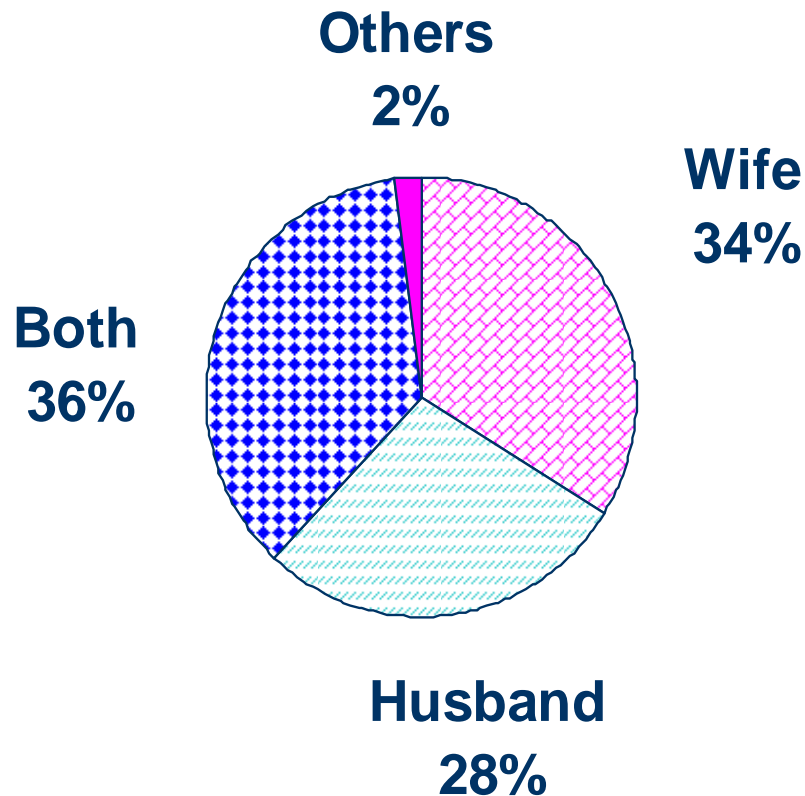
Prevalence of nightblindness among underfives (12-59 mo) that had not received VAC by home garden and poultry ownership (n=4296) (*Kiess et al, APHA abstract*)



Main use of income earned bi-monthly by selling garden produce and poultry & egg.

HH Commodities	% of HH spending income from vegetable and fruits (US\$6)	% of HH spending income from egg and poultry (US\$4.5)
Food	77	61
HFP reinvestment	9	13
Saved	0	2
Clothing	3	9
Education	8	8
Medicine	0	1
Housing	0	6
Social activities	3	0

Decision-making: Who in the household decides how to spend money earned from garden/HFP (n=10,107)



Main reasons for better economic situation of homestead garden beneficiary and control households

Reason	Households (%)			Sig. L
	Completed (n=598)	Active (n=607)	Control (n=315)	
Homestead garden	65.2	84.1	17.7	***
Increase in other incomes	66.4	51.2	65.2	***
More members earning	43.3	30.1	44.3	***
More productive assets	43.6	33.4	26.3	***

Conclusion I

- HHs, including children under 5 years and mothers, could diversify their diet by
 - increasing consumption of micronutrient-rich foods, including poultry and fish
 - generating income, also to be spent on foods
 - thereby contributing to improved household nutrition security.
- Empowers women through homestead food production activities and decision making through increased control over household resources

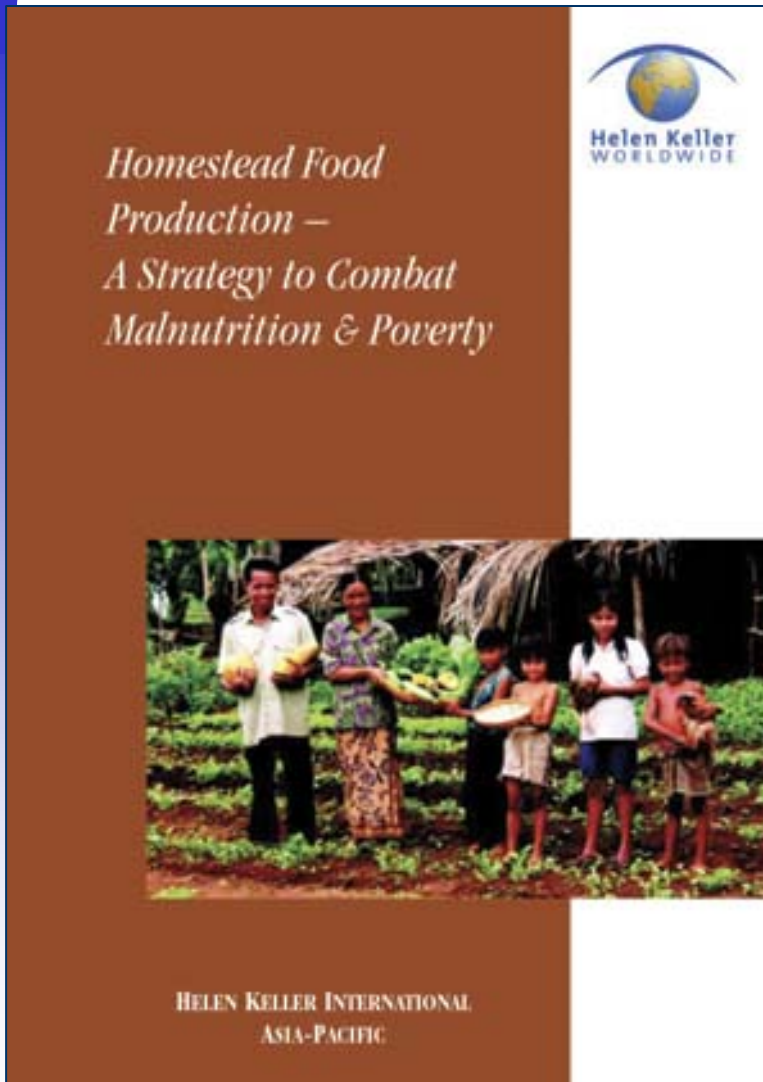


Conclusions II

- In addition, HFP has the potential to improve the micronutrient status, including vitamin A status and anemia
- However, the program can be further strengthened to maximize impacts on health and nutrition outcomes.
 - Improve linkages with health services
 - Improved health and nutrition education
- HFP can be used as coping mechanism after disaster and during economic and food crisis
- Considering multiple benefits, HFP approach should be included in strategies to improve household food security, nutrition and livelihoods and contribute to achieving MDGs.



Thank you!



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www.hki.org