

SCALING UP SMALL-SCALE FOOD PROCESSING FOR COMPLEMENTARY FOOD FOR CHILDREN IN VIETNAM

TACKLING POVERTY AND MALNUTRITION AMONG WOMEN AND CHILDREN STARTS WITH LOCAL CROPS,
LOCAL PROCESSING, AND LOCAL DISTRIBUTION

WHAT CANADIAN - VIETNAMESE COLLABORATORS ACHIEVED:

- ✓ Viable commercial supply chains for rural women farmers
- ✓ A sustainable model to locally produce and market fortified complementary foods
- ✓ Appealing fortified complementary foods for young children
- ✓ Increased consumption of iron-rich food among children and improved health
- ✓ Stronger integration of food security in public policy and programming

BY THE NUMBERS

- Capacity to produce 100 tons of fortified instant rice porridge and 2 million packets of vegetable powder annually by a small-scale food processing (SSFP) factory
- 10% increase in the consumption of iron-rich complementary foods
- Child underweight rate reduced to 13.9% from 17.2%; the wasting rate (low weight for height) reduced from 7.6% to 3.4%; and the rate of anemia among children reduced from 61.3% to 16.1% among children who consumed the fortified complementary foods
- 2,899 kg of instant fortified porridge has been provided to date during mid-morning meals to 2,550 children in 21 pre-schools in Lao Cai
- 2913 consumers purchased 28,133 sachets of ECOSUN Chao ngon porridge (CAD\$0.14 each) during the market launch and 9 mini promotion events held in project locations
- 15 Little SUN nutrition counselling centres established at community health centres in 3 provinces, and 36 health workers at the centres trained in Infant and Young Child Feeding, preparing ECOSUN products, and counselling mothers
- 14,438 children under the age of 2 have benefited through 10,561 family nutrition counselling sessions (e.g., dietary diversity, appropriate child weaning practices)
- ~ 20,000 rural women have been reached through individual and family nutrition counselling sessions, training workshops for women farmers, and marketing events in the 9 project locations and are using the ECOSUN fortified complementary foods for their children
- 450 women farmers trained in Good Agricultural Practices (GAP)
- 10-year public-private partnership formalized between the National Institute of Nutrition (NIN) in Vietnam and a local business woman in Lao Cai for ECOSUN production

THE IMPACT:

Grow locally, process locally, and distribute locally. That three-pronged approach is reducing food security and chronic malnutrition among women and children in three provinces in the remote mountainous regions of northern Vietnam



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(Lao Cai, Lai Chau, and Ha Giang). The project established and scaled up a sustainable value chain for fortified foods using locally grown crops, local manufacturing facilities, and local distribution channels. This market-driven model is reducing reliance on imported fortified foods, creating a higher and more stable source of income for smallholder women farmers, and providing sustainable food security for 20,000 women living in rural Vietnam. Under the model, farmers sell their produce to a SSFP plant that processes and fortifies the food and then distributes it through Little SUN centres, local, family-owned convenience stores, and preschools. Rural families learn about the value of fortified foods for young children, particularly before the age of three years, from Little SUN nutrition counselling centres.

THE CHALLENGE:

Despite remarkable socio-economic growth, and significant improvements in the health status for many in the past two decades, Vietnam continues to face significant problems with food insecurity and chronic malnutrition among women and their children, particularly small-scale farmers and people from ethnic minorities in northern rural areas. Some 46% of local children under 2 are anemic, and 18% are stunted, which contributes to irreversible deficiencies in learning, memory, and decreased IQ. Combating child malnutrition is a policy priority for national as well as provincial governments. Two models have shown great promise. One developed and produced ready-to-use- fortified complementary foods for children using SSFP facilities. The other model relied on a social franchising to develop the “Little SUN” health counselling program for infant and young children feeding practices. However, more work was needed to scale up these proven models and make them sustainable, including: overcoming barriers women farmers face in connecting with produce buyers; the lack of local food processing capacity; and the lack of a local distribution system for fortified complementary food products.

TRANSLATING RESEARCH INTO ACTION

From farm to plate: Building a sustainable value chain for nutritious foods

“The project has established the basis for a local food system which can be sustainable and can continue having positive results many years after we leave. This is what is possible when academics, practitioners, communities, and partners are able to work toward a common goal.”

Dr. Cecilia Rocha, Project Leader, Ryerson University

- A SSFP facility was established under a cost sharing agreement between NINFOOD and a local woman entrepreneur (Thuy Dung). The franchising model, which provides small-scale farmers with a stable purchaser, includes product manufacturing rights, technology transfer, food safety training, and administrative support, as well as a commitment to purchase produce from the 17 smallholder farming families in the Song Kim Collective (mushrooms, carrots, squash, and sweet leaf).
- The SSFP received ISO 22000 compliance and was certified by Vietnam’s Ministry of Health to produce fortified complementary foods.
- The SSFP in Lao Cai is producing enough products to supply markets in all 3 provinces, including 21 pre-schools in Lao Cai.
- NINFOOD designed and built customized equipment for the safe fortification of the complementary food products for children.
- Demonstrated the effectiveness of using the health system (Little SUN centres) to increase demand for and acceptability of fortified complementary foods
- Women farmers in co-ops in 3 provinces received nutrition messages and seed packets, and will supply locally produced crops as raw materials for the production of complementary foods.

- Strengthened the capacity of Vietnamese groups (NIN, Vietnam Women's Union, universities, farmers' and women's organizations) in technical areas of food security programming to secure the sustainability of project models and results.
- The collaboration between NIN and Ryerson University led to additional partnerships between countries, academic institutions, farmers, local businesses and government and non-government sectors.

Improving nutrition and increasing consumption of fortified complementary foods

- NIN and its business subsidiary, NINFOOD, developed an instant porridge fortified with iron and zinc (CHAO NGON), and vegetable powders fortified with minerals and vitamins (VICA) which can be added to the porridge. Instant porridge also reduces caregiver time and drudgery associated with making porridge.
- High satisfaction among consumers (81-92%) for fortified complementary products (consistency, flavour and taste).
- January 2018 market launch of products in 9 locations in 3 provinces included taste-testing and a master chef competition.
- A mixed marketing strategy combined social marketing, partnerships with local vendors, bulk purchasing, and vendor incentives to cover transportation and distribution costs.
- Diverse promotional materials developed (e.g., ECOSUN billboards, showcase booths, lucky wheels, Facebook marketing, flash cards).
- Preliminary results show that anemia rates a cohort of children declined from 61% to 16.1%. Further analysis is required to confirm the findings.
- Participating families reported worrying less about food (from 38.2% to 22.5%), and the number of people reporting a lack of dietary diversity was reduced from 36.6% to 20.2%

Informing policy

- Increased reference to food security activities in NIN's activities and documents as a result of the project.
- Contributed to the Nutrition and Food Security component of the National Plan of Action for Nutrition (NPAN) which has been integrated into plan's policy framework.
- Learnings from the project will support several proposals made in the NPAN (e.g., legislation to ensure food security for poor and disaster-affected areas; and policies to encourage private sector investment in production and provision of nutritional products for those in need, especially pregnant women and children under 5)
- Experiences and learnings from the project were shared with over 40 Indonesian delegates in November 2017.

WHAT'S NEXT?

NINFOOD and Thuy Dung Co. plan over the coming years to build and expand their networks, including expanding Little SUN centres in the provinces of Hai Phong, Hoa Binh, and Thanh Hoa, as well as hospitals, pre-schools, international health organizations, and urban markets. The Vietnamese partners also plan to add more SSFP plants in other provinces. A joint mission of NIN, World Bank, and development partners is underway to review intervention models to scale up nation-wide, with ECOSUN being one model for consideration. On the policy front, lessons learned from the project will inform the development and implementation of national food security policies, such as Vietnam's National Nutrition Strategy, the nutrition policy for ethnic minority children, and the Prime Minister's directive calling for the enhancement of nutrition. NIN is also expected to use findings from the project to inform best practices for Vietnam's Zero Hunger Program. The project teams are seeking funding from different sources to continue and expand the project's impact at reducing child malnutrition in Vietnam.

LEARN MORE ABOUT THIS PROJECT:

Project abstract: <https://www.idrc.ca/en/project/scaling-small-scale-food-processing-therapeutic-and-complementary-foods-children-vietnam>

Project websites: <http://viendinhduong.vn/news/en/880/127/scaling-up-small-scale-food-processing-for-therapeutic-and-complementary-foods-for-children-in-vietnam.aspx> /
https://www.ryerson.ca/foodsecurity/activities/activity_ecosun/

KEY OUTPUTS

VIDEOS

EcoSun CIFSRF Vietnam : small scale food processing and complimentary foods for children EcoSun, IDRC, GAC 12/04/2018 Matthew Brown EcoSun, IDRC, GAC <https://www.youtube.com/watch?v=yp5aYOeF96E&t=143s>

EcoSun CIFSRF Vietnam: local food processing to decrease malnutrition and food insecurity EcoSun, IDRC, GAC 20/06/2018 Matthew Brown EcoSun, IDRC, GAC https://www.youtube.com/watch?v=rv-CgJ_BFDc

OTHER

Ryerson and Vietnamese Collaborators Conduct a Knowledge Exchange Trip to Brazil Jun-17 Melody Mendonca Ryerson University <https://www.ryerson.ca/nutrition/news-and-events/news/2017/10/ryerson-and-vietnamese-collaborators-conduct-a-knowledge-exchange-trip-to-brazil/>

Conference poster: V Yuan, Y & Rocha, Cecilia & H Do, B & Brown, Matthew & Huynh, P & Nguyen, H. (2018). *Acceptability of Fortified Complimentary Foods in Lao Cai, Vietnam*. 10.13140/RG.2.2.32914.71360.

Addressing malnutrition across borders. Article in Ryerson University Research and Innovation Newsletter (2017) <https://www.ryerson.ca/research/publications/newsletter/mar-apr-2017/#1>

Scaling up small-scale food processing for therapeutic and complementary foods for children in Vietnam. Rocha, Cecilia; Yeudall, Fiona; Moraes, Andrea; Yuan, Yvonne; Tenkate, Thomas; Mendonça, Melody; Duong, Vien Dinh; Do Huy, Nguyen; Huyn, Phuong; Bao Hoa, Do Thi; Brown, Matthew. (2018) <https://idl-bnc-idrc.dspacedirect.org/handle/10625/57349>

VIEW ALL RELATED PROJECT OUTPUTS IN THE IDRC DIGITAL LIBRARY

<https://idl-bnc-idrc.dspacedirect.org/browse?type=project&value=108124>

QUICK FACTS

Project location(s): Vietnam

Institutions: Ryerson University (Canada); National Institute of Nutrition (NIN) (Vietnam)

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