Conserving local crop varieties in school gardens in the Philippines

The Problem

Once known for their diverse backyard gardens and rich culinary talents, the people of the Philippines have been greatly affected by modernization, which has increased food prices and imports. High food costs push parents to seek additional employment to support their families, leaving young children surviving on convenience meals and eating less and less vegetables. The continued high prevalence of hunger, malnutrition and poverty has led to programmes such as the Gulayan sa Paaralan (Vegetable Gardens in Schools), instituted by the Department of Education and Agri-Pinoy framework being implemented by the Department of Agriculture, which were developed to re-emphasise the importance of gardens for diverse and sustainable food production.

However, the use of modern gardening techniques, reliance on commercial seeds and annual (mostly exotic) plant species has left schools and communities with little to show for their efforts. The link between school gardening programmes and supplementary feeding programmes has become weak, leaving school children detached from their food systems. Consequently, UNICEF identified the Philippines as having the 9th highest number of stunted children globally in 2013. With climate change expected to make gardening more challenging as temperatures rise and extreme rainfall events increase, there is a real need for the establishment of improved garden ecosystems that encourage and harness diversity.

Agrobiodiversity

Many tasty traditional Filipino recipes utilize:

- Fruit-bearing vegetables such as Talong, the native eggplant (*Solanum melongena*)
- leafy vegetables such as Kulitis (*Amaranthus gracilis*), also known as amaranth
- root crops such as Ube, the purple yam (*Dioscorea alata*)

Using traditional and sustainable gardening methods, these indigenous vegetables:

- grow easily without chemical inputs
- show tolerance to pests and diseases
- are inherently hardy
- adapt well to climate change

Not only are these indigenous plants rich in many vitamins and minerals, they also hold medicinal properties.

Bataw, the drought-resistant hyacinth bean (*Dolichos lablab*) can be eaten in salads or curries or used to treat fevers and stomach problems, while Sigarilyas, the winged bean (*Psophocarpus tetragonobolus*) has the highest calcium content of all legumes and can nourish a protein-starved infant.

Many of the indigenous vegetables in the Philippines possess multiple edible parts.
The Project

The International Development and Research Centre (IDRC) funded the three-year project, which began in 2012. The project tested and adapted the integrated school nutrition model that has three components; (i) School garden enhancement using bio-intensive gardening (BIG) methods, and crop museum establishment to conserve climate-hardy and nutritionally important crops; (ii) Supplementary feeding of malnourished girls and boys using iron-fortified rice and nutritious indigenous vegetables from the garden, and fifteen lab-tested menu formulations to provide teachers with options that address garden seasonality factors; (iii) Nutrition education for students and parents during the feeding programmes complemented the efforts. The programme tested a range of process and methodological innovations. The integrated model evolved under normal conditions including existing human resource capacities of the Department of Education.

To improve garden diversity, 17 types of indigenous vegetables were introduced into school gardens. Of the twenty-seven public elementary schools involved in the project, two were randomly selected (160 pupils in grades 1 to 3) to receive all three components of the model, while the other schools received only the first component. Agriculture teachers received training in bio-intensive gardening technology, cross visits, and intensive mentoring and monitoring. Popularization and promotion of the indigenous vegetables was supported through information, education, and communication materials, to develop the gardens into centres for learning and discovery for children and visitors. Recipes incorporating indigenous vegetables were developed, to enable the linking of gardens and the school feeding programme. The project was carried out by the International Institute of Rural Reconstruction (IIRR) in collaboration with the Department of Education Division of Cavite Province and the Food and Nutrition Research Institute of the Department of Cavite Province (FRNI-DOST).

Impact

| Improved year-round availability of diverse indigenous vegetables | 22 vegetable types in school gardens, 64% of which are indigenous | Increased use of self-grown vegetables in school canteens | 28.8% decrease in underweight children* |

*data from an elementary school receiving school garden support, supplementary feeding, and nutrition education.

Scaling Up

Following the success of this project, the Department of Education Region IVA provided funding to scale out BIG to additional schools in 18 divisions within the Cavite province. They also worked with the Health and Nutrition Unit to incorporate the scaling out of crop museums in every school district within the Cavite province and Region IVA into their milestones for 2014 and 2015.

A booklet of recipes that incorporate indigenous vegetables has been developed, and includes traditional Filipino lunches and snacks. All of the recipes have been evaluated and adapted to ensure adequate iron and vitamin A amounts per serving, and come under the Php20 (Philippine twenty pesos) budget for allotted meal cost per student. Educational posters have been distributed to as many as 5 provinces in the Philippines, and provide key messages about the importance of including indigenous vegetables to improve the diet of school children, their teachers and their families. In March 2014, the Philippines became the 51st country to join the Scaling Up Nutrition (SUN) Movement and will work with other member countries to ensure every Filipino receives the right to good food and optimal nutrition.

More Information

1. Video: Bio-intensive Gardening (Philippines)
2. Strengthening the school nutrition program in the Philippines
3. Feeding the Mind and Body through Agriculture

Contact: