FAMILY FARMS FOR THE FUTURE

FISH PONDS, HOME GARDENS, AND POULTRY RAISING IMPROVE INCOMES, HEALTH, AND FAMILY COHESION IN CAMBODIA

WHAT CANADIAN-CAMBODIAN COLLABORATORS ACHIEVED:

- A demonstrated model to scale up enhanced homestead food production
- Improved health, particularly among women and young children
- New opportunities for families to generate income from surplus vegetables and fish
- Stronger participation of men in farming and household chores
- A profitable business model for small-scale hatcheries
- Improved access to resources, suppliers, and markets

BY THE NUMBERS:

- Assisted over 4,600 households in 232 villages in 4 provinces in developing or improving a combination of vegetable gardens, poultry farms, and fishponds, in addition to another 3,500 non-targeted households (for a total of 17,500 family members)
- USD$285/year in additional gross income for participating families and USD$5,000/year for fish hatchery owners
- The enhanced homestead food production (EHFP) model contributed an estimated 28,000 kg of fish, 260,000 poultry eggs, and 6 million kg of fruit and vegetables to the local food supply
- Food security for participating rural households increased nearly three-fold (from 26% to 72%)
- Dietary diversity improved micronutrient intake (e.g., children in the EHFP group had significantly lower risk of prevalence of dietary inadequacy for zinc in lean season – 16.7% – compared to control – 31.4%)
- 232 Village Model Farms established and served as knowledge hubs
- 12 entrepreneurial farmers created 8 eight fish hatcheries and 4 nursing ponds that provided fingerlings to farmers and communities in 2 provinces
- 30% increase in fingerling production following enhancements to hatchery system construction and operations
- 96% of households (up from 61% at the beginning of the project) established gardens, and the vast majority adopted improved gardening practices, including water and soil conservation, and appropriate fertilizer use
- All provinces, except the city of Phnom Penh, took up aquaculture, ranging from 23% in Kampong Cham to 54% in Kampot. Poultry raising took place in excess of 90% of houses in all provinces.
- 90% of the decisions related to farming were made by women by the end of the study (e.g., women’s autonomy over food-crop and cash-crop farming increased 72% to 82% and 71% to 83, respectively
- Agricultural productivity rose from 60% to nearly 100% from the use of cultivated gardens in the household
- 14% increase in households using an improved water source (from 48% to 62%) and sanitation facilities (66% to 80%), and 11% increase (from 85% to 96%) in handwashing with soap to prevent infection
THE IMPACT

Thousands of poor households on small plots of land in rural Cambodia can now meet their families’ nutritional needs, and generate additional income, by implementing home gardens, fishponds, or poultry raising—or any combination of each. Canadian and Cambodian researchers worked with small farmers to refine a scalable and cost-effective model for improving dietary diversity and food security in different agro-ecological regions of Cambodia. The enhanced homestead food production (EHFP) model provided initial inputs (e.g., quality seeds, fingerlings, chicks), technical assistance (e.g., home gardening, chicken and fish raising), and training on sustainable agriculture that improved household gardening practices, and created more productive, resilient, and environmentally-sustainable year-round food systems. Households that participated in the project produced more produce, and more fish – enough to feed the family a nutritious diet with surplus products sold for additional income. Establishing fish hatcheries and nurseries ensured farmers have a reliable supply of fish fingerlings. Training on nutrition, gender, and marketing also resulted in more men participating in chores traditionally done by women. By empowering women to take ownership of the farms, the EHFP generated opportunities for women to improve their livelihoods and directly oversee household finances. The EHFP model is being considered as a cost-effective model to improve dietary diversity and food security as part of Cambodia’s National Strategy for Food Security and Nutrition.

THE CHALLENGE

Most rural Cambodians depend on subsistence agriculture to feed their families, but poor land utilization, dependence on rain-fed agriculture, and lack of agro-processing infrastructure contribute to seasonal food shortages and a lack of food diversity. To combat these issues, Helen Keller International (HKI) piloted a EHFP model with 900 women-headed households under a previous CIFSRF-funded pilot project, “Fish on Farms”. The model provided vulnerable women farmers with initial inputs and technical training on improved agriculture practices (for home gardens and small fish ponds), as well as nutrition, entrepreneurship, and women’s empowerment. But the trial faced challenges which limited its potential to scale up. They included: the farmers did not have the option to choose their intervention; a lack of markets for surplus produce; divisions of labour between women and men; and, seasonal limitations for home gardens and fish ponds. A subsequent CIFSRF project, “Family Farms for the Future”, was launched to address these challenges.

TRANSLATING RESEARCH INTO ACTION

Improving low-tech innovations, practices, and behaviours

“For me, important training was about gender, like talking about the "hundred hands woman". Another training was about marketing, like how we grow vegetables and make money to support the family.”

Than (Male Farmer), Klaign Khang Tboung village

“My family is now filled with happiness since the organization helped to change my husband to a better person. He helps me with chores, he earns money, and no longer squanders our income.”

Ratha (Female Farmer), Than’s wife

- Optimal stocking densities for small indigenous fish and large fish, ideal pond management, and fish raising techniques incorporated into revised aquaculture best practices guidelines.
- Revisions to hatchery system construction and operations contributed to improvements in fingerling production by about 30%.
• Farmers indicated an overwhelming preference for poultry raising across project areas, making it an ideal intervention that could be refined and promoted.

• Fishponds were more likely to be adopted by farmers in the coastal zone of Kampot and areas with better water availability.

• Adopted improved vegetable growing practices (e.g., making plant beds high during the rainy season and low during the dry season).

• Households who adopted an EHFP model produced significantly more fruit (507 vs. 306 kg), large fish (23 vs. 15 kg), eggs (117 vs. 99 units), and live birds (99 vs. 89 units) than the control group.

• Training helped improve hygiene standards and households' abilities to identify foods rich in nutrients.

• Refined and adapted the “Nurturing Connections” training program and manual (tested in 2800 households with wives, husbands, elders, and community leaders). The community sessions proved effective at addressing locally relevant gender issues, particularly women’s autonomy in income expenditure and domestic abuse stemming from alcohol.

• Demonstrated the benefits of adopting business tools (e.g., selecting crops that increase profits; planning crop seasons for maximum nutrition and minimal inputs; tracking income and expenses; using a price sharing board to negotiate better prices for products).

Expanding the reach of EHFP

“When HKI started supporting me with the fish fingerlings for home consumption production, I invested my own money to buy more fingerlings. I earned over USD$1000 for that production and decided to expand my fish production. Currently I have 6 ponds ... [and] annually earned more than USD$3500 [plus USD$250 annually from selling surplus vegetables].”

Yours Sreang, Farmer, Beoung Nay commune, Prey Chhor District, Province of Kampong Cham

• More farmers from more regions were more likely to adopt the EHFP model if they contributed to the cost of inputs (on a declining scale from 50% to 30%) and selected the model type (garden, fish pond, and/or poultry) that best meets their needs and preferences.

• More farmers stayed engaged in EHFP when it included some type of animal husbandry.

• Farmers were more likely to use their own personal savings to buy inputs than microcredit.

• Fish hatcheries proved a sustainable model that can now be managed by the Fisheries Administration.

• Further refinement of business tools (e.g., income/expense tracking) is needed to compensate for low literacy and limited comprehension of complex business concepts.

Improving nutrition

“Before HKI advised me, I only did rice farming, and planted a very small amount of one type of vegetable, nothing else. But after HKI advised me and provided me with so much information, especially good seeds and technical support I can now plant more types of vegetables... [Now] we have more variety of vegetables to eat and we have leftover vegetables to sell.”

Lach Samet, Farmer, Chrey Sema village, Chi Kla Commune, Svay Anthor District, Prey Veng Province
(Has 3 ponds, vegetable gardens, and rice fields)

• Households increased crop diversity and mitigated the impact of seasonality by growing 15 types of vegetables.

• Focus groups participated in creating common recipes and a recipe database. The project also developed a Cambodian Food Composition Database, now in the public domain.

• EHFP reduced the frequency of nutrient inadequacy among women and young children (e.g., zinc).

Informing policy and decision making
“While fish raising is not a new concept in Cambodia, polyculture of small and large-fish species in the same pond by this project is considered as an innovative approach to increase availability of nutrient-rich food for rural farmers.”

Dr. Hav Viseth, Deputy Director General, Fisheries Administration, Ministry of Agriculture, Forestry and Fisheries, Cambodia

- Several guidelines and manuals for EHFP were updated (e.g., establishing fish hatcheries, poultry production), and shared with stakeholders in Cambodia and the region to assist in scaling up different components of EHFP.
- The project team advised the government on the current National Strategy for Food Security and Nutrition 2014–2018, and are currently advising on the next five-year strategy. The Fisheries Administration has taken steps to incorporate the project’s polyculture model in the 2019-2023 strategy.
- A recommendation was made to Cambodia’s Council for Agriculture and Rural Development and other stakeholders that gender be incorporated into their trainings and future policies as a means to improve food security and nutrition.

WHAT’S NEXT?

The long-term sustainability of the EHFP model will depend on the support of local leadership and the transfer of program ownership to local institutions. HKI is sharing its learnings with neighbouring countries through regional workshops. The projects results encouraged one of the partners, Village Support Group, to expand a World Fish-funded program offered in Battambang and Siem Riep by including small indigenous fish, as well as nutrition and gender training. HKI is also implementing parts of its surveillance trial (PDcRCT) to more rigorously evaluate agricultural production and dietary patterns in about 600 households in northern Vietnam and 10,000 households in Myanmar—evidence that will be used to further refine and scale up EHFP in Cambodia and elsewhere. Longer term monitoring of the EHFP is needed to evaluate its impact over the next decade and beyond.

LEARN MORE ABOUT THIS PROJECT


Project website: http://fishonfarms.landfood.ubc.ca


KEY OUTPUTS

POLICY BRIEFS


OTHER

Country report: scaling up home gardens for food & nutrition security in Cambodia Keats, Sharada; Sim, Sokcheng; Phon, Dary (2018-06) https://idl-bnc-idrc.dspacedirect.org/handle/10625/57265


ACADEMIC PAPER

Impact of an enhanced homestead food production program on household food production and dietary intake of women aged 15-49 years and children aged 6-59 months: a pragmatic delayed cluster randomized control trial protocol Moumin, Najma A.; Hou, Kroeun; Michaux, Kristina D.; Stormer, Ame; Mundy, Gary (Medip Academy, 2017-10) https://idl-bnc.idrc.dspacedirect.org/handle/10625/56737

VIDEO

In Cambodia, family farms for the future. https://www.youtube.com/watch?v=qyuCqu7HNFY

View all related project outputs in the IDRC Digital Library. https://idl-bnc.idrc.dspacedirect.org/browse?type=project&value=107982

QUICK FACTS

Project location(s): Cambodia

Institutions: University of British Colombia (Canada); Helen Keller International (Cambodia)

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