



## Case Study 1. Native Pig Farming

### Guinayangan Native Pig Association (GuiNaPig) Guinayangan, Quezon Province



Source: <https://verafiles.org/articles/journalists-learn-firsthand-about-climate-smart-farming>

#### Challenges

A group of pig farmers from Guinayangan, Quezon Province, was in search of a cost-effective way to address the factors that contribute to the aggravating causes of climate change for example, the greenhouse gas emissions resulting from the use of artificial fertilizers and pest controls, by raising native pigs organically.

This particular group of farmers was composed of women from their community, mostly housewives, who wanted to find ways to earn for a living while tending to their duties at home.

## Backgrounder

Based on the 2019 IIRR brief on Models for Empowering Women Livestock Producers, many consider keeping pigs as an expensive practice due to the high cost of commercial feeds that is always subject to availability and produce low quality meat.

However, a group of pig farmers from Guinayangan, Quezon Province, found that instead of feeding their pigs commercial feeds, they decided to make feeds from a mixture of coconut meat, vegetables, water, and soil which are more cost-effective and environment friendly. These vegetables include kangkong, papaya, kamote, the stem of bananas, with additions of salt and sugar. Based on their experience, the feeds are organic and the feeding practice is not expensive in any way.

According to Gloria Macaraig, the President of GuiNaPig, more and more women from their community engage in native pig farming because they can easily make the organic feeds inside their homes while tending to other duties. Macaraig herself works as a public servant in the barangay while venturing in native pig farming.

The Association experimented feeding native pigs with commercial feeds. Based on their findings, organically fed native pigs are much leaner and meatier as compared to commercially fed pigs. Organically fed pigs have even higher protein content and lower fat and cholesterol. Aside from these, native pigs are also more resistant to common parasites, pests, and diseases unlike imported breeds.

In terms of marketing, commercially fed pigs are sold at 120 pesos per kilo, while organically fed pigs are sold at 150 pesos per kilo. It is all because of the quality of the native pigs fed with organic feeds, which do not weigh much fat.

## Sources

- Ting, Klaire. (2019). Journalists learn firsthand about climate-smart farming. VERA Files. Retrieved from <https://verafiles.org/articles/journalists-learn-firsthand-about-climate-smart-farming>
- Yang, Angelica. (2019). 5 Ways Pinoy Farmers and Teachers Are Beating Climate Change. Flip Science. Retrieved from <https://www.flipscience.ph/nature/pinoy-climate-smart-agriculture/>



## Case study 2. Gulayan sa paaralan: Gardening, feeding, and nutrition education program

### Tinabunan Elementary School Imus City, Cavite

#### Challenges

Tinabunan Elementary School is one among the barrio schools that sought workable practices to enable sustained gardens which aims to increase cash crops for the school-based feeding programs and advance nutrition education by using the garden as learning laboratories for pupils.

It is a fact that hunger and malnutrition are threatening the health of the poor students. In schools and household levels, there is a dire need to identify, learn, and disseminate appropriate technologies to support food security and nutrition programs. Most rural communities equate gardening with hard work and poor economic returns.

#### Backgrounder

The Gulayan sa Paaralan Program (GPP) of Tinabunan Elementary School, a barrio school under the Schools Division of Imus City, Cavite, has seen immense improvements using BIG or Bio-Intensive Gardening standards.

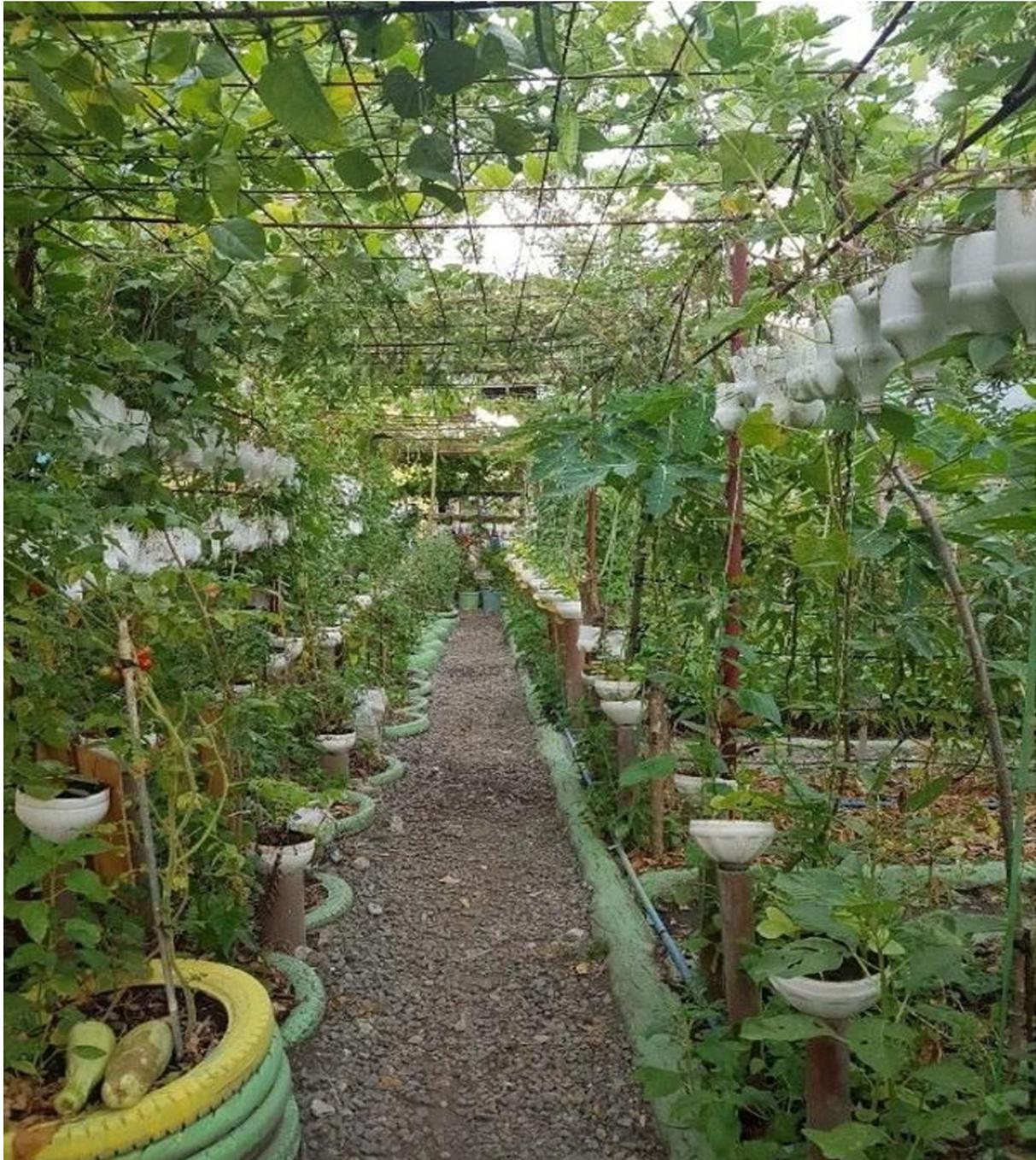
Simple technology with BIG benefits is imperative. The bio-intensive gardening approach developed by IIRR has been tested, modified, and simplified over three decades, keeping the cost low and sustainability high.

BIG is an ecological approach to gardening which makes the best use of available natural resources and does not rely on any chemical inputs.

The public school has its garden and greenhouse, which both serve as learning laboratories for elementary students.

According to the school garden coordinator and an agriculture teacher, Marie Ann Galas, the beauty of the program is its extension to the community as the interest in planting vegetables has reached the household level already. Furthermore, the exposure of the students to agriculture at a young age makes them appreciate it all the more and translate appreciations into actual practice.

Aside from implementing BIG, Tinabunan ES also started serving as one of three model schools identified by IIRR to influence other schools across Region IV-A. With this, they use the integrating school nutrition model—a three-pronged approach towards addressing malnutrition among school children through gardening, supplementary feeding, and nutrition education.



Source: <https://www.flipscience.ph/nature/pinoy-climate-smart-agriculture/>

The school gardens function as a lead example of climate-smart agriculture as it adapts to climate change in lowering the greenhouse gas emissions and using soil nutrients as much as possible, a repository for conserving crop varieties and indigenous vegetables for supplementary feeding, and an environmental science-learning venue for students, parents, and other visitors.

The school harvests vegetables from its garden and uses these to sustain its feeding program for malnourished students. It holds a daily feeding activity inside its cafeteria with paintings on the wall promoting healthy eating.

Also, one major feature of BIG being applied at Tinabunan ES is the planting of nitrogen-fixing trees, such as kakawate trees around the periphery of the garden, with their leaves serving as a source of green fertilizer while the trees create a microclimate or cooling effect around.

They also promote diversity with emphasis on nutritionally dense 70% indigenous vegetables and 30% from commercial seed sources.

The gardens have a total of 22 indigenous vegetables/crops such as batao, sigarilyas, patani, kadios, talinum (Philippine spinach), kulitis, alugbati, Japanese malunggay, uraro, gabi, kamote, ube, roselle, native eggplant, cherry, singkamas, saluyot, malunggay, luya, dahong sibuyas, tapilan, and paayap.

The GPP of Tinabunan ES was able to benchmark the BIG practices and strategies like crop rotation, mulching to cover garden beds, intercropping, botanical pest control, installation of rainwater harvester, and cover-cropping during summer.

Considering its components mentioned above, BIG will highly support school-based feeding. The school will have sustainable and productive gardens that will ensure good nutrition and health for students. Parents get assurance that the food their children eat comes from a garden the school maintains and prepared by the school staff, letting kids avoid health issues.

### **Sources**

Hernandez, Christian Mespher. (n.d.). Tinabunan ES's Gulayan getting 'BIG'ger, pioneers nutrition model as sentinel school. Retrieved from <http://www.depedimuscity.com/news/tinabunan-es-gulayan-getting-bigger.php>

Ting, Klaire. (2019). Journalists learn firsthand about climate-smart farming. *VERA Files*. Retrieved from <https://verafiles.org/articles/journalists-learn-firsthand-about-climate-smart-farming>

Yang, Angelica. (2019). 5 Ways Pinor Farmers and Teachers Are Beating Climate Change. *Flip Science*. Retrieved from <https://www.flipscience.ph/nature/pinoy-climate-smart-agriculture/>



## Case Study 3. Organic Aquaculture

### Camat Integrated Organic Farm Lamut, Ifugao

#### Challenges

Owning a land area of around 1.5 hectares that was formerly operating as an integrated conventional farm in Lamut, Ifugao, Mr. Villafuerte, Jr. Camat sought a scheme to lower input costs being incurred in his farm operations, at the same expand his market that would later benefit him a more stable and higher income.

#### Backgrounder

Mr. Villafuerte, Jr. Camat, a farmer from Lamut, Ifugao, owns the Camat Integrated Organic Farm that has small-scale poultry, piggery, vermiculture, concoction center, vegetable garden, rice field, and fishpond. Camat Farm is also an accredited learning site, especially for training and seminars, by the Department of Agriculture-Agricultural Training Institute (DA-ATI).

Like most from his field, Camat started from scratch. With the high cost of farm inputs, he wanted to go into organic farming, although he did not know how to do it at first. Before, his land area of around 1.5 hectares operated as an integrated conventional farm mostly dedicated to rice, tilapia, swine, and vegetable production.

He then underwent a Community-based Participatory Action Research (CPAR) project on fishpond production in their municipalities. Specifically, the CPAR project ran in Barangays Hapid and Sanafe, where most farmers earn meager income from fishing.



Source: <https://www.foodbevq.com/PH/Lamut/338577053000333/Camat-Integrated-Organic-Farm>

Many fisherfolks felt the decline of income when the inputs for fishpond production increased. Among the interventions introduced in the project include the establishment of tilapia fishpond production demonstration sites as on-farm trial areas, training on the construction and management for tilapia, seine net and scoop net design, post-harvest, data gathering and record-keeping, and organic fish feed formulation, with the assistance of the Bureau of Fisheries and Aquatic Resources (BFAR) and the Regional Fisheries Training Center of Aparri, Cagayan.

Camat applied his training on integrated organic production in his very own farm. With some modifications in the technologies he learned, he customized according to the needs of his production.

Based on the study conducted by Cornell University, it showed that organic farming systems use 63% of the energy required by conventional farming systems. Additionally, less energy expenditure results in less greenhouse gas emissions. Organic farming is, therefore, climate friendly.

An organic farming business will, therefore, incur less expense with regards to energy usage, thus translating into cost savings.



Source: <https://www.foodbevg.com/PH/Lamut/338577053000333/Camat-Integrated-Organic-Farm>

He later on developed his own feed formulation for his swine, chicken, and fish and is now producing his own fertilizer using Azolla in combination with manure for organic swine. He formulated his own feeds out of the available forages on the farm (like rice bran). Eventually, he added copra and soya to the forages and fermented them for 21 days.

He is now a major supplier of vegetables and livestock in his locality and a contact grower of a Nueva Vizcaya-based company, Multi-Fresh.

## Source

- Codamon, Daniel. (n. d.). Farmers from Ifugao go on study tour in organic farms. *Baguio Midland Courier*. Retrieved from <http://baguio.midlandcourier.com.ph/business.asp?mode=%20archives/2015/february/2-8-2015/bus5.txt>
- Department of Agriculture-Philippines. (2020). OFW-turned-farmer proves there is hoe for farming in the country. *Govserv*. Retrieved from <https://www.govserv.org/XX/Unknown/548168618575177/4H-Club-Lucena-City>
- National Organic Agriculture Program. (2017). 5 proven reasons why organic farming makes more business sense. Retrieved from <http://organic.da.gov.ph/index.php/9-facts-figures/35-5-proven-reasons-why-organic-farming-makes-more-business-sense>
- The Philippine Star*. (2016). Ifugao-based farmer leads way in organic aquaculture. *PhilStar*. Retrieved from <https://www.philstar.com/business/agriculture/2016/05/14/1583189/ifugao-based-farmer-leads-way-organic-aquaculture>



# Activity Guide

Name: \_\_\_\_\_ Grade and Section: \_\_\_\_\_

**Instructions:** Assume that your community will implement the strategies as specified in your case study. Study and analyze your material among yourselves, then identify the possible challenges that you may encounter and action plans to address such challenges on the process of implementing similar climate change adaptation strategies.

| Challenges | Counteraction Plans |
|------------|---------------------|
|            |                     |

Now, please enumerate below the factors that you considered in arriving at your counteraction plans, as you cited above.