



--- Welcome, Guests & Participants! ---
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FARMERS INCREASE YIELD, ADAPT TO CLIMATE CHANGE THROUGH COMMUNITY ACTION

INTRODUCTION

Low productivity and adaptive capacity to climate change impacts are among the main issues of rice farmers. Low productivity is caused by many factors, such as inability to follow recommended practices and incidence of pests and diseases (Beltran et al., 2016; Litonjua et al., 2016). Many factors are also behind the other issue, but, in general, high poverty incidence aggravates it as farmers cannot afford the means to cushion the ill effects of climate change (Ho et al., 2021). For example, a farmer who does not have plenty to spare would be unable to immediately re-establish a weather-devastated crop, thereby exacerbating their poverty, which is an indication of low adaptive capacity.

In this issue of *Rice Science for Decision-Makers*, we present the major results of a study conducted in Maria Aurora, Aurora that shows how guided community action can be a key to addressing low productivity and adaptive capacity to climate change. This policy brief aligns with strategies on consolidation and modernization under the ONE DA “whole of government” thrust of the Department of Agriculture.

KEY POINTS

- A project in Aurora Province from 2012 to 2014 saw that challenges of climate change and rice production are best addressed together by the community.
- Farmers participating in the project who agreed to practice synchronous planting were rewarded with less pest damage and more yield.
- Passing ordinances incentivizing collective action in employing yield-enhancing practices like synchronous rice planting is in the right direction if the aim is to increase yield and enhance farmers’ adaptive capacity to climate change impacts.

ABOUT THE STUDY

Maria Aurora is among the three major rice-producing towns in Aurora. Farmers there used to have easy access to ample water through runoff from the villages of Diaat and Malasin. Over the years, however, they observed the dwindling supply of irrigation water and the decreasing amount of rainfall. Consequently, planting became asynchronous as farmers disregarded the planting calendar designed for them by the National Irrigation Administration (NIA).

To address the issue on plant-as-you-please practices that engendered pest problems, a team from DA-PhilRice, NIA, and Local Government Unit (LGU)-Maria Aurora held a consultation meeting with farmers. From the meeting, the Diaat and Malasin (DIMAES) Irrigators' Association drafted a resolution signed by about 100 farmers and passed by the municipal council of Maria Aurora. The resolution was implemented by the barangay councils in Diaat and Malasin.

The resolution required farmers to plant synchronously, that is, all of them must be able to finish crop establishment in a month's time during the wet season (WS). For the dry season (DS), they were advised to plant non-rice crops alternately. This local legislation was to ensure that there would be enough water to support the synchronous planting strategy.

As the project proceeded, participating farmers joined a season-long Farmer Field School (FFS) on rice cultivation that focused on integrated pest and nutrient management, and farming systems. Integrated farming system lowers emission of greenhouse gases and helps sequester carbon from the recycling and decomposition of wastes as fertilizers (Quilang et al., 2019).

Farmers planting synchronously in compliance with their own resolution.



RESULTS

- **Clustered and synchronous planting in 2013.** The farmers adopted the cropping calendar proposed to them and diversified their crops.

- **Less pests in 2013 than in 2012.** At the start of the project in 2012, almost all pests were present (Figure 1).

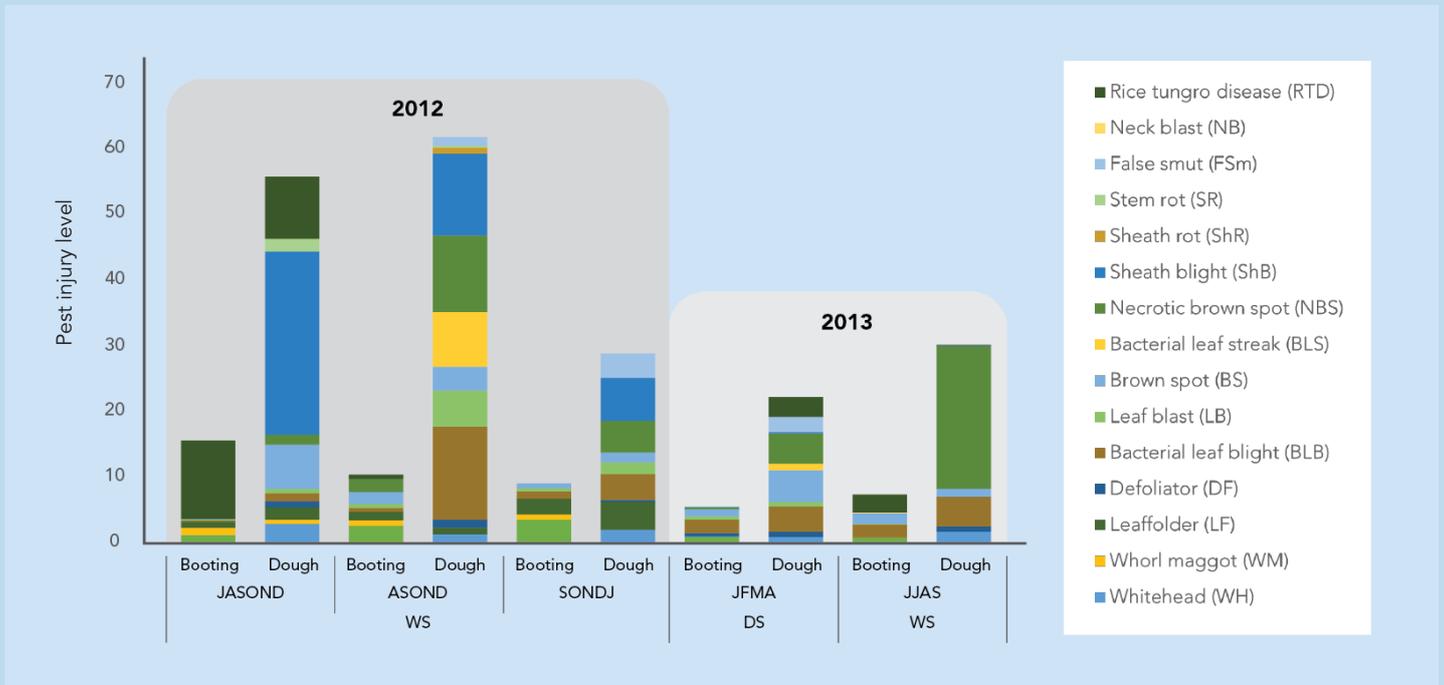


Fig. 1. Decrease in pest incidence.

- **Yields increased.** That is, from the baseline yield of 3.64t/ha in 2011 to 3.92, 4.32, and 4.49 in 2012, 2013, and 2014, respectively (Figure 2). The yield improvement could be due to adopting recommended practices, such as synchronous planting and integrated pest and nutrient management, which they learned from the FFS.
- In 2014, farmers proved their commitment to the resolution by planting different crops thereby breaking the longstanding practice of rice monocropping. More than 50ha were planted with corn, mungbean, and sweet potato. Crop diversification is a globally recognized mechanism to adapt to climate change impacts. It increases the farmers' chance to still earn some income should there be occurrences of weather extremes.

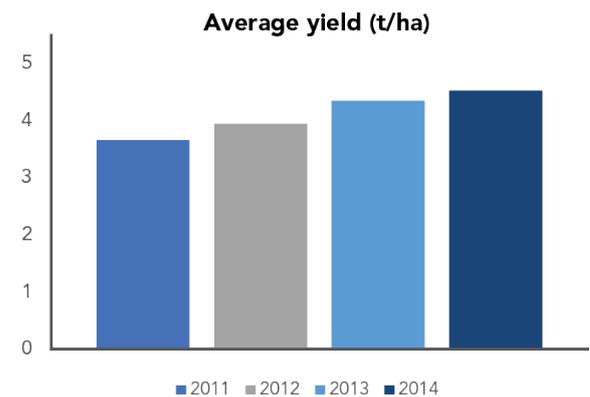


Fig. 2. Increase in yield from 2011 to 2014.

- As of this writing, the Municipal Agriculturist in Maria Aurora has confirmed that the farmers continue to abide by synchronous planting and other recommended practices. Likewise, rice yield has stabilized at 4t/ha under normal conditions.

CALL FOR ACTION

- **Incentivize collective action aiming to employ yield-enhancing practices.** This study shows that solid and concerted efforts among farmers themselves with the strong support of the LGU lead to improved crop yields. Hence, ordinances encouraging and incentivizing collective action to ensure that yield-enhancing practices are employed by a critical mass of farmers are in the right direction. The case presented above, i.e. farmers agreeing to plant synchronously, is a good example.
- **Train farmers to organize themselves.** The *Nagaget Nga Mannalon, Inc.* was instrumental in taking the lead and serving as a rallying point for farmers in this study. This group was organized from the DIMAES Irrigators' Association.
- **Promote the integrated farming system to farming communities to help farmers manage the risks of weather extremes due to climate change.** This study shows how farmers adopted the integrated farming system, which increased their adaptive capacity to climate change impacts. Moving toward this direction means that farmers are able to diversify their sources of income and livelihood, in general — a strategy that is needed given the climate change trends.
- **Adopt the use of farm machines.** The use of farm machines could facilitate the activities in rice cultivation. They will also address issues relating to inadequacy of workforce in the farm.

This policy brief is drawn from:

Corales, A.M., Rillon, G.S., Malasa, R.B., Martin, G.D., de Guzman, V.L.D., Patonona, D.M., Corales, R.G. (2015). Enhancing capacities to increase crop productivity and climate change resiliency: A community-based approach in Aurora Province, Philippines. *Philippine Journal of Crop Science*, 40 (2), pp. 66-73.

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ABOUT THE MATERIAL

Rice Science for Decision-Makers is published by the Department of Agriculture-Philippine Rice Research Institute (DA-PhilRice). It synthesizes findings in rice science to help craft decisions relating to rice production and technology adoption and adaptation. It also provides recommendations that may offer policy triggers to relevant rice stakeholders in search of opportunities to share their knowledge on rice-related products.

The articles featured here aim to improve the competitiveness of the Filipino rice farmers and the Philippine rice industry through policy research and advocacy.

This current issue shows empirical evidence on the advantages of community action in increasing yield and enhancing farmers' adaptive capacity to climate change impacts.

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