

Farmer-scientists Ending corporate control in agriculture

EDGAR G. OPALIA¹, NOEL SALAZAR²

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Author's Background

Edgar G. Opalia is the Chairperson of MASIPAG Union of Farmers in Alegria for Sustainable Agriculture (MUFASA). He is a farmer-trainer, rice breeder and a farmer-scientist. Noel Salazar is the Cluster Coordinator MASIPAG in Mindanao.

Summary

Green revolution in the Philippines has changed the landscape of agriculture in the country. Fast-tracking agriculture to get higher yields and better income has replaced the traditional farming practices with destructive systems and chemical inputs. Farmers' innovations are regarded as backward and obsolete but it did not stop MASIPAG farmers from rediscovering and discovering practices that increases yield and proves that they are the foundation of agriculture.

Background

The Green Revolution program in the Philippines was introduced during the 1970's in the name of *The MASAGANA 99*. This program promised higher yield and better income with the use of the package of technology that came with the seeds, changing the practices and culture of the Filipino farmers and made the traditional knowledge backward. Pesticides exterminated local sources of protein, vitamins and minerals such as frogs, fish, snails and edible indigenous vegetables such as swamp Cabbage (*Ipomea batatas aquatica Forsk*), fern (*Athyrium esculentum Retz*) and others. The extremely high finance- based farming system aggravated the indebtedness of farmers due to continuous loaning to finance the required inputs to financing institutions and individuals to the extent that many farmers sold their land for debt payment. This condition augmented the century old problem of landlessness and worsened poverty.

Today, seed are commoditized and privatized. The corporate interest in driving hybrid and genetically modified crops go beyond from the mere profit of seeds, chemical fertilizers and pesticides to profit from royalties and license permits from patented seeds. The persistence of corporate control over agriculture will worsen poverty and malnutrition, intensify global warming and upsurge farmers vulnerability to climate change induced hazards.

Farmers' knowledge and innovations are important parts of agriculture sidetracked by the Green Revolution program. The case of Mr. Edgar Opalia, who was once a chemical agriculture farmer and a HYV seed producer, is typical to many farmers who became a victim of the vicious cycle of production under the green revolution program. The difference is how he set free from the slavery of corporate control over agricultural production resources.

Main Chapter

Going back to basics

Mr. Edgar Opalia was introduced to MASIPAG in 2002. He and his fellow farmers in Alegria went to a MASIPAG training/ seminar on organic agriculture. After which, they undergone the process of unlearning the synthetic chemical based agriculture and learning the MASIPAG ways in organic agriculture wherein farmers are at the center of agricultural system. Farmers also re-learn traditional knowledge and farmers' practices learn farmer-led researches and technology development, participatory rice breeding, community seed banking and more. The process was difficult to them. It took Mr. Opalia years and the other farmers to fully understand the principle behind the MASIPAG way of empowering farmers. His nationalistic outlook, gave him courage and determination to open his mind and learn.

After the MASIPAG training/ seminar on organic agriculture they established their community seedbank in his farm comprising of 50 different rice cultivars (traditional rice varieties, MASIPAG line and farmer breed lines). This functions as a laboratory in which they learned the scientific way of farming and a community seedbank and source of seeds for every planting season. They observe the capability of every rice cultivars in terms of yield potentials, reaction to pests and diseases and to adverse environmental conditions. At present he maintained more than 200 rice cultivars in his trial farm.

Currently, the national average yield (3.8 tons/ha) is way below the potential yields achieved in on-farm experiments (7-9 tons/ha) (Philippine Rice Self-Sufficiency Plan 2009-2010). Yield potential of a variety for a given climate, nutrient management, crop management and socioeconomic constraints contribute to the yield gap. These constraints were addressed through trial farming and farmer- led researches. The experience of Mr. Edgar Opalia is exemplary, through trial farming he was able to reach the optimum yield of 8.2 tons (182 sacks at 45kg/sack) in his 0.75 hectare paddy of a

¹MASIPAG Union of Farmers in Alegria for Sustainable Agriculture (MUFASA). Alegria, Surigao del Norte

² MASIPAG, www. Masipag.org, eMail: masmin@masipag.org

land. His attained (10.9 tons/ha) yield under MASIPAG organic farming strategies exceeds the set potential yield (7-9 tons/ha).

His foremost procedure is to select rice cultivars from trial farm that are locally adapted (adapted to climatic condition, soil and water condition, and his practices). His core indicator is the yield per square meter (0.8 kg and up) and other characteristics then verification of the selected cultivars using his organic farming practices. If the result of the verification affirmed the trial farm result and the eating quality is good, the selected cultivars will be used in mass production.

Varietal improvement through participatory rice breeding

Sometimes in 2004, Mr. Opalia encouraged to improved rice cultivars through rice breeding. He was able to develop 18 selection named EOS (stands for Edgar Opalia Selection). Among of the 18 selections, EOS 01-1 is adapted in coastal rice field of Siargao Island and EOS 01-16 and EOS 01-18 are adapted in his lakeside farm.

He also frequently attends farmers and scientists/ expert forum called by MASIPAG to tackle and discuss farmer developed and/ or adapted technologies in which he is also a presenter of a traditional knowledge/ developed farming practice. The objectives of this forum are for farmers to share their farm innovations and for scientists to provide scientific basis or explanation to these innovations. It also serves to link the farmers with the scientists and learn from each other.

The basic knowledge gained in trial farming and farmer-scientists encounters made him confident in exploring and developing a technology/ cultural management based on the natural resources surrounding him. The knowledge he were gain in MASIPAG made him fully understood the science of rice farming making him to yield 8.2 ton in his $\frac{3}{4}$ hectare rice field.

His practice in rice production includes the use of locally adapted varieties which is the product of his observation in the trail farm. His soil quality improvement practices were the used of coconut husks, carbonized rice hull and chicken dung as organic fertilizer. He also uses fermented rice bran, fermented Golden Apple snail he picked from the farm with banana sap and fermented plant juice as foliar fertilizer.



Figure 1. Mr. Edgar Opalia and the diverse variety of rice in the community seedbank.

He adapted the alternative way of controlling pest. Among the techniques he popularized the use of leaves from a local tree called *Badyang* for rat control. He developed a concoction of herbs called MAPT3 (Madre de cacao, Asunting, Panyawan, Tubli, Tabako, Tawas) extract as insect pest control. After two years of observation he popularized the use of Moringa (Malunggay) as disease control in rice among the farmers in Alegria as well as other members of Masipag in Mindanao.

Since his and other farmers' lot are located beside Lake Mainit in Surigao del Norte, there is seasonal and abrupt rise of water level affecting their agriculture. Sometimes in 2012, he tried late transplanting (45 DAS) technique of rice seedlings (in the Philippines, rice seedling are usually transplanted after 20-30 days after sowing) to avoid the damage of Golden Apple Snail, a heavy rain came causing the abrupt increase of water level in the lake. His farm was submerged for 21 days. He waited until the water level is only up to the level of the dike of the paddy. From that level he slowly released the water until the water is complete drain then he applied his usual practice of soil and plant nutrition until the plant is harvested. In this situation he was able to yield 7.2 tons in his $\frac{3}{4}$ hectare rice farm. This situation draws him to conclude that late transplanting can make rice tolerate submerge condition and this technique is best done during the rainy season when there are possibilities of flooding.

Knowledge Transfer

He also became a farmer trainer teaching and sharing his skills and knowledge in organic farming and issues against farmer's right both in radio and actual training in the farmers field. He also became a member of the Technical Working Group (TWG) on organic agriculture in the province of Surigao del Norte which plans and acts for the implementation of the organic agriculture law (RA10068) in the province.

His developed attitude in scientific observation in trial farming made him discover the occurrence and control of the new insect pest in rice in 2010 which later reported to infest some rice farms in Region 5, 7, 8 and 13 in the Philippines in December 2011. This pest is called the rice grain bug. In June 2012 he was became a resource person in Visayas-Mindanao Wide Technical Awareness on Rice Grain Bug of the Department of Agriculture held in Maitin, Surigao del Norte.



Figure 2. The rice grain bug observed by Edgar Opalia.

Core messages and conclusions

For Nong Edgar, farmers must learn to unlearn the attitude of looking down on themselves as mere receiver of technology and should start to be more perceptive and intuitive. They have the answers to the problems in their hands, they only need to be discovered and rediscovered. The traditional knowledge system, even the innovations, leads the way back to farming in accordance with the laws of nature.

In conclusion, farmer-led research and farmer-scientists partnership is a powerful tool in regaining the farmers devaluated knowledge and lost rights. They are the source of knowledge in agriculture and should not be disregarded or underestimated as they hold the key to improving