SCHOOL AND HOME GARDENS PROJECT
A Participatory Action Research on School- and Community-based Food and Nutrition Program for Literacy, Poverty Reduction and Sustainable Development

KEY ACCOMPLISHMENTS
January 2016 - June 2017
ABOUT THE PROJECT

Proper nutrition plays a vital role in the overall growth and development of school children, especially in enhancing their academic performance. Nutrition is a function of children’s dietary habits and the kind of food they eat. However, many families, particularly in rural areas, do not have access to nutritious food which leads to malnutrition among school children. According to the ‘World Declaration on Education for All’, poor health and nutrition result in low school enrollment, absenteeism, poor academic performance, and early school dropouts. Based on a 2013 survey of the Food and Nutrition Research Institute of the Philippines, among 5 to 10-year old children, 29% are classified as “underweight” while 30% are “stunted”. The learning and academic performance of these school-aged children are thus compromised.

It is against this backdrop that SEARCA, in cooperation with the University of the Philippines Los Baños (UPLB) and the Department of Education - Division of Laguna implemented the project “A Participatory Action Research on School- and Community-based Food and Nutrition Program for Literacy, Poverty Reduction and Sustainable Development”.

The Project’s overall goal is to improve the nutritional condition and dietary habits of school-aged children by increasing production of locally adapted vegetables through school and home gardening and consequently contribute to the community’s food and nutrition security. It has three pillars with the following specific objectives:

**Nutrition** - to increase diversity and availability of food within the local community that will meet the nutritional needs of children;

**Education** – to increase knowledge and improve skills of students and teachers on food production and nutrition through experiential learning activities that inculcate the importance of agriculture, environmental concerns, and the use of locally adapted green technologies; and

**Economic well-being** – to reduce families’ food expenses, create savings, and provide an alternative source of income for families to alleviate poverty.

KEY ACCOMPLISHMENTS

SPECIFIC OBJECTIVE 1. NUTRITION

Increase diversity and availability of food within the local community that will meet the nutritional needs of children

1. Improved Nutrition, Knowledge, Attitudes, and Practices (KAP) towards Vegetable Consumption and Production

1.1 Baseline and endline data collection on children’s nutritional status have been conducted. Results show the following:

- Among the schoolchildren assessed in the five elementary pilot schools, there was a 1.8 gram average increase in weight, a 1.3 cm average increase in height, and a 0.45 average increase in Body Mass Index (BMI). These resulted to 33% rehabilitation rate or change from thin to normal nutritional status.
- Among the Grade 7 students assessed in the only pilot high school, the changes were 3.29 gram average increase in weight, 4.02 cm average increase in height, and 0.79 average increase in BMI. These resulted to 44% rehabilitation rate or change from thin to normal nutritional status.
SPECIFIC OBJECTIVE 2. EDUCATION
Increase knowledge and improve skills of students and teachers on food production and nutrition through experiential learning activities

2. Enhancement of School Gardens

2.1 The six pilot schools have enhanced their respective existing gardens following the concepts of edible landscaping and organic agriculture. The school garden coordinators have become more aware of the importance of using certified organic seeds as well, thus have been more discriminating in accepting seed donations.

2.2 Mini-greenhouse with rainwater collection system was installed in each school for seedling and planting materials production and to demonstrate a climate change adaptation strategy.

2.3 Garden tools, seedling trays and bamboo tables, and initial garden supplies such as seeds, organic fertilizers, garden soil, and potting medium were provided and have been fully utilized. Schools have enough seeds as they have learned how to save seeds from the previous cropping. They now practice regular composting and vermi-composting in their gardens so they can produce part of their requirements for their vegetable production.

2.4 Local Government Units of the pilot schools have provided additional garden facilities such as vermicomposting sheds, nipa huts, and planting materials.
3. Lesson Integration into School Curricula

3.1 One hundred and twenty-five (125) lesson plans integrating the concepts of nutrition, organic agriculture, climate change mitigation and adaptation, and solid waste management were prepared by Grade 4 and Grade 7 Science, Mathematics, English, Edukasyong Pantahanan at Pangkabuhayan (EPP) (Home Economics) and Technology and Livelihood Education (TLE) teachers.

In lieu of the DepEd standards, additional parts of the lesson plans were added. The revised lesson plans are back with DepEd-Laguna for review and approval.

3.2 Cooking contests with original recipes using vegetables from the school garden were held and participated in by parent-pupil tandems. The original vegetable recipes are now being compiled as a recipe book which includes nutrition information.

Moreover, the only pilot high school has required its Technology and Livelihood (TLE) teachers to develop additional new recipes with ingredients that are easily obtained from the school garden.

3.3 Teachers made use of the school gardens to teach some of their class lessons. A Grade 7 teacher engaged the children to each collect 5 insects from the garden to study them and at the same time to get rid of the garden insect pests. A Grade 1 teacher used the garden as part of their lesson on observation. A Grade 6 class harvested vegetables and cooked them as part of their exercise in EPP.

SPECIFIC OBJECTIVE 3. ECONOMICS
Reduce food expenses, create savings, and provide an alternative source of income for families

4. Improved Supply and Quality of Fresh Vegetables for the School-based Feeding Program

4.1. Analysis of the harvest data from on-site monitoring of school garden coordinators indicates that a total of 1,397kg of assorted vegetables were harvested in all the six pilot schools during the School Year (SY) 2016-2017. Almost half (46%) or 635kg were used as ingredients in the school feeding program. On the other hand, 19% or 270kg were shared directly to school pupils or their parents, 17% or 239kg were sold in the canteen, and 10% or 135kg were cooked by pupils for their class activities. Another 8% or 118kg were considered non-marketable, thus utilized for compost production.

4.2. Analysis of the economic value of harvests shows that the total harvests in all the six pilot schools during the School Year (SY) 2016-2017 have a gross value of PhP42,599.00. Harvests that were used in the feeding program and those that were sold amount to PhP18,375.00 and PhP6,923.00, respectively. On the other hand, harvests shared with the school children and/or parents are valued at PhP9,150.50. The schools also utilized harvests from their gardens for its various activities which amount to PhP4,140.80.

4.3. The five elementary pilot schools have successfully finished the required 120-day school-based feeding program. Some schools extended their feeding program up to 20 more days because of the availability of the vegetables from the gardens.

4.4. At times when there were extra harvests, some schools accommodated other school children who were not under the feeding program for them to enjoy the vegetable meals. School feeding coordinators have also recorded school children bringing home the extra fresh vegetables and/or vegetable meals from the feeding program to share with their families.

4.5. In the only pilot high school, the school has included non-reader students in the feeding program.
Situation analysis of households as basis for planning and designing interventions to engage them in ensuring food for their children

Socio-economic baseline profiling of households of malnourished children in pilot schools has been conducted to identify factors affecting under-nutrition among children. Results indicate the following:

- A total of 45 mothers of wasted and severely wasted students were interviewed, which was identified in the nutrition component of this study. Thirty three percent is from PGMNHS in Sta Cruz. Twenty percent is from Majayjay Elementary School, 16% is from Cabuyao Central School, 15% is from Labuin Elementary in Pila, and the rest are from the other pilot schools.

- The average age of the mothers is 42 years. With a typical household size of six members, three of the four children are aged 13 years and below. Not all households have both parents who are income earners.

- On the average, only 1.6 parents per household is an income-earner, which indicate that at least half of the households have stay-at-home mothers, and half have working mothers. The parents of students are either salaried or commission-based, or engage in small businesses.

- A salaried parent may be an office or church worker, public school teacher, factory worker, sales lady or security guard in a shopping mall, or even a cook in a small carinderia or bakery, or a service crew in a popular fast food chain.

- Male salary earners also work in delivery of tiles for flooring, hollow block making or in junk shops, while female salary earners are either laundry women or yaya.

- Those who are engaged in small scale businesses are into rice or vegetable farming, or raising animals like swine or cattle. These small scale businesses also include sari-sari stores or sell cooked and uncooked food, or clothes.

- There are also parents who are into small-scale service-oriented businesses. These includes being a carpenter, gardener, tailor or manicurist, which are all skilled labor.

- Some parents are masons or laborers in construction, which earns less than skilled carpenters. There are also parents who sell cell phone load.

- A typical parent that was covered in this study is either engaged in low- or moderate-paying profession or livelihood. While there are skilled workers among the parents, none are high-earning professionals. A number of households are even in subsistence living.

- The average income of a student’s household is PhP13,742.00 per month, which is actually above the 2015 national poverty threshold of PhP9,064.00.

- The household that has the highest income receives PhP35,000.00 every month, while that which has the lowest income receives only PhP3,000.00 every month.

- Of the 45 parents interviewed, 14, or 31%, have savings. These are kept in banks (commercial bank, rural bank or MFI bank), at home or invested in informal financing schemes like turnohan or pahulugan.

- Almost half of the household respondents (21) declared that they do have access to a vacant lot or small farm if they decide to set up a vegetable garden.

- On the average, the available lot is 580 square meters.

- The nearest is just adjacent to a respondent’s homelot while the farthest is two kilometers away.

Endline evaluation mechanisms shall be coordinated with relevant LGUs to assess progress and outcomes of the LGU programs for capacity building of households in establishing their home gardens.
### ADDITIONAL OUTPUTS AND OUTCOMES FROM THE SEARCA-DepEd-UPLB PROJECT

**1. Capability Enhancement of Teachers**

1.1 Through participatory planning and consultation workshops, pilot school teachers and principals crafted their respective garden layout and action plans.

1.2 School garden coordinators and teachers of pilot schools participated actively in seminars, training and workshops on organic agriculture, food and nutrition, climate change, and solid waste management. Teachers readily prepared lesson plans to integrate those concepts in their classroom lessons.

1.3 A school principal and an EPP Teacher Coordinator who originally attended the workshops but were transferred later to other schools brought with them what they have learned and continued to implement the SHGP in their new school assignments with minimal support from the SHGP. They mobilized other resources.

1.4 Some teachers have established their own home gardens in their backyards or in pots. Some have replaced their ornamental plants with edible vegetables which their family now consumes for free.

1.5 Some teachers got promotions because the certificates, for attending workshops, seminars, training, and for writing lesson plan drafts were credited as part of their professional achievements.

1.6 The Project now has a cadre of well-motivated, capable and dedicated teachers who have already taken initiatives to “pay forward” their knowledge and experience to others.

**2. On-line Information Exchange Among School Partners**

A Facebook account has been promoting active exchange of information and on-going activities among partner schools of the SHGP. In some schools, this paved the way to obtain financial and in-kind support from their alumni. School garden coordinators have also credited this on-line platform as one of the reasons for increased visitation from other school districts.

**3. Local Support to School and Home Gardens through Partnership of Schools with their Local Government and other Stakeholders**

3.1 Local Government Units (LGU) Engagement to Support Households in Establishing Home Gardens Linkages have been initiated and shall be formalized between pilot schools and their respective LGUs (Municipal Agriculture Office (MAO), Municipal Nutrition Action Office (MNAO), and Municipal Social Welfare and Development Office (MSWDO)) to include the pilot schools and home gardens in their existing programs. This will help sustain the needed school garden inputs and services and contribute to mainstreaming the Project into LGU development programs.

3.2 Other local stakeholders including the Local School Board (LSB), Parent-Teacher Association (PTA), respective alumni of the partner schools, volunteer parents and Brigada Eskwela teams are providing support Project.

**4. Sustaining and Scaling up Project Success through Intra- and Inter-Networking**

4.1 **Intra-school networking**

Pilot schools were encouraged to adopt three other sister schools within their municipalities to “pay forward” the success and benefits of the school and home gardens projects (Figure 1). Sister schools have been identified by the original pilot schools and through a workshop enabled them to develop Joint Action Plans that will guide their collaborative activities.

![Figure 1. Proposed intra-network model for Project scaling-up.](image_url)
4.2 **Inter-school inter-agency networking**
A network of the initial original 6 +2 pilot schools plus their sister schools together with respective LGU per municipality/city and relevant Provincial Government Units is being formed as a mechanism to sustain the SHGP initially in Laguna. This can serve as model for promotion to other provinces (Figure 2).

![Figure 2. Proposed inter-network model for Project scaling-up.](image)

4.3 **Self-propelling Model**
Figure 3 below presents a diagram for a self-propelling model of a continuing mechanism of scaling up by the SHGP to other areas.

![Figure 3. Proposed self-propelling model.](image)

5. **Program Sustainability Through Policy Formulation**

5.1 A policy to address the issue of selling junk foods just outside the school gates has been taken up by a partner school’s Barangay Captain who also is the Chair of the Association of Barangay Captains (ABC) in their town. Aside from dealing with the issue at barangay level he also brought the issue to the Sangguniang Bayan for their action and implementation at municipal level.

5.2 A partner school has inked a Memorandum of Agreement (MOA) with their Municipal Agriculture Office to strengthen their partnerships. One of the items stated in the MOA is an annual budget appropriation of PhP50,000 to be allotted for the School and Home Gardens Project.
Participating Schools

Crisanto Guysayko Memorial Elementary School
Nagcarlan, Laguna

Labuin Elementary School
Pila, Laguna

San Andres Elementary School
Alaminos, Laguna

Cabuyao Central School
Cabuyao, Laguna

Majayjay Elementary School
Majayjay, Laguna

Pedro Guevarra Memorial National High School
Sta. Cruz, Laguna

Implementing Partners

Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA)
College, Los Baños 4031, Laguna, Philippines
URL https://searca.org

University of the Philippines
Los Baños (UPLB)
College, Los Baños 4031, Laguna, Philippines
URL http://www.uplb.edu.ph/

Department of Education
Division of Laguna
Sta. Cruz, Laguna, Philippines
URL http://www.deped.gov.ph/

For further information, please contact:

Dr. Gil C. Saguiguit, Jr.
Director
SEARCA

Dr. Bessie M. Burgos
Program Head
Research & Development
Department (RDD), SEARCA
Email: bmb@searca.org
Telephone +63(49) 536-2290 local 3400

Dr. Blesilda M. Calub
Project Leader
and University Researcher III, ASC UPLB
Email: bmcalub.uplb2017@gmail.com

Dr. Leila S. Africa
Study Leader, SEARCA
and Professor, IHNF UPLB
Email: lei.africa@gmail.com

Mr. Henry M. Custodio
Program Specialist and Study Leader
RDD, SEARCA
Email: hmc@searca.org
Telephone +63(49) 536-2290 local 3403

Ms. Maria Katrina R. Punto
Program Associate
RDD, SEARCA
Email: mkrp@searca.org
Telephone +63(49) 536-2290 local 3408