

# PhilRice Magazine

A quarterly publication of the  
Philippine Rice Research Institute



ISSN 0254-6132



VOL. 33 NO. 4  
OCT-DEC 2020



# About the cover

For 35 years, PhilRice has produced innovations to raise farm productivity, ensure rice on the table of every Filipino, and help our farmers become more competitive. This issue chronicles the journey of our rice science from its programmatic implementations to the ushering in of the New Thinking including Agriculture 4.0. The build-up toward PhilRice@35 (and after) is encapsulated in 3 Ks: *kaalaman* (knowledge), *kakayahan* (capacity), and *kaunlaran* (prosperity). It also articulates how PhilRice continually works on innovations to help the rice farmers achieve the life they deserve from their hard work and toil.

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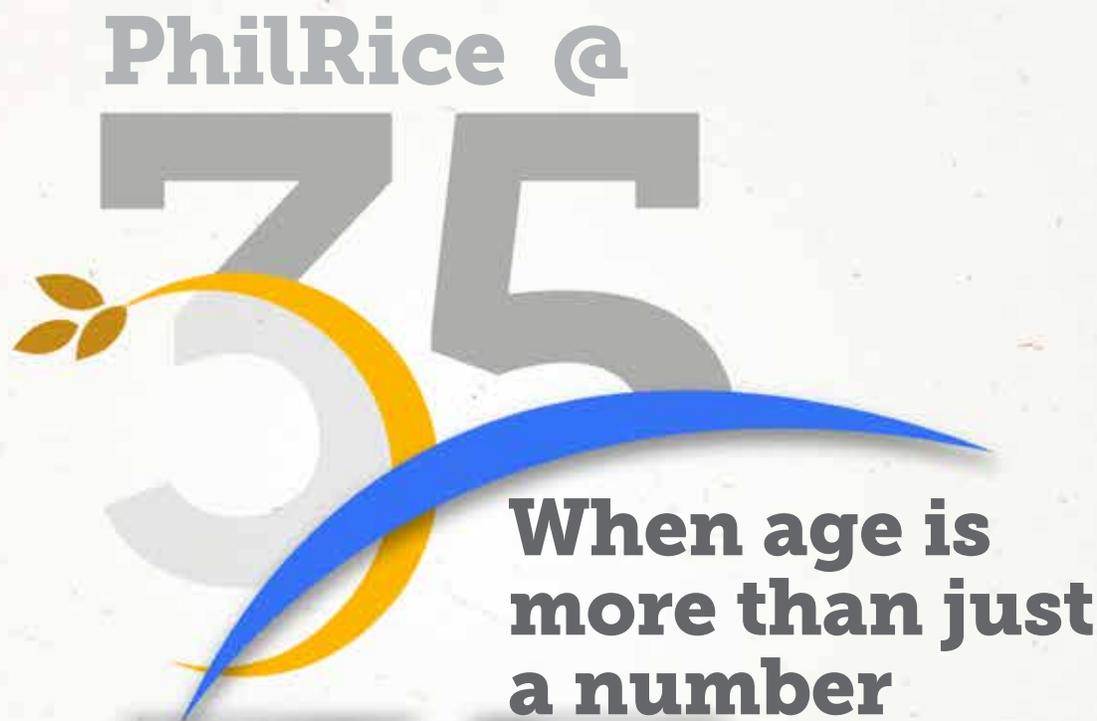


The editorial team encourages readers to photocopy and circulate articles in this magazine with proper acknowledgment. Everyone is also invited to contribute articles (600-800 words plus at least four photos/illustrations with credits) and suggest topics, or refer individuals and organizations engaged in rice whose stories are worth featuring. Please email [prii.mail@philrice.gov.ph](mailto:prii.mail@philrice.gov.ph) or mail to: THE EDITOR, PhilRice Magazine, Development Communication Division, Philippine Rice Research Institute, Maligaya, Science City of Muñoz, 3119 Nueva Ecija.

**WE WANT TO HEAR FROM YOU!**

Scan the QR code on the cover using your smartphone camera to answer our survey. We will give free e-load to 100 respondents.

# PhilRice @ 35



The graphic features the text 'PhilRice @ 35' in a large, bold, grey font. The number '35' is significantly larger than the text 'PhilRice @'. A stylized rice stalk with three golden leaves is positioned to the left of the '3'. A thick, curved blue and yellow ribbon sweeps across the bottom of the '35'.

## When age is more than just a number

*“Our 30s are when life is a perfect cocktail... ½ youth and ½ maturity.” (Anonymous)*

That is PhilRice today, as it celebrates its 35<sup>th</sup> year of establishment since 1985.

Accomplished in many ways, yet still full of zest for discovery and service to our farmers and the rice industry.

With the vision to help attain rice security, PhilRice core products include rice varieties. Viewed from the lens of varietal improvement work, PhilRice at 35 steps into a reflective time when age truly amounts to more than just a number. It can proudly count back at 90 plus rice varieties its own R&D managed to develop and get the nod of the National Seed Industry Council (NSIC) to approve and release from 1992 to 2019 for commercial cultivation. These include cultivars for irrigated and rainfed lowland production ecosystems. Under irrigated

lowland, the types include inbred rice, hybrid, glutinous, special, and rices for saline-prone and cool-elevated areas. Under rainfed lowland, the varieties are suitable for transplanting, dry seeding, upland, drought, or flood-prone conditions. Among its more recent products, NSIC Rc 160, Rc 216, and Rc 218, released in 2007 and 2009, have gained popularity among our seed growers and farmers.

Varieties, as incremental innovations from R&D, have enabled us to grow our country's *palay* production from 12.38M mt in 2000 to 18.81M mt in 2019, alone. The game-changing worth of varietal improvement can be further appreciated by how we've managed to push back on the constant threats of damaging insect pests and diseases, and/or the various abiotic stresses, exacerbated by changing climate.

The COVID-19 pandemic highlighted the link of the food system to the public health agenda. Even on this, our varietal improvement work is able to step-in with nutrition-sensitive interventions. New varieties such as the high-in-zinc NSIC Rc 460, bred by IRRI together with PhilRice, and rice that contains beta carotene can obviously meet some desired health outcomes among our people. And we will continue exploring along the healthier rice front.

“Age may wrinkle the face, but lack of enthusiasm wrinkles the soul,” says a Danish proverb. At 35, PhilRice is far from having wrinkles yet. But it certainly brims with enthusiasm spilling over to its future — believing that it is not the years in the Institute's life that count, but the life it changes for the better in those years.” •

## Lakbay Palay goes virtual

To minimize health threats engendered by the pandemic, our *Lakbay Palay*, a farmers' field day conducted every cropping season, was carried out online to continue promoting new rice and rice-based farming technologies, Oct. 14-16.

More than 20,000 rice stakeholders learned about new varieties, fertilizer management recommendations, farming apps, and farm machines through the social media.

Videos can be viewed on Facebook <https://www.facebook.com/rice.matters>, YouTube <https://www.youtube.com/channel/UCrQuUq42XOua96pvbUoC3ww>, and PhilRice website <https://www.philrice.gov.ph/lakbaypalay/>. • **CHARISMA LOVE B. GADO-GONZALES**



JAYSON C. BERTO

With the virtual *Lakbay Palay*, farmers can learn about modern rice technologies at their own pace or through the assistance of an extensionist (L).

## Mestiso 20 shines in Quezon

For three consecutive cropping seasons, farmers in Buenavista, Quezon have been enjoying high yields from Mestiso 20 (M20), a public hybrid variety that produces up to 234cav/ha. In a 100-ha total area planted with M20 this 2020 wet season, officials are expecting to surpass the 8t/ha harvest in the previous seasons.

"From 50ha in 2018 and 2019, we have added 50ha more as we witnessed its good performance even in rainfed areas. Due to its outstanding yield in the past, three cooperatives joined in this year's demonstration farm," Nanelle M. Quinto, rice coordinator in Quezon, said.

In 2019 wet season, the Hagonghong-Bukal Farmers Irrigators' Association reaped 8.3t/ha. This 2020, farmers from Buklod Buhay Multipurpose and Villa Maya Farmers' Cooperatives in upland and coastal areas joined the demo. • **ALLAN C. BIWANG JR**



LEMUEL VILLO

Nanelle M. Quinto believes that Mestiso 20 will improve farmers' lives in their area due to the variety's high yield.



JAYSON C. BERTO

## RCEF tries digital seed distribution

The Rice Competitiveness Enhancement Fund (RCEF)-Seed Program launched the Binhi e-Padala, a digital voucher system, to ease its seed delivery and distribution activities, starting October.

As one pioneer project in the agriculture sector that integrates financial technology in its operations, the system combines offline and online services in sending claim codes to farmer-beneficiaries through SMS-based notification, and in electronically recording seed claims and releases.

Powered by PayMaya, the system is being pilot-tested in select cities and municipalities in Nueva Ecija and Tarlac. Binhi e-Padala is expected to benefit around 5,000 farmers in the pilot areas. • **ANNA MARIE F. BAUTISTA**



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**Orlando B. Vea**  
Founder and CEO  
PayMaya Philippines

## Rice Research for Development (R4D) e-Conference held

Researchers, academicians, agriculturists, farmers, and R4D partners gathered online during the Ugnay Palay: 32<sup>nd</sup> National Rice R4D e-Conference, Nov. 4.

With the theme, “Sustaining High-Quality Rice Science in the Midst of Change,” PhilRice presented its strategic vision and two programs: Strategically Modernized and Robust Technologies for a Competitive and Secure Rice Industry (SMARTeR Rice), and the Rice Business Innovations System (RiceBIS). • **CHARISMA LOVE B. GADO-GONZALES**



JAYSON C. BERTO



PHILRICE PHOTO

## Cheers to our promoted scientist and DevCom Division!

The Scientific Career Council promoted Dr. Norvie L. Manigbas to the Scientist II rank, effective Jan. 30. He led the development of the first released direct-wet seeded variety, NSIC Rc 298. He pioneered breeding climate-resilient rice varieties using conventional and molecular techniques. Two elite lines he co-developed were released as varieties in Indonesia through an ASEAN collaborative project.

Meanwhile, our Development Communication Division received two recognitions in the 2019 Binhi Awards of the Philippine Agricultural Journalists Inc. This magazine was adjudged Best Agricultural Magazine while Golden Rice campaign was selected as Best Agri Info and Media Campaign. •

# Sharing seeds for good harvest

CHARISMA LOVE B. GADO-GONZALES

**G**rief and solemnity did not stop a farmer from promoting the benefits of certified inbred seeds among his fellow rice producers while attending a wake. Although mourning, Lorenzo M. Ballesteros Jr. seized the sober moment to explain why some seeds are better than others when asked about his good standing crop.

“We were using farmers’ seeds until I was convinced with the advantages of certified inbred seeds during my stint in PhilRice Isabela. Among the inbred rice varieties, I’ve planted the PhilRice-bred NSIC Rc 216. I also planted hybrid rice during dry season when I started to manage our farm,” the farmer and seed grower from Ilagan City, Isabela said.

Use of certified inbred seeds and hybrid rice varieties has been promoted by PhilRice and its partners since the Institute’s early years of operations. Aside from developing more than 90 varieties, PhilRice had

contributed 25 percent to the total new rices released in 2014-2017. As the practices and new varieties are promoted, growth in the country’s average rice yield is noted from 2.95t/ha in 1999 to 4.04t/ha in 2019.

A farmer for 27 years, Ballesteros said he uses certified inbred seeds because of their high seedling vigor and purity that result in uniform crop stand and high yield.

“Our harvest used to be 80-90cav/ha with exchanged or farmers’ seeds. When *tatay* entrusted to me his farm, I planted certified inbred seeds and gradually, yield increased from 100 to 120cav/ha. Combined with good farm practices like applying Trichoderma, a biofertilizer, I can harvest 150cav/ha depending on the variety,” the 55-year-old farmer disclosed.

PhilRice data show that use of high-quality inbred seeds had increased from 14% in 1996 wet season to 50% in 2016 wet season. The use of farmers’ seeds slid from 64 to 33% during the same period.

Earlier this year, farmer-recipients of inbred certified seeds from the Rice Competitiveness Enhancement Fund (RCEF)-Seed Program reported that their harvest was higher by 440kg/ha than the baseline yield of inbred seed users in the 2019 dry season. The yield increment, valued at an average price of P17/kg, translates to almost P7,500/ha additional income per farmer-recipient.

Ballesteros, who manages 15ha, said that he alternately plants inbred in the wet season and hybrid rice in the dry season.

“I’ve been planting hybrid since the hype of Mestizo 1 during the Hybrid Rice Commercialization Program in 2002. In Ilagan, usual harvests are at 52-77cav/ha. But with hybrid rice, we can harvest 165cav/ha provided that we also exert good farm practices,” Ballesteros said.

Recently, Ballesteros planted NSIC Rc 216 – a versatile variety because it is an offspring of

“Our harvest used to be 80-90cav/ha with exchanged or farmers’ seeds. When *tatay* entrusted to me his farm, I planted certified inbred seeds and gradually, yield increased from 100 to 120cav/ha.”

-Lorenzo M. Ballesteros Jr.

JAYSON C. BERTO

widely adapted PJ7 and Matatag 1, which were also developed by PhilRice. The variety averages 6t/ha, reaching a maximum of about 10t/ha. Maturing in 104-112 days, it is moderately resistant to brown planthopper, green leafhopper, and stem borer. The variety can adapt to stressful environments from the wet conditions of the Caraga Region to the dry fields of the Ilocos provinces.

Among the PhilRice-bred varieties, our Socioeconomics Division data in 2016-2017 showed that Rc 160, Rc 216, and Rc 226 were the commonly planted varieties in 42 provinces.

Lorenzo Ballesteros lives and farms by the maxim: “Whoever sows sparingly will also reap sparingly, and whoever sows generously will also reap generously.” As he shares the benefits of using certified inbred seeds and new varieties, he enjoys abundant harvest — a reflection of the country’s sustained increase in rice yield since 2010. •



MOHAMAD SAID B. GANDAWALI

RCEF-Seed Program distribution in areas covered by PhilRice Midsayap is facilitated by officials in the local government units including Efren F. Piñol, North Cotabato provincial administrator (L); Engr. Peter D. Salac, Kidapawan City councilor and committee on agriculture chair (3rd from L); Dr. Zaldy B. Boloron (center); and Dr. Sustinez U. Balanag, North Cotabato provincial agriculturist (R).

# BREEDING: Commitment to Excellence

DONNA CRIS P. CORPUZ

**B**reeding is, in itself, the history of rice.

Let's discover rice in a deeper perspective by looking at it through the lens of the pillars of PhilRice breeding — Dr. Oliver E. Manangkil, head of Plant Breeding and Biotechnology Division and retired pioneer breeder Thelma F. Padolina, now a research fellow. For them, rice is the beginning of everything, the very heart of what the Institute has been doing all these years.

## Genesis of breeding

Padolina informed us that the country's first breeding initiatives date back to 1901 through 1928. At that time, the breeding process was mostly conventional. The first varieties were developed based on acclimatization to make them adapt to the environment. Other commonly practiced breeding methods then were introduction, exploration, selection, and adaptation.

By the early 1960s, the just-established International Rice Research Institute (IRRI) became part of the country's breeding efforts until PhilRice's 1985 birth. Manangkil said that IRRI launched the green revolution through the development of modern rice varieties that are not photoperiod-sensitive, meaning, these could be possibly planted twice a year, compared with the previous one-season-a-year-planted traditional varieties.

IRRI developed lots of varieties along with UP Los Baños and the Bureau of Plant Industry. Varieties then were named after the institutions that bred them.

## More varieties

According to Padolina, PhilRice research has always been partnership-based and collaborative, especially with the programs of IRRI. In fact, she is one of the many experts trained under IRRI. One of the techniques she learned was called hybridization block, which entails the collection and crossing of parental lines of rice plants. Padolina brought this method to PhilRice and used it in developing varieties for different ecosystems.

"Before PhilRice, there were only three major ecosystems recognized — irrigated, rainfed, and upland. The rapid change in climate and diversity of environment called for the development of varieties for adverse ecosystems," Padolina said.

Manangkil added that PhilRice also played a huge role in the yield increase of locally improved rice. Traits that were important to the local environment were also incorporated in modern cultivars and varieties. These traits are very vital because the country has several rice-growing ecosystems that require specific characteristics.

"Say, for example, in the rainfed areas, we need drought-resistant varieties,

and saline-tolerant rices for areas near the beach or sea. Those are just some of the traits incorporated into our rice cultivars, which ultimately increased the yield in marginal areas," Manangkil said.

Manangkil also explained that the local breeding process was refined with the creation of modern varieties and critical rice-farming inputs such as fertilizers and irrigation. In the 1980s, about 40% of the total rice production in South and Southeast Asia came from modern rice varieties. The Philippines adopted these varieties faster than any other nearby country, which led to the breeding of varieties for the rainfed, upland, saline-prone, and cool-elevated ecosystems.

Moreover, PhilRice also championed the adoption of modern breeding tools starting from tissue culture to molecular approaches to gene-editing. The use of modern tools such as biotechnology and molecular biology paved the way toward precision breeding, which eventually accelerated varietal improvement.

"Before, it took a long time to breed; it's faster now, because it's already possible to screen varieties using markers, giving breeders a precise selection of plants harboring genes of interest. Under traditional breeding, it's impossible, but modern tools of breeding have made it possible," Manangkil emphasized.



PhilRice breeders develop new rice using traditional and modern techniques so varieties can cope with pests and diseases with progressive resistance.

## Excellent rice

The two PhilRice breeders both acknowledged and appreciated the IRRI-bred IR 64 variety known for its high yield and very good eating quality that even famous fastfood chains served it regularly. However, this variety was very susceptible to tungro, a disease that could wipe out an entire rice field and beyond. This compelled PhilRice to breed varieties with better eating quality, higher yield, and stronger resistance against tungro than IR 64. The Institute came up with the widely accepted NSIC Rc 160, Rc 216, and the special-purpose rice Rc 218.

Both Manangkil and Padolina agree that the first and most important indicator of an excellent variety is its ability to produce high yield.

"No variety is perfect and the challenge for breeders is to incorporate all positive alleles. But we put premium priority on the yield. In an importing country like ours, we prioritize yield over [eating] quality," Manangkil said.

Manangkil leads the National Cooperative Testing (NCT) and a nationwide project called the NextGen-Plus. One of the initiatives under the project is the Participatory Performance Trial and Validation, in which they talk with farmers to directly know their preferences and expectations. This project was conceptualized to increase farmers' adoption of modern varieties.

"In one of the studies we conducted in NextGen, we confirmed that farmers prefer high-yielding varieties. They also like varieties that mature faster because they can harvest earlier and save money. Farmers also like long and slender grains because they fetch good price in the market. Of course, high milling recovery and intermediate amylose content are also among the criteria in our farmers' preferences, and these are what we highly consider in our breeding programs," Manangkil shared.

Padolina added that breeders gather farmers' perceptions through candid conversations with them. Most of the times, she observed the pattern that farmers' preferences correlate with their major problems or concerns in their area, and what their income and the market dictate. That is why, it's important to make location-specific recommendations when it comes to breeding.

## Balancing act and collective efforts

After breeding with PhilRice for more than 35 years, Padolina revealed that one of the most important skills she learned as a breeder was turning challenges into opportunities.

"A breeder should be innovative and flexible. Right now, we cannot deny that our resources are becoming scarce, along with the changing climatic

conditions. We should go with time and learn to adjust. We have to be technologically savvy and take advantage of what the world is offering," the 71-year-old breeder advised.

As the Institute turns 35, the two pillars of PhilRice breeding believe that the trend now is heading toward the development of climate change-ready and machine-fit varieties.

"We need high-tech, mechanized farming to make the Philippine rice industry globally competitive. At the same time, we also need to look into natural farming and the use of renewable energy because we're heavily using fuel, which is expensive and scarce," Manangkil said.

With the opportunity to increase farmers' income using modern technologies in rice production, Manangkil and Padolina said that the road is heading toward innovative breeding methods, futuristic farming, and more interactive and collaborative efforts among experts in different rice production stages.

"Rice breeding today is actually an international effort and it involves scientists worldwide. I am happy that PhilRice is coping with the challenges and is upholding its vision and mission. We just need to enhance our interaction with each other and live up to the excellence that PhilRice has been known for since day one," Padolina concluded. •

# Impress your health-buff friends with these rice trivia

HANNAH MAE A. TOLENTINO

Imagine white and fluffy rice, boiled and steamed to your satisfaction. Paired with any kind of *ulam*, the combination is almost too good to pass up. But did you know that healthier types of rice are being pushed by PhilRice and other food agencies, and are being gradually accepted by more Filipinos? Brown, red, and black rices are easily available from the local farmers and in the supermarkets.

### **BROWN RICE**

The most common misconception about brown rice is that it is pigmented. It is simply any type or variety of rice, which is milled but unpolished. The bran is retained with the grain, which makes the rice more nutritious as it contains fiber, vitamins, and minerals. Compared with the glistening white rice, brown rice has a lower glycemic index, which helps in stabilizing blood sugar levels that lessens the risk of developing or exacerbating Type 2 diabetes.

While any variety of rice can be made into brown rice, softer varieties like NSIC Rc 160 are generally preferred. To cook, simply add two cups of water to every cup of rice. For softer rice, you may steep the brown rice in water for a few hours or even overnight before cooking.

### **RED RICE**

Known for the deep red color of its grains, red rice gets its color from an antioxidant called anthocyanin. Aside from the nutrients intact in brown rice, unpolished pigmented rice like red rice also contains high levels of antioxidants, which strengthen the immune system of people battling chronic lifestyle diseases such as cancer, heart problems, and others.

## **BLACK RICE**

Aromatic and nutty, black rice was once upon the olden times called forbidden rice because it was strictly and exclusively reserved for Chinese emperors, and no one else could even think of eating it. It was believed to promote health and longevity. Like red rice, its color is derived from anthocyanin, which also renders the red, purple, and blue color of fruits and vegetables. Black rice contains the most antioxidants among all the other types of rice enumerated in this article.

## **GOLDEN RICE**

Margarine-seasoned rice, Java rice, and Paella are among the most known yellow-colored rice delicacies. Golden Rice might not yet be familiar but it is a new type of rice that contains beta-carotene, a source of vitamin A, and gives the grain its golden color. This rice has yet to be commercially propagated.

Ordinary rice does not contain beta-carotene in its grain. That is why Golden Rice was developed through genetic engineering – to improve its nutritional value. It is intended to complement current strategies in the fight against vitamin A deficiency. In December 2019, Golden Rice was declared safe for use in food, feed, or for processing by the Department of Agriculture - Bureau of Plant Industry .

## **HIGH-IRON-AND-ZINC RICE (HIZR)**

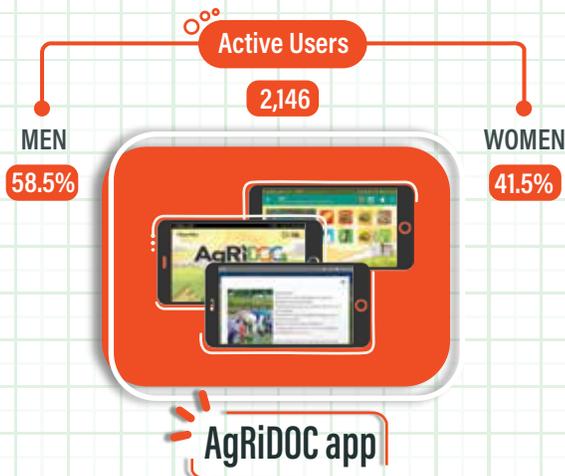
Another product of modern biotechnology that has yet to be available in the market is the high-iron-and-high-zinc rice (HIZR). Most of the iron and zinc in the rice grain are accumulated in the external part of the grain. After polishing, its iron and zinc content drops significantly. Using advanced biotech processes to develop HIZR ensures that the additional micronutrient content is embedded in the deeper part of the rice grain and is retained even after polishing. HIZR is being pursued as a novel, food-based approach to complement available strategies for reducing zinc and iron-deficiency anemia. •



# DIGITAL HELP IN RICE FARMING

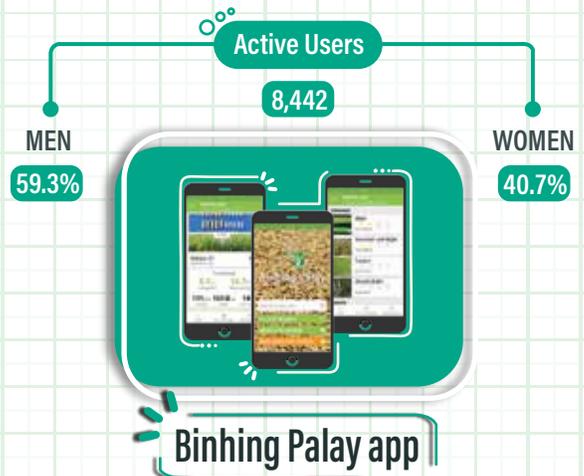
Compiled by: John Joward A. Martillana

Illustrated by: Zenny G. Awing



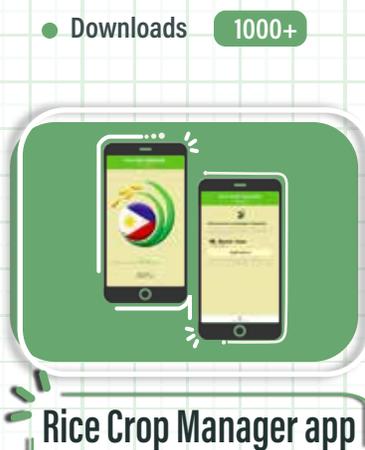
Download here: <http://bit.ly/AgriDocApp>

- Helps farmers in simple record-keeping and easy task-scheduling.
- Provides rice crop insights, geo-visualization, and instructions on the PalayCheck System.



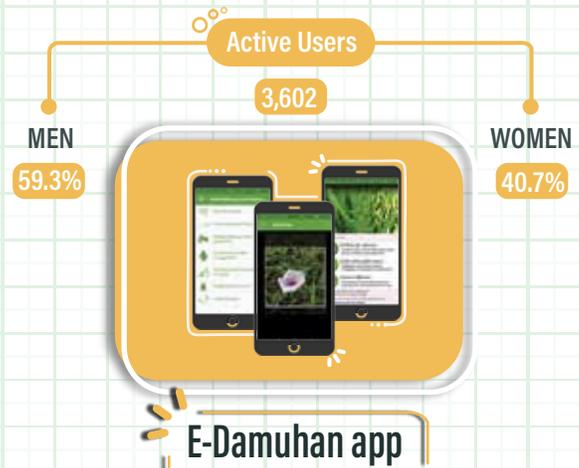
Download here: <http://bit.ly/BinhingPalayAPP>

- Helps farmers choose the rice variety to use for the season by providing a catalog of Philippine-released varieties.
- Provides full characteristic descriptions of each variety.
- Highlights the PalayCheck System's Key Check 1 that helps farmers choose the right variety and seeds.



Download here: <http://bit.ly/RCMforFarmers>

- Rice farm management app in which farmers record their farm activities and expenses.
- Sends out notification when it's time to irrigate, apply fertilizer, and monitor pests and diseases.



Download here: <http://bit.ly/eDamuhan>

- Assists in combating pest weed species in the rice field.
- Recognizes weed images and gives the descriptions and recommendations on how to control it. Farmers can browse its list of Philippine weed species, their scientific and local names, their impact on rice, and their recommended management.

In the evolving world of farming, rice growers may opt to use tools that ease their work. With the emerging farmer-friendly applications, fertilizer application, pest management, and record-keeping are made easier and simpler. A digital voucher system called Binhi e-Padala is also being pilot-tested, which will be used to ease seed delivery and distribution for rice farmers under the Rice Competitiveness Enhancement Fund-Seed Program. These apps, which are downloadable on Google Play, were designed with a clean interface and the most useful settings that even a farmer-newbie in ICT can easily understand. Farming is more fun, a touch-and-do activity.



We used to farm based on the experiences of my father and his fellow farmers. Their knowledge has to be updated because farming has changed a lot. I've been using farm apps as planting guide for a year now. The **Binhing Palay** app helps me choose the variety suitable for the season and for my field soil type. It also informs me on the varieties' maturity date, which is an important information for me. The **Rice Crop Manager (RCM)** helps me in knowing the right amount and type of fertilizer to apply during specific stages of my rice crop.

- **Monica E. Bescuer, Pampanga**



When I was starting, I just asked for information from my co-farmers and based much of what I did on self-experience. I also watched YouTube, researched from Google, and read booklets from the Department of Agriculture. Now, I get help big-time from **Rice Crop Manager, Binhing Palay, AgriDOC, and E-Damuhan** apps! The **RCM** sends me an SMS reminder when it's time to apply fertilizers; **Binhing Palay** informs me about available varieties in the market, those suitable in my location, and their pest tolerance and maturity days. I read farm recommendations on the **AgriDoc** and **E-Damuhan** apps.

- **Mark N. Cea, Pili, Camarines Sur**

I used to apply fertilizers based on general recommendations and experiences, and I relied on PhilRice reading materials and on the knowledge I gained from the Institute's **Lakbay Palay** in choosing varieties to plant. Using the **RCM** app helped me achieve my target yield. With the **Binhing Palay** app, as a seed grower, I can easily decide on the varieties to multiply and I can explain to farmer-customers the characteristics of the seeds they are interested to buy.

- **Nonilon dV. Aliaga, Nueva Ecija**

I usually refer to PhilRice and neighboring farmers who have better farm practices and harvest higher yield than me. My practices now were improved through the **Binhing Palay** app. Because I get to know the pest and diseases that commonly attack a rice variety, I can plan ahead on how to manage them.

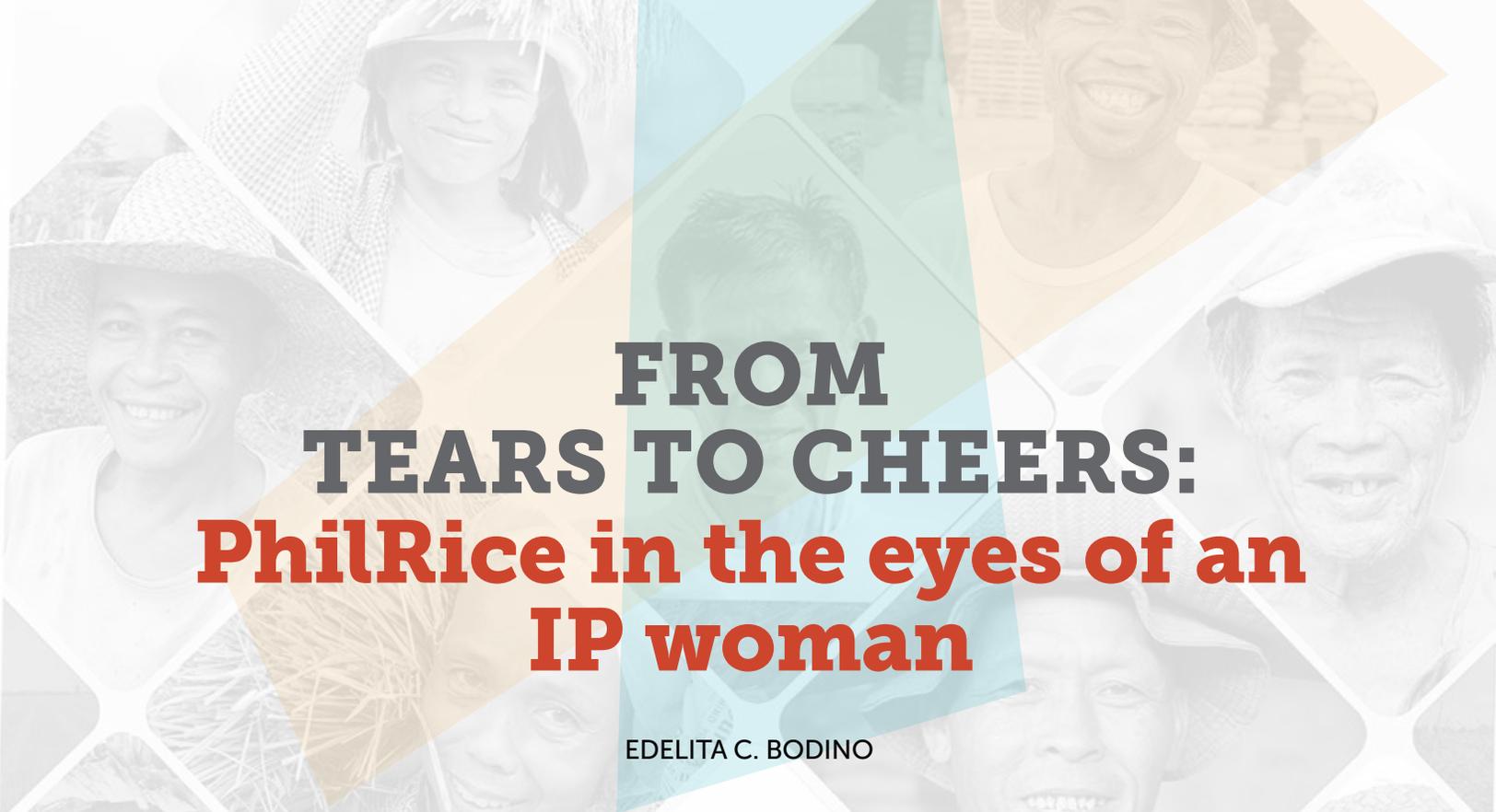
- **Catherine F. Donato, Bukidnon**

I was into conventional farming and copied my neighboring farmers' practices. Now, my way of farming is quite modern. I use the **AgriDOC** app in managing pests and diseases that may infest my plants, and the **Binhing Palay** in selecting rice varieties to plant as everything I need to know about rice varieties is in this app.

- **Andre Jake B. Montilla, Agusan Del Sur**

Before, I instantly applied fertilizer after planting rice and during weeding. But with the **RCM** app, applying fertilizer is now properly timed. My plants now get the right amount and kind of fertilizer. I also check on the app if I need to spray pesticide.

- **Syla G. Corpin, Biliran**



# FROM TEARS TO CHEERS: PhilRice in the eyes of an IP woman

EDELITA C. BODINO

I am Edelita Bodino, 54 years old. I belong to the Agta-Tabangnon tribe in Danao, Polangui, Albay.

As so-called indigenous people (IP), we are known for planting rice and coconut on the mountain slopes. These rices we call *Dinorado* and *Hinawa* are cherished for their delicious taste. They are our community's main staple food, but not our livelihood. We do not sell our rices. We only get cash from selling copra and weaving abaca footwears.

These colored rices have long been cultivated by our great grandparents up to my father, but it only took one strong typhoon to wash them out of our way of life. Our roof made of palm and coconut leaves was blown away. The rice seeds that we stored at home were soaked as a result. We did not have enough food, no seeds to plant, nor copra to sell because everything was destroyed. We were so devastated.

I do not remember anyone who came to help us then.

My husband decided to work in Manila because we almost had nothing. I remember crying so often over the misfortunes that happened.

After a few months, my husband could not earn enough money for our family's needs. It was when I decided to also go to the big city and look for a job. I was hired as a housemaid in Bulacan. I left my children to my mother's care. It was not yet time to receive my first salary but I asked my employer for an advanced payment because my kids back home didn't have enough food.

After one year, my husband and I decided to return to Danao. We resolved to plant rice and sell copra again. It was not enough but at least we could get by, and our family was reunited and complete.

## Help from outlanders

Sometime in 2016, I was told by a Katribu personnel (an office assigned for IPs) that someone from PhilRice was visiting. If not for that call, I would have hidden like we always do every time a stranger will enter our community. But because they asked permission from the office, I welcomed them.

We call her Ma'am Jing (Gina Nuñez of PhilRice Bicol). During our first meeting, she asked us if we would like to participate in their project. I said yes

but I was quite nervous. It was our first time to be involved in such activities. Later on, we fully opened ourselves to their teachings because we were convinced with their sincerity and patience to us.

Although our barangay was 21km away from the center of Polangui, Ma'am Jing checked on us at least twice every week. They would either ride a car or rent a motorcycle. They taught us a lot, but the *Palayamanan* [System] was probably the most useful subject that they presented to us.

We had our seminars on *Palayamanan* and production of organic fertilizers at the Danao viewdeck. I was then the caretaker of the viewdeck so I asked our barangay captain to allow us to conduct seminars there for free. As it was for the constituents, he agreed. There were 30-40 of us who attended the seminars on rice and vegetables, with lectures and demonstrations combined.

Eventually, we all learned to plant various crops. There were tomatoes, eggplant, chili pepper, ampalaya, potatoes, bottle gourd, cucumber, watermelon, pechay, radish, and mustard.



Indigenous people in Danao have improved their livelihood through the *Palayamanan* introduced to them in 2016.

They also said that there are beneficial and harmful organisms in the rice field. Ma'am Jing herself penetrated the fields to catch insects. Because of her enthusiasm, we did not hesitate to follow. However, because of lack of water resource, we could not push through with rice production.

They also taught us how to produce organic fertilizers. My favorite was the mixture of sweet potato leaves and molasses. They said it can be used to help plants produce more fruits. I like this because the ingredients came from our own plants, and there are no chemicals involved. It is safe for our land.

### Income at last

The *Palayamanan* approach was amazing because it allowed us to earn money faster. I don't exactly remember how much our household earned but I know that the project made an impact on us, like it did to our community members who consistently attended the activities. From the income we earned from vegetable and copra production, plus the income of my two children, we bought and raised 2 cows, 4 pigs, and a dozen of goats. From there, we had our house improved. Now, we need not bother collecting palm or coconut leaves because finally, the walls are concrete and our roof is made of galvanized iron

**“This time of pandemic, our learnings became more relevant because we have enough source of food from our backyards. It’s just that we could not sell it to our neighbors because all of us can now produce our own vegetables. It is both funny and fine. At least we won’t be hungry again.”**

sheets. I wish Ma'am Jing could come visit us again so she could see our house.

Aside from the income, I also learned to be more sociable to people especially to the non-natives. Needless to say, after Ma'am Jing's team came here, other public agencies and entities began opening doors for us, too. We are now being assisted by our local government unit, and most, if not all of us are now beneficiaries of the Pantawid Pamilyang Pilipino Program of the Department of Social Welfare and Development.

This time of pandemic, our learnings became more relevant because we

have enough source of food from our backyards. It's just that we could not sell it to our neighbors because all of us can now produce our own vegetables. It is both funny and fine. At least we won't be hungry again.

I will be forever grateful to PhilRice because of their compassion and patience to us, even if we are from the outskirts and are less educated. I thank the Lord because He led them to us. May the Almighty keep Ma'am Jing and the other PhilRice people safe always, especially during this time of COVID-19. •

*(As told in Filipino to Anna Marie F. Bautista)*

# FARMER-ADOPTED PRACTICES AND TECHNOLOGIES

ALLAN C. BIWANG JR.

PhilRice is teeming with rice technologies that allow farmers to diminish cost and gain higher yield. Aside from rice varieties, it has also invested its assets on nutrient management tools and machines that have proven to make rice production cost-effective.

It promotes these technologies across the country through training activities, demonstrations, IECs, and various digital platforms.

Let us take a look at the figures and real stories that show the adoption of practices and technologies promoted by PhilRice and its partners.

## NITROGEN APPLICATION GUIDE

To provide the right amount of nitrogen fertilizer for rice, a four-stripped "ruler" called Leaf Color Chart (LCC) was developed by PhilRice and IRRI.

Available at our branch stations and through PhilRice Products Facebook page, more than 50,000 LCC units have been sold to individual farmers, DA

regional offices, farm schools, and local government units since 2014. A 2016 study showed that 11% of our farmers have used LCC since 2011.

From this device, an upgraded version called Leaf Color Computing Application was developed and is now available on Google Play Store ([bit.ly/3hIU4gt](https://bit.ly/3hIU4gt)).



LCC was introduced to us in 2008 under the PhilRice-JICA project. Since then, I always check the greenness of my crop's leaves using LCC before applying urea (46-0-0) especially during wet season. This way, excessive nitrogen application was avoided, and pest and disease infestations were prevented.  
**Nicolas Dela Rosa, 63, Nueva Ecija**

## DIRECT SEEDING MADE LESS COSTLY

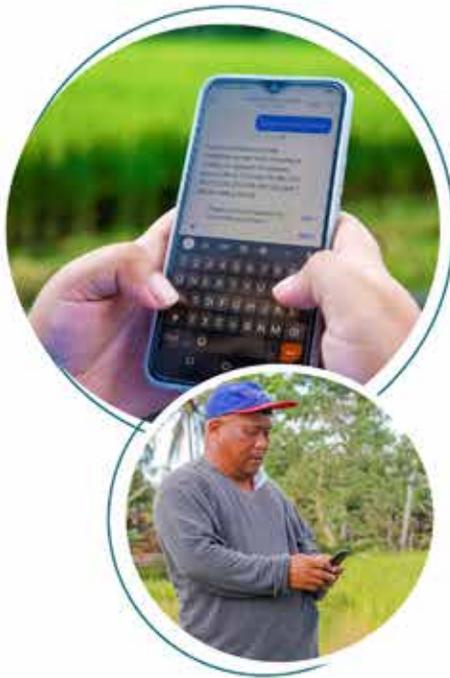
Broadcasting excessive seeds remains a malpractice among many of our rice farmers, thus, the drumseeder machine for direct-seeding areas was developed. Designed by PhilRice in partnership with Inca Plastics Philippines, the machine has proven to be effective in reducing seeding rate, risk of lodging, drudgery, and labor cost.

More than 900 units of the lightweight drumseeder were released since 2014. Regions with most buyers include Central Luzon, Bicol, Western Visayas, and Zamboanga Peninsula.

(The precision seeder is being pilot-tested to make seeding more efficient.)

Since I started using the drumseeder, I observed that more tillers are developing owing to its wider distance compared with manual broadcasting. Seeding rate was also reduced from 80kg to 40kg per hectare. It's a must-use machine for my co-farmers.  
**Ricky Saligumba, 50, North Cotabato**





## RICE EXPERTS ARE ONE TEXT/CALL AWAY

Owing to limited number of rice technologists in the country, we have sustained our ICT platform called PhilRice Text Center (PTC), which was established in 2004 under the Open Academy for Philippine Agriculture project.

From 2017 to 2019, an annual average of 18,300 active texters inquired about varietal characteristics, seed availability, and pest management practices.

In 2020, the Development Academy of the Philippines recognized the PTC for its client-centric service, focusing on the country's rice farmers.



I am guilty of applying basal fertilizer prior to planting. When I had a conversation with a PTC agent, that's the time I learned that it's not necessary. First fertilizer application should be done 10-14 days after transplanting.  
**Leonardo Hormachuelos, 53, Bohol**



## ONLINE HELP FOR FARMERS

With 74 million of Filipinos on Facebook in 2019, rice farmers are also now online as PhilRice continuously receives messages about rice farming. Our Facebook page direct messages data from 2018 to 2019 showed that more than 7,000 inquiries received are mostly on availability of seeds, agronomic characteristics

of varieties, and pest and nutrient management.

In 2020, the most followed DA-attached agency on Facebook continuously attracted mostly farmers with the January to April data showing that at least 75% of its clients are rice growers.



I am grateful for your service. Your responses through this Facebook page helped me achieve higher yield this 2020 dry season. I hope you continue this service by sharing useful information to us.  
**Mylene Acedo, 44, Pampanga**



## ADOPTED BY FARMERS: 10 TECHNOLOGIES AND PRACTICES THAT PHILRICE AND ITS PARTNERS ENDORSED

Rice Farming Technologies/Practices (3,200 farmer-respondents in 42 provinces)	Used in all ecosystems (2011-2016)
No high/low spots after leveling	81%
Threshing of <i>palay</i> 0 to 1 day after harvesting	79%
Use of certified inbred seeds	76%
Not burning rice straw in the field	64%
Synchronous planting	60%
Harvesting of <i>palay</i> when 80% of grains are ripe	58%
Rice straw incorporation in soil	53%
Replanting within 7 days after transplanting	51%
Controlled irrigation	48%
For semi-wetland preparation: dry rotovating	42%

\*Farmers have used the technologies at least once from 2011 to 2016.

Source: PhilRice Socioeconomics Division, 2016-2017 Rice-Based Farm Household Survey (RBFHS)

# COMBINING AGRICULTURE, AUTOMATION, ART, & ADVOCACY IN THE RICE PADDY

Pamela V. Carbungco

In these times when more young Filipinos are needed to venture into agriculture, PhilRice uses art and automation to pique their interest back into farming.

In 2015, our FutureRice Farm led by the late Roger F. Barroga started creating rice paddy artworks. Using green and purple-leaved varieties, FutureRice drew images of famous personalities on the rice paddy.

These were created using the anamorphosis technique so that visitors can view any image in perfect trajectory from the ground level. The image was then pixelized to create a planting guide, in which one pixel was equivalent to one rice plant. Every season, at least 40 PhilRice men and women worked together to plant the pieces of rice paddy art.

This novel and subtle way of merging art and agriculture was employed to showcase creativity and innovativeness in rice farming to the Filipino youth and the public.

## FutureRice™

5-hectare agritourism farm in the Philippine Rice Research Institute. Home to rice paddy artworks.

Science City of Muñoz, Nueva Ecija

FOLLOW



Farm  
Tourism



Smart  
Farming



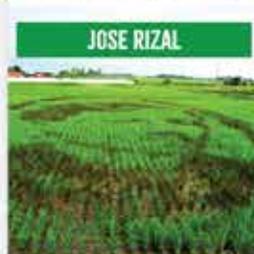
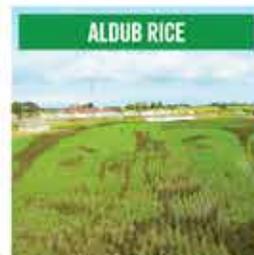
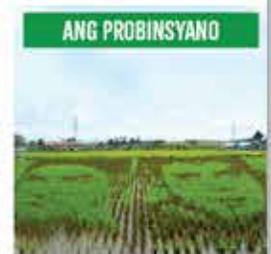
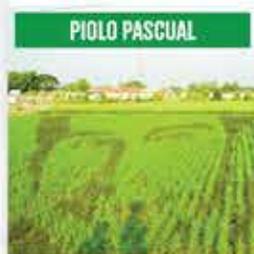
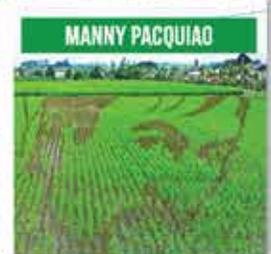
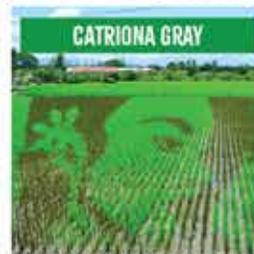
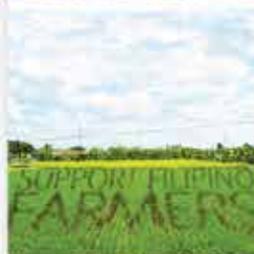
Rice-based  
Technologies



Farm  
Machines



Hands-on  
Learning



 **futureicefarm**



**Maine Mendoza**   
@mainedcm

Wow this is super cool! Galing!!!

**Ryan Agoncillo** @ryan\_agoncillo



LOOK @mainedcm  
@aldenrichards02!  
ALDUB rice farm @...

11:49 pm · 15 Mar 16

**futureicefarm** Maine Mendoza's reaction after seeing the #AIDubRice has gained 29.1K likes and 10.5K retweets as of writing.

 **futureicefarm**



**futureicefarm** "I trust that [the rice paddy art] would inspire the youth about agriculture. It displays our creativity at drawing attention to the agricultural sector," said Senator Grace Poe.

 **futureice farm**



**futureicefarm** The FutureRice Farm was featured in ABS-CBN's Just Love Araw-Araw Summer Station ID when former Rice Ambassador Piolo Pascual was featured in the rice paddy art.

## CREATING THE FUN IN AGRI

Interest in the rice paddy art and FutureRice Farm "boomed" nationwide when the Al-Dub Rice was showcased in 2015. In just a month, FutureRice's post about Al-Dub Rice (of Eat Bulaga fame) garnered almost 9,000 likes and 87,000 reach. Aside from just appreciating photos in social media, the public visited the Farm to view the rare artworks and then learn about modern farm technologies.

"This is now part of my bucket list – to plant rice! This project is exceptional. You just encouraged people like me to be more involved in rice planting," one netizen said on Facebook.

Aside from Al-Dub, the rice paddy art gimmick has featured known personalities including Fernando Poe Jr. and Coco Martin of *Ang Probinsyano*; Kathryn Bernardo and Daniel Padilla; Miss Universe Catriona Gray; Philippine Pop Princess Sarah Geronimo; and Piolo Pascual. The rice paddy art has been picked up by national TV and newspapers, further spreading its message that agriculture can be fun, innovative, and creative.

"This is a good advocacy in encouraging us to support the agricultural sector. I hope we can raise the level of discourse as to how we can help improve the lives of our farmers," said Senator Grace Poe when she visited PhilRice in 2016 to view the *Ang Probinsyano* rice paddy art.

## CONVINCING THE YOUTH TO GO AGRI

Through the rice paddy art, the youth learned that agriculture is not all toil and sweat. Modern technologies such as the use of drone and automation devices make farming easier and more glamorous.

"Rice farming is not only for agriculture graduates. It transcends all fields. The FutureRice Farm taught me that even people in information technology can help our farmers by developing mobile applications suited for farming," said Jan Arnel P. Landingin, student from the nearby Central Luzon State University.

The rice paddy art also raised awareness and appreciation for our rice farmers and the important role they play in everyday Filipino life.

A netizen posted on Facebook: "*Sobrang nakakaiyak, a good sign na kapag kakain ka ngayon ng kanin, iisipin mo kung paano pinaghihirapan yun ng mga magsasaka.*"

Four years after its launching, it's heart-warming that the artworks featured in the paddies of FutureRice Farm still continue to spark interest in sustaining engagements in agriculture.

# Since the 1960s Long-Term Soil Fertility Experiment

PhilRice's Longest Experiment

Infographics by: Perry Irish H. Duran  
Subject Matter Specialist: Wilfredo B. Collado

The Long-Term Soil Fertility Experiment (LTSFE) on the continued use of inorganic fertilizers in lowland rice at PhilRice CES has been ongoing since 1968 at the then BPI-Maligaya Rice Research and Training Center (MRRTC). It is one of the longest-running experiments on double-cropped rice in the world. Through LTSFE, changes that have had or will have dramatic effects on soil fertility are monitored. What has it found out and how has it served our farmers during the past five decades of experimentation? Read up and see!



## AU NATUREL

The inherent nutrient-supplying capacity of the soil and the lowland rice system in Maligaya was able to support a production of 3t/ha.

## MAX OUT

Complete nutrients application plus good crop management practices are a must in achieving 9t/ha of natural crop yield. This was proven by reversing the declining trend of those with incomplete nutrients for 10-15 years with the application of complete fertilizer and sustaining a high yield of 7-9t/ha.

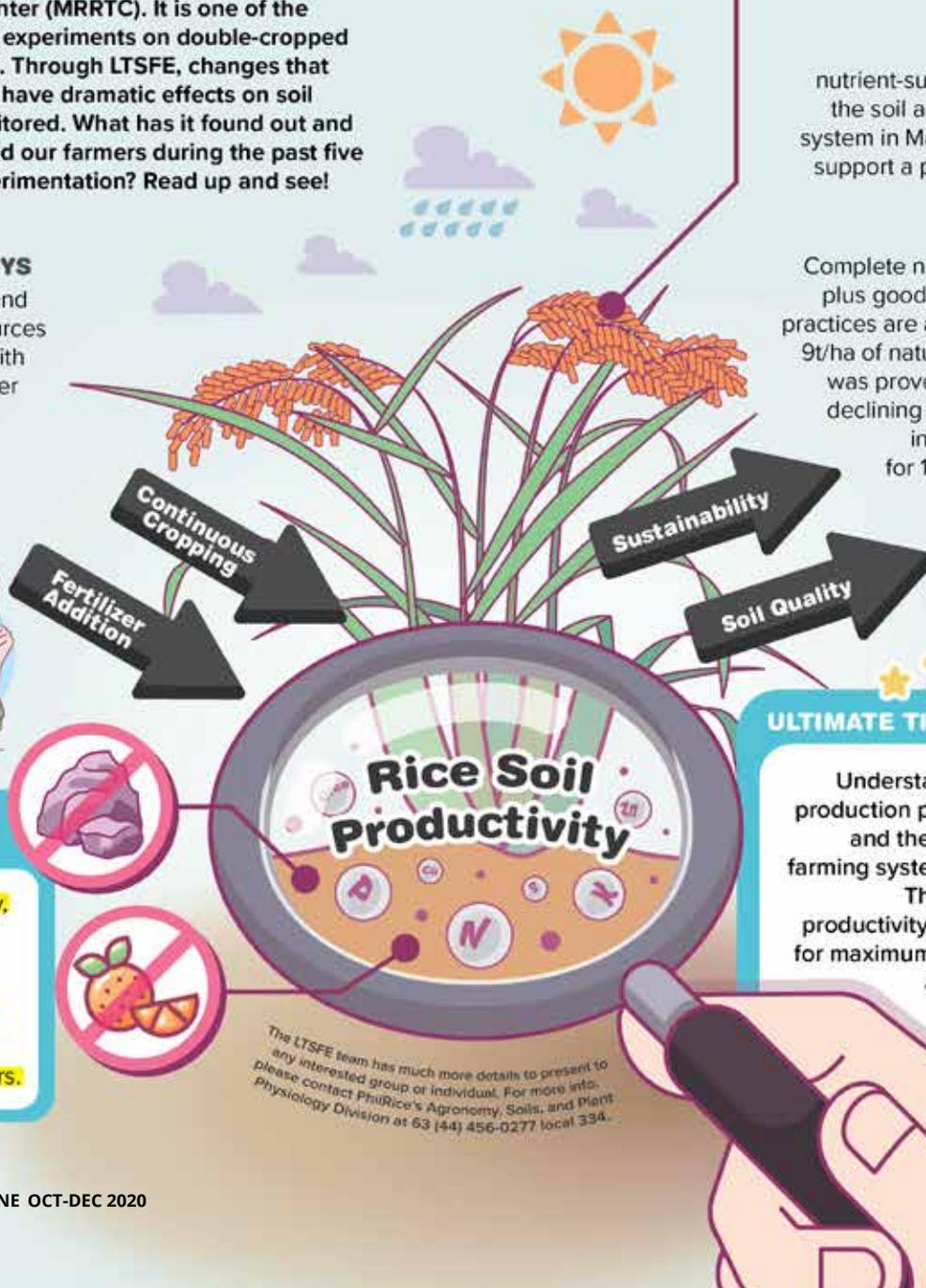
## FERTILITY KEYS

Irrigation water and other natural sources supply the soil with nutrients. Fertilizer application supplements the nutrients.



## CORRECTING MINDSET

In terms of quality, the soil neither hardens nor becomes acidic after a long-term application of inorganic fertilizers.



## ULTIMATE TIP FOR FARMERS

Understand changes in the production potential of an area and the management and farming system of the rice crop. This will help sustain productivity and fertility of soil for maximum economic benefit and environmental protection.

The LTSFE team has much more details to present to any interested group or individual. For more info, please contact PhilRice's Agronomy, Soils, and Plant Physiology Division at 63 (44) 456-0277 local 334.

# Serving farmers wherever they are

COMPILED BY:  
CHARISMA LOVE B.  
GADO-GONZALES

Each region is unique, not only politically but also in terms of growing rice. This is why PhilRice has created seven branch stations nationwide that will address the specific needs of farmers in their respective areas of coverage.

These are: Midsayap in December 1987; Agusan, August 1989; Los Baños as principal office in March 1990; Isabela, May 1991, Batac, January 1999; Negros, July 2003; and Bicol, January 2010.

It also has a field office at the Central Mindanao University campus in Bukidnon operationalized in May 2001. Bilateral agreements establishing satellite stations in Sta. Cruz, Occidental Mindoro and Catarman, Northern Samar were also sealed in December 2014; that in Zamboanga City, done in December 2017. PhilRice also serves thru its Text Center: 0917-111-7423, and social media.

Adopters of technologies from the stations testified on how the new practices have helped them.

## Midsayap: IPM Center

Integrated pest management (IPM) requires united efforts to create

“Farmers can increase their yield and income if the proper management and guidelines on rice production are followed. Actual demonstrations of the Minus-One Element Technique (MOET) kit help farmers become more accepting of the innovations and break away from traditional practices that are no longer efficient.”

- Bryan S. Dizon



JOHNNY C. ESCOTE

ANTONIO E. ESTRIBOR



TIRSO A. DAHUYA

ripples of impact on farmers within a community. This is the reality for Johnny C. Escote, 53, and Antonio E. Estribor, 72, both from Midsayap, North Cotabato.

Their rice areas being adjacent often bring them together checking on their fields' helpful and harmful insects, which they learned from the Institute.

“Since attending farmer field schools conducted by PhilRice and partner agencies, we have encouraged other farmers to follow IPM practices. We were not disappointed since then,” Escote said.

Fellow farmers look at Manong Johnny and Tony as their PalayCheck guides — adopting their planting schedule,

dates of applying fertilizers, and the need to judiciously use pesticides. Besides choosing high-quality seeds, the tandem enjoins farmers in their community to rest their fields (fallow period), and follow synchronous planting. They attested that crops in their 19-ha rice area were established within 15 days.

“We warned our fellow farmers who among them would have the largest pest population owing to early or late planting. Our forecasts were correct; so they were convinced to join,” they said.

## Agusan: INM center

Tirso A. Dahuya, 64, of RTR, Agusan del Norte, maintains as a tenant a



BRYAN S. DIZON



AGUSTIN R. PEREZ



NOEL D. GALUT

3-ha rice area, which was also chosen as a technology demonstration site of the Rice Crop Manager (RCM) in 2018. After two consecutive cropping seasons, Mang Tirso and the owner already enjoyed the good impact it brought on their yield.

"I used to wonder why the rice leaves turn into red even if I already put an ample amount of fertilizer. Then, we learned from the RCM that too much and untimely fertilizer application may result in bacterial leaf blight and yield reduction," Dahuya said.

The RCM provides farmers with personalized rice crop and integrated nutrient management (INM) recommendations. It aims to reduce production costs, increase yield and net income, and facilitate a professional extension service deploying appropriate advice at the right time to farmers, through information and communications technology (ICT).

"We are very grateful for this technology because our yield increased from 60 bags (60kg/bag) to 80 bags/ha since we followed the RCM recommendations. It teaches us the right element, amount, and timing in applying fertilizers," he said.

Dahuya lamented that he used to content himself with only 12 sacks of rice as share before, but now, he

brings home 30 sacks. He vowed that he will continue to follow the RCM recommendations and is open to accept new technologies to accumulate knowledge in rice farming.

### Los Baños: Nutrient Management

A farmer and now acting director of Javenri Harvest Farm School, Bryan S. Dizon recognizes the importance of Minus-One Element Technique (MOET) kits on minimizing the expenses of Palawan farmers. The diagnostic tool, which determines the nutrient levels of rice soils, helps farmers practice the effective application of fertilizer on farmlands.

"Palawan farmers usually apply complete fertilizers, but that should not be the case. With MOET kits, farmers can make an informed decision by knowing what specific nutrients are deficient in their area, thus buying only the necessary fertilizers," Dizon reasoned out.

The farm school's site in Narra is known for its highly acidic soil caused by excreted of the previously operational mining center adjacent to them.

Obstacles brought about by poor land conditions are addressed through continuous training, which helps farmers understand the science behind soil productivity.

"Farmers can increase their yield and income if the proper management and guidelines on rice production are followed. Actual demonstrations of the MOET kit help farmers become more accepting of the innovations and break away from traditional practices that are no longer efficient," Dizon said.

### Isabela: Hybrid Rice Center

Agustin R. Perez Jr, 45, of Kalinga, was not familiar with hybrid rice farming; but when a trusted old friend introduced hybrid to him, he did not hesitate to try.

A taekwondo instructor and farmer, Perez had always been persistent in improving his family's life. While he was still new to hybrid rice production, he trusted in the Information, Education, and Communication (IEC) materials that were given to him and in the assistance from PhilRice Isabela. These helped him learn how to manage his crops, which resulted in abundant harvests.

He used to plant private seeds but when he tried the public hybrid variety introduced to him by the station, he was astonished with the outcome.

"I am really amazed with hybrid rice, especially NSIC Rc 204H (Mestiso 20)," Perez said. In 2018, Perez harvested more than 200 bags (58-60kg/bag) in a hectare and gained almost P200,000.



MANUEL B. ESPINO



BOBBY M. ABAD (LEFT)

A father of two, this has been a big blessing for him considering that it was his most bountiful harvest for the past five years.

He also sees that in the next five or ten years, more farmers could improve their lives by engaging in hybrid rice farming.

### **Batac: Center for Dryland Agriculture R&D**

As a rainfed rice farmer, Noel D. Galut of Ilocos Norte is concerned about water and labor scarcity in their area. These were addressed by the Multi-Purpose Seeder (MP Seeder) for direct seeding introduced to him in 2018. MP Seeder is a device attached to a hand tractor that direct-seeds rice, corn, and mungbean.

“Back then, it would take four persons hired for P300 each per day to plant half a hectare. But with the MP Seeder, I can now plant my 0.80ha by myself. Not only did it save me on labor but my seeding rate was also reduced from 90 to 60kg. To us small farmers, this is substantial,” Galut said.

He also said that his yield increased to 4.5t because of the better growing environment as the use of

MP Seeder resulted in correct plant spacing and straight rows.

With Galut’s experience in direct seeding, some of his peers have emulated him.

### **Negros: Specialty and Premium Rices**

Manuel B. Espino, 47, of Bago City, Negros Occidental, has been farming for 10 years when he tried two varieties — one recommended by the station for national planting, and the other location-specific for Western Visayas.

With proper rice farming technologies, he harvested 120 bags (46kg per bag) of NSIC Rc 160, up by 10-20% from his usual haul. PSB Rc 10, recommended for their region, showed resistance against fungal diseases.

“Although I was hesitant at first to try these varieties, I will use them again next cropping as they are of good quality and pest-resistant,” Espino said.

### **Bicol: Center of Rice R & D for Climate Change Adaptation**

For almost 25 years, Bobby M. Abad, 41 of Magarao, Camarines Sur, has been reaping only 300 bags (50kg/sack) from his 5-ha rice field. He thought that his yield will no longer improve as his farm is 150m near the coastal line. For lack of other choices, he had been planting an irrigated lowland variety.

Through a project collaboration, Abad at last received free seeds of NSIC Rc 338 (Salinas 17) — a PhilRice-bred variety for saline areas. Now, his yield averages 400-500 bags in his 5ha. Bobby, who also multiplies the variety, shares the seeds to his colleagues in the Rainfed Purong Farmers’ Association.

“We are very thankful for government programs that benefit us. We now have enough supply of high-quality seeds ideal for our salty fields,” Abad said.

PhilRice indeed makes itself relevant by bringing down to the rice fields technologies that truly connect with farmers. Its reasons for doing so continue to abound. •

With reports from Mohamadsaid B. Gandawali, Sylvia Therese C. Quiring, Marelie D. Tangog, Myrtle Ann G. Valenzuela, Aileen Shaye C. Fontanilla, Deejay Jimenez, Vanessa A. Tingson, and Michael L. Satuio



1991



2009



2010



2012



2013



2019

# PhilRice Tower:

DONNA CRIS P. CORPUZ

Just like how rice plants endure the wind and remain firm in the unpredictable changes of seasons, PhilRice's vision of a rice-secure Philippines will always stand tall. But it isn't only our vision stated in many ways that stood tall all throughout these years.

At the Institute's Central Experiment Station (CES), a tower stands erect and carries the name of the Institute. This edifice that stood with the CES since its establishment has served as guidepost for visitors to locate PhilRice even from a distance. More than that, the tower has become an emblem of strength, of history, and of the challenges that the rice industry has struggled with and conquered the past 35 years.



2014



2015



2016



2017



2018

# Symbol of resilience, hope, and innovations



Experts' accounts say that the Tower was one of the first structures that were erected during the construction of the CES. It eventually became a figure that beacons important events and celebrations in the Institute. It was in December 1991 when then young and new staffer Dr. John C. de Leon, now PhilRice Executive Director, started the tower-lighting ceremony that has evolved into an institutional tradition.

As the years passed one after another, the ceremony grew into a community event rather than an exclusive activity for employees. The tower-lighting spectacle sparked hope and a whole new light of direction and goodwill not just for the PhilRice clan but even for the entire community of Maligaya, its generous host barangay, and other fun-loving citizens and "subscribers".

Every year, at the start of December, the same festive spirit fills CES and

the whole community — a few thousand people spontaneously and synchronously counting backwards from ten, until the giant tower enkindles and subdues the darkness. A fireworks display, Christmas carols and ditties, live performances, and laughter of free entertainment then follow through the evening, unmindful of the "patay-sindi" atmosphere that heats up together with the holiday lights.

New and returning visitors and staff alike may see the tower as their endpoint — the mark that tells them they've reached the country's epicenter of national rice research. Yet, for the Filipino farmers, PhilRice personnel, leaders, and stakeholders, the tower will always be their "point A", a home. No matter where they go, no matter what they reach, they will always come back looking up at the tower with pride. For as long as the PhilRice tower shines, so does the hope for every Filipino farmer and probably the whole rice industry. •

# Sustaining High-Quality Science in the Midst of Change

MARY GRACE M. NIDOY

## How did PhilRice change throughout the years?

Change is always expensive, and that you either pay for achieving it or pay for not having it. I'm glad to note that the Institute has mostly changed for the better in its existence. And that is good to know as it turns 35 this year (1985-2020).

## What lessons did you learn in the private sector and how do you want to apply these in the public service?

It's almost a cliché, but really over there we had to earn our keeps. Thus, the relentless drive to develop and push technologies to the market and create impact. Of course, it is from the sales of our products that we were able to plow back funds to continue with R4D and, almost needless to say, with our jobs. Innovation constantly drives competition for market share and the desire to reach the market first. Then you see the connection with the need to build high-performing teams for determined product development execution, results orientation, and so forth. Business process ownership was important, and so was perspective — like a global perspective; also, the practices around compliance, employee health, safety, and the environment as part of our values.

I know there are many parallels already in our ways of working or culture here at PhilRice, as well as in our mindset. Managing the change for a few other things we need to do for our continual improvement, to my mind, is really a top-to-bottom concern.

## What has been the most challenging part so far as ED?

Managing stakeholders, perhaps. But I just read in an article (by the Center for Creative Leadership) that this is a common leadership challenge. It is certainly helpful to know that the experience is not really unique or an isolated one.

## How would you describe your leadership style?

I take time to consult and ask around before deciding. So perhaps in that sense you can say I am democratic. I tend to also see more on people's potentials, so you can throw in a coaching element in the style mix. But I have learned to view work and its seasons of leadership more as a calling or a mission rather than just a job. That is probably why I thoroughly enjoyed reading 'The Way of the Shepherd' (by Kevin Leman and William Pentak).



## How do you want to steer the Institute with its added mandate and major role in the Rice Competitiveness Enhancement Fund (RCEF) programs?

Viewed from the Research-Development-Extension continuum, RCEF brings us actually to where we'd like the products and outputs of our R4D to be — in the hands of our farmers and growers. All the seeds and knowledge products, the machines, and the training programs add up to make our rice farmers and the industry competitive under a liberalized rice trade work environment. Although seed distribution (as a big part of the development, propagation and promotion of inbred rice seeds mandate under RA11203) is highly operational, our experience so far in doing RCEF, alongside our co-implementers, has been positive though we're really an R4D agency.



Dr. John C. de Leon started as a 20-year-old junior researcher at PhilRice in 1990 and stayed for 20 years until he left to join the private sector.

Seasoned with added experience and new perspectives, his professional journey steered him back home where it all started.

"It's interesting that although I managed to glance at so many new faces that fateful day in August last year, the place remained so familiar to the feeling. *Sino*

*ba ang mag-aakala?,"* Doc John, as he is fondly called, reminisced.

Like any home we have come to love, PhilRice still felt so welcoming for Doc John, "both the people and the place".

This time, as the Institute's Executive Director (ED), he is ready to take on the challenges and lead PhilRice to greater heights. Here, he shares his reflections and vision for the Institute as it celebrates its 35<sup>th</sup> Anniversary in November this year.

## **We just had our midterm review. What have you observed so far in terms of the results in relation to our strategic plan?**

First, strategy has to be clear and communicated consistently, steadily, and frequently to our leaders and managers, and of course to our employees, to be successful. Its execution should give us all a sense of cause and purpose, and see it as a team endeavor. This is a must-win for us, so to speak. Now to the midterm review: I am very glad, of course, that I was able to participate in many of the sessions of the different sectors. I've been looking forward to being part of the reviews since I came back. I actually shared my thoughts after the reviews in our ManCom meeting on August 4. The presentation was titled "Business as Unusual at PhilRice: Rejoinder to the Mid-term Sectoral Reviews".

Among other things, I think we need to focus on technology push and the scaling of our ready and competitive products. We need to have clear priorities from our products and outputs portfolio that deliver increased productivity, cost-effectiveness, and profitability outcomes. We need to be more anticipative and drive Agri 4.0 further (through Strategically Modernized and Robust Technologies for a Competitive and Secure Rice

Industry or SMARTer Rice) and rice-based agro-enterprise (through Rice Business Innovations System or RiceBIS). We also need to strengthen our branch stations, automate more services, and grow our corporate income. But I am glad that we have quickly aligned our Strategic Plan (2017-2022) with the 'New Thinking' and its relevant paradigm shifts under the new DA leadership.

## **What do you think is PhilRice's greatest innovation?**

Varieties come to my mind if we talk about incremental innovations. I say this not because I'm a plant breeder. But if we care to look at how our *palay* production has increased from 2000 through 2019 alone, varieties certainly contributed to the growth from 12.38M mt to 18.81M mt. The game-changing value of this innovation is often underappreciated, however. But the growth via the land frontier or area harvested is less for the same period, and even declining in some years.

## **What is your own vision for PhilRice as an R4D institution?**

For it to sustain the high quality of its science in the midst of change. For PhilRice to remain relevant, empowered, and compelling in its service to our rice farmers — whether they are among our aging farming population or the younger, enterprising ones — it must

envision a rice-secure Philippines, with farmers enjoying decent and rising standards of living.

## **What type of new technologies are you envisioning for the rice farmers in the next ten years?**

For sure, technologies that will continue to improve our farmers' competitiveness and make rice farming more profitable, resilient, and sustainable. Modernizing agriculture is an investment that can make the sector and the future food system more productive and less risky (as also envisioned by the National Academy of Science and Technology [NAST], Philippines); technologies that enhance value-adding activities, among others. Today for example, we see the benefits of remote sensing technology through the scaling of the Philippine Rice Information System (PRISM). The impact of mechanization on our farmers' ability to work later in life should also be recognized.

## **Your word of advice for PhilRice to live up to the Filipinos' expectations in this "better normal" and beyond?**

For the Institute to embrace change, and co-create the new, or the next, or the better normal. To improve is to change. •

# MORE THAN 30 YEARS FOR FARMERS

CHARISMA LOVE B. GADO- GONZALES and  
CHRISTINA A. FREDILES

**PhilRice** was created on Nov. 5, 1985 through the initiatives of UP System President Edgardo J. Angara and Agriculture and Food Minister Salvador H. Escudero III. Presidents Ferdinand E. Marcos and Corazon C. Aquino signed and reaffirmed the special law that is now the PhilRice charter. Minister of Agriculture and Food Ramon V. Mitra and UPLB College of Agriculture Dean Ruben L. Villareal provided the cradle for the Institute.



## SOWING PHILRICE 1985-1995



### Established stations

- Science City of Muñoz, Nueva Ecija
- University of the Philippines Los Baños Laguna
- Midsayap, North Cotabato
- San Mateo, Isabela
- RTRomualdez, Agusan del Norte

- The Central Experiment Station in Nueva Ecija was constructed through a grant-in-aid from JICA, and became its headquarters; Laguna, its principal office.
- Integrated Pest Management was adopted as one pioneering program.
- First released varieties: PSB Rc 6 (Carranglan) and PSB Rc 8 (Talavera), for irrigated lowlands yielding up to 6t/ha.
- Established the Rice Seed Production Network (SeedNet) to facilitate seed distribution of new varieties to farmers



## GROWING STRONG 1996-2005



### More stations and satellite farms

- Mariano Marcos State University Batac City, Ilocos Norte
- Murcia, Negros Occidental
- Central Mindanao University Maramag, Bukidnon

- First agency under the Department of Agriculture to get ISO 14001 certification on environmental management system.



### Research

- *Palayamanan*: purposive integration of rice with other crops and livestock
- PSB Rc 78: first mutant variety co-developed with the Philippine Nuclear Research Institute
- Matatag 9: released as a stop-gap rice variety against the tungro disease
- NSIC Rc 104 (Balili): first variety for cool-elevated areas



### Development Work

- **PalayCheck**: extension approach to promote the integrated rice crop management system
- **Open Academy for Philippine Agriculture (Internet ng Magsasaka)**: network of institutions providing information, advisories, and learning opportunities for extension workers and farming communities through computers and cellphones
- **PhilRice Text Center**: SMS-based helpdesk and support, which links experts, extensionists, and farmers
- **Hybrid Rice Commercialization Program**: created new jobs and increased farmers' income. President Gloria Macapagal Arroyo temporarily put PhilRice under her office
- **Rice Science Museum**: the country's sole museum dedicated to the science, technology, art, culture, and history of Philippine rice
- **Rice Garden**: showcases the art and science of rice farming to the residents in Metro Manila



## WORKING FOR EVERY FILIPINO 2006-PRESENT

An impact study (1997-2007) commissioned by the Bureau of Agricultural Research saw that for each peso invested on PhilRice, a net return of P4.45 for the Philippine economy was gained.

Bestowed ISO certifications on Integrated Quality, Environment, and Health and Safety Management Systems.

Strengthened the Intellectual Property Management Office by setting up a patent library called Innovation and Technology Support Office. To date, PhilRice IP portfolio lists a total of 326 granted patents, utility models, copyrights, trademarks, plant variety protection, and industrial designs.

To improve research quality and services, new infrastructure such as genetic laboratory, crop biotech center, and renovated admin building were erected.

As mandated by the 2019 Rice Tariffication Law, PhilRice develops, propagates, and promotes inbred rice seeds; and organizes rice farmers into seed growers associations/cooperatives.



### New branch stations and satellite farms

- Ligao City, Albay
- Sta. Cruz, Occidental Mindoro
- University of Eastern Philippines Catarman, Northern Samar
- Western Mindanao State University San Ramon, Zamboanga City



### New Varieties

- NSIC Rc 142 (Tubigan 7): first biotech-bred rice using DNA markers-aided selection, resistant to bacterial leaf blight, tungro, and stem borer
- NSIC Rc 196H (Mestiso 16) and Rc 198H (Mestiso 17): first two PhilRice-bred hybrid rice varieties for irrigated lowlands
- NSIC Rc 202H (Mestiso 19) and Rc 204H (Mestiso 20): first two-line hybrids bred with UP Los Baños
- NSIC Rc 298 (Tubigan 23): first variety for direct seeding



### Research

- Nutri-Rice Milk: drink made from germinated brown rice containing Gamma Amino-Butyric Acid that improves brain and cardiovascular functions and can slow down the effects of aging. Commercialized with the Philippine Carabao Center
- Fertilizer Derby, *Masaganang Ani at Mataas na Kita* Challenge: determines the best nutrient management technology package



### Digital farming tools

- PinoyRice ([www.pinoyrice.com](http://www.pinoyrice.com)), a one-stop information portal on Philippine rice production, which took off from the Open Academy for Philippine Agriculture
- FutureRice Farm demonstrates ICT-based farm technologies
- e-Damuhan uses artificial intelligence to recognize weeds
- AgRiDoc, virtual farming assistant
- Binhing Palay, catalogue of Philippine rice varieties
- MOET app, soil nutrient calculator
- Leaf Color Computing Application, assesses nitrogen status of the rice plant
- Binhi e-Padala, digital voucher system used to ease seed delivery and distribution under the Rice Competitiveness Enhancement Fund-Seed Program



### Development Work

- **AgRiDOC:** trained new breed of extensionists who are technically equipped and educated on transformational leadership
- **Be RICEponsible:** taking off from the National Year of Rice 2013, the campaign engaged every Filipino to do their part in achieving rice self-sufficiency. Consumers are encouraged to avoid wastage in table rice.
- **Infomediary Campaign:** communication pathway in agricultural extension for remote rice-farming communities by mobilizing young people to serve as Infomediaries
- **Publications:** Produced about 1,000 titles; for seed growers, extensionists, farmers, policy makers, and general public
- **Rice Business Innovations System Community Program:** addresses farmers' needs—from production, processing, and marketing using the clustering approach and agribusiness framework
- **National Year of Rice 2013:** It was an advocacy campaign to promote efficient rice farming through adoption of proven rice production technologies by farmers, and inspiring them to perform better. It also promoted responsible rice consumption for better health and less rice wastage.
- **Lakbay Palay:** formerly known as Farmers' Field Day. Conducted every cropping season, it enables farmers to visit PhilRice and see the performance of future varieties and the results of using modern rice practices.

first came to PhilRice in May of 1990, literally springing from the Agronomy Department of the University of the Philippines Los Baños (UPLB) as a fresh grad. I came to start my first job — a job that didn't stop until nearly 20 years later.

So, what was the Institute already up to in 1990, barely five years after its inception?

Truth be retold, a lot already — through a networked R&D implementation nationwide, led by UPLB scientists seconded to PhilRice, supported by its young staff (myself included in the 261 full personnel complement), and sans a deputy director for research, though there was already one for administration.

More than 60 projects were already going on that year, spanning the eight R&D programmatic thrusts on: varietal improvement; planting and fertilizer management (PFM); integrated pest management (IPM); rice-based farming systems (RBFS); rice engineering and mechanization (REM); rice chemistry and food science (RCFS); social science and policy research (SSPR); and technology transfer. Today, all those undertakings have deepened the conduct of their programs, activities, and projects (PAPs) through our divisions, programs, and branch stations.

Through germplasm conservation, breeding and selection, field performance-testing, and basic seed production, varietal improvement sought to increase yields and stabilize them in the important rice ecosystems and the different agroecological types in the country.

The PFM Program aimed to improve and sustain the productivity of soils planted to rice, and to develop efficient planting methods that can boost rice production. The effects of different zinc amelioration treatments on grain yield were studied, along with the pre-planting

# NINETEEN-NINETY: A recollection of PhilRice

JOHN C. DE LEON

and post-planting management of old seedlings; seed production practices for green manures; nitrogen sources and methods of nitrogen application; and rates and times of nitrogen application for inbred and hybrid rice, among other things.

Meanwhile, the IPM program back then fine-tuned and demonstrated approaches that sustained rice yields and maintained environmental and public safety. It looked into biological control agents against rice pests and screened pesticides. The RBFS identified constraints and developed strategies to overcome them, as well as create opportunities in rice farming systems. Cropping pattern, cultural management, and crop-livestock integration were all looked into to raise farm productivity. Examples of their early works were about fertilizer management in upland rice areas; crop residue incorporation; effects of organic and inorganic fertilizer application; and utilization of rice paddy dikes for upland crop production.

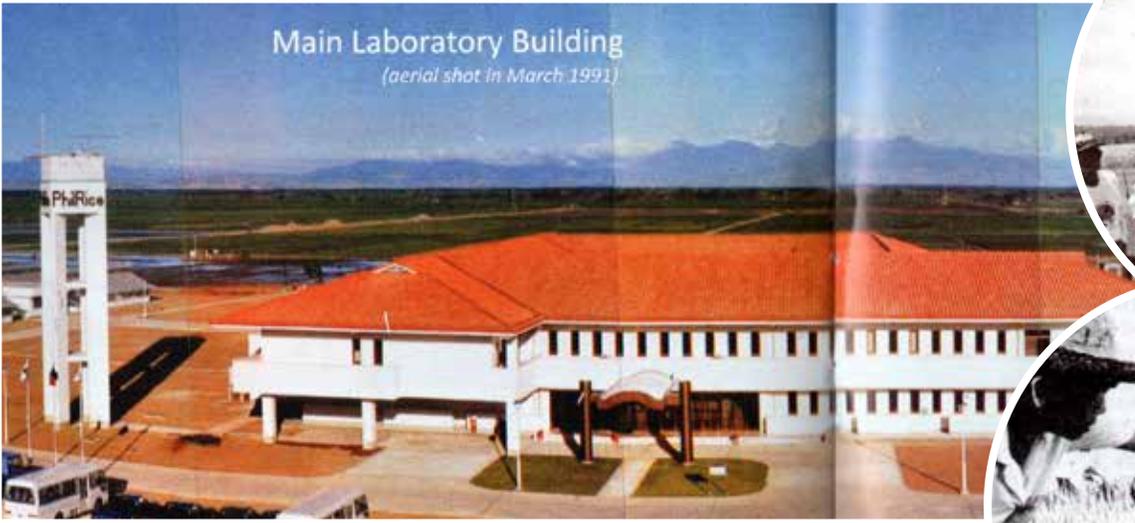
On the other hand, the REM sought to improve farm mechanization, the use of land and water resources, and develop postharvest technologies for rice and its by-products. Among its earlier designed machines and equipment included the upland rice seeder; deep-placement equipment for prilled urea fertilizer; floating tiller; paddy drum seeder; improved grain

cleaner. The program also developed small water-impounding reservoirs for rainfed and upland areas to collect rainfall runoff in the wet season to supplement irrigation during dry spells.

The RCFS Program largely supported breeding activities through rice grain quality improvement. It established the grain qualities preferred by our consumer groups and maximized the use of traditional and modern rice varieties and their by-products.

SSPR regularly monitored farm households, and carried out socio-economic evaluation of various technologies to increase the effectiveness of technology development and adoption. The program did buffer-stock and supply-and-demand trends analysis for the 1980 to 1989 period; examined existing government policies affecting rice production, distribution, utilization and quality control; inventoried economic researches on rice; studied rice-based livelihood enterprises and also the role of rural women in rice-based farming systems.

In 1990, the Technology Transfer Program of PhilRice already consisted of activities in training, communication, and on-farm technology development (OFTD). In that year alone, over 14,000 rice farmers belonging to non-government organizations in 10 provinces



Main Laboratory Building  
(aerial shot in March 1991)



PHILRICE PHOTOS

Farm productivity, the environment's welfare, and farmers' health have been given importance since the 1990s through training on Integrated Pest Management.

**In 1990, over 14,000 rice farmers in 10 provinces benefited from our training programs supported by various agencies through their regional and provincial offices.**

benefited from our training programs — supported by various agencies through their regional and provincial offices, by State Universities and Colleges (SUCs), and the Land Bank of the Philippines.

Some of the OFTD activities that year included variety adaptation trials in favorable environments; on-station demonstration of improved cultural management practices of Philippine Seed Board varieties; verification trials of packages of technologies for adverse environments; evaluation of technology diffusion in rice black bug-infested areas of Palawan; rice research and extension demonstration training program in Marawi City and Lanao del Sur in collaboration with Mindanao State University.

A truly great milestone by PhilRice was the ground-breaking ceremony to commence the improvement of its Central Experiment Station (CES) in Maligaya, Muñoz, Nueva Ecija. Dr. Obien (SRO to us) has shared a lot of interesting details about this, of course, in his book 'Dare to Build'. The massive infrastructures still well-maintained today were made possible by the Government of Japan's benevolent appropriation through JICA. That was also in May 1990, quite around the time I first came to PhilRice, a time I never imagined I'd return to, to celebrate PhilRice@35 and also harvest by this recollection the abundance of blessings previously secured by the Institute. It is said that we are made wise not by the recollection of our past — but by the responsibility for the future. •

# ONWARD TO LEARNING & DEVELOPMENT

Written by: Julianne A. Suarez

Subject Matter Specialist: Lea dR. Abaoag

Illustrated by: Zenny G. Awing

The agriculture landscape constantly reinvents itself. That means farmers and other stakeholders have to reinvent themselves, too, to stay on top.

Lea dR. Abaoag, head of the Technology Management and Services Division (TMSD), said there is a need to continuously train rice specialists and farmers to cope with the dynamic and challenging agricultural environment.

“We need to train our stakeholders because the generation of farmers is changing; the agriculture extension workers (AEWs) who are government employees retire; and technology is constantly advancing,” she said.

Abaoag added that changes in the training curriculum of PhilRice involve not only the subject matter but also the packaging of the messages and the approach or methodology of the training. Now, farmers are equipped with both knowledge on rice production and basic skills in agripreneurship that help them initiate their own enterprise. Extension workers are re-tooled on the technical aspects of rice production, as they are introduced to transformational leadership skills.

A series of tracer studies conducted by TMSD show that farmer-trainees share rice production-related technologies such as pest and nutrient management to their fellow farmers, and are often tapped to teach young or beginner-farmers.

The studies also showed that the skills of trained rice specialists on proposal writing, networking, facilitating, agripreneurship, analyzing farm problems, and decision-making were improved. PhilRice training programs have also catered to rebel returnees, retirees, and out-of-school youth.

As PhilRice completes 35 years of service, let's go on a trip down memory lane on how its training curriculum progressed to fit the constantly changing needs of farmers and AEWs.

- BAR-funded Agricultural Development Officers of the Community (AgRiDOC) training program under the Improving Technology Promotion and Delivery through Capability Enhancement of Next-Gen Rice Extension Professionals and Other Intermediaries (IPaD) project.
- The training focused not only on developing the technical and diagnostic skills of the trainees but also on strengthening their sense of mission.
- The Agricultural Training Institute (ATI) adopted the training through its regional offices and has become its entry-level training for trainers.



2014

START



1989-1990

- In partnership with the DA, non-government organizations (NGO), and state universities and colleges, the best available rice and rice-based production technologies then were introduced to thousands of farmers nationwide.



1991

- Training courses helped prepare specialists who would assist provincial governments to develop and implement local rice programs in pursuit of decentralization and local autonomy.
- Other training efforts were in support of rice seed production espoused by farmers' cooperatives.
- Institutionalized job-enrichment courses for NGO extensionists under the Integrated People's Livelihood Cooperative System.



1993-

- Season-long Rice Specialists' Training Courses (RSTC) on Integrated Pest Management (IPM) among farmers, farmer-leaders, and rice specialists from cooperating agencies and NGOs were carried out in support of the *Kasaganaan sa Sakahan at Kalikasan* program, in partnership with the Food and Agriculture Organization.



**2015**

- Training courses and FFS on the *PalayCheck* System, rice-based farming system, farm machines operations, seed testing, and entrepreneurial activities; participated in by farmers, agricultural extension workers, fresh agriculture graduates, and PhilRice personnel.



**2016**

- The onset of the season-long training program named #RiceUpPh. The modular approach is still applied up to present.



**2019 - Present**

- RSTC, TOT, and FFS were supported by the Rice Competitiveness Enhancement Fund.
- The training details the current situation of the rice sector and sheds light on why the Philippines should adhere to its international trade commitments.
- The transformational leadership approach is adopted in the said training with strong emphasis on modern, science-based rice farming.



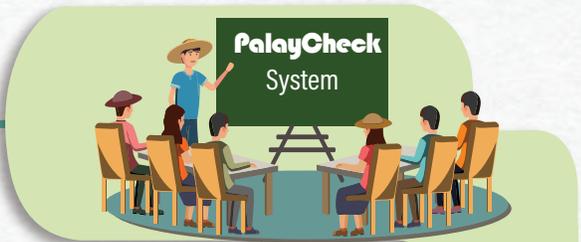
**2009**

- The season-long RSTC program was revived; training graduates named Rice Sufficiency Officers who were fresh graduates from universities and colleges were deployed nationwide to train farmers.



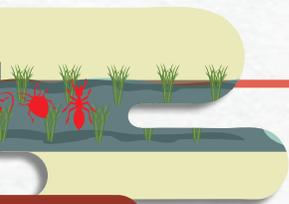
**2008**

- *PalayCheck* System for rice specialists and Training of Trainers (TOT) graduates, Facilitating and Communication Skills for extension workers, Organic Fertilizer Production and Utilization for farmers/farmer-leaders, and Farm Machinery Operations and Safety for Young Farmers were conducted.
- Training courses on Rice S&T Updates repackaged for *Sangguniang Bayan* members.



**2004 - 2005**

- Pilot-testing of the *PalayCheck* System, a dynamic rice crop management system that presents the best key technology and management practices as key checks.
- Farmers, farmer-leaders, extension workers, and other rice R&D stakeholders participated in training courses.



**-1994**

- Participants' knowledge and skills on pest and disease management through the FFS were enhanced.
- The IPM-*Kasakalikahan* training's key message: Educate participants on the judicious use of pesticides and lessen the use of harmful chemicals in rice production.



**1998**

- Training courses were offered in support of the *Gintong Ani* Program (GAP): RSTC on hybrid rice seed production; enrichment training course for trainers of GAP; rice production; and specialized hybrid rice seed production.



**2000**

- Potential seed growers trained under the hybrid rice commercialization program.
- "University Without Walls" approach trained seed growers on public hybrid seed production (Mestizo 1).
- The focus shifted from IPM *Kasakalikahan's* concept to hybrid seed and commercial production.

# Partners for our Rice Farmers

INFOGRAPHICS BY: REUEL M. MARAMARA  
SUBJECT MATTER SPECIALIST: EDUARDO JIMMY P. QUILANG



**"PhilRice is not a stand-alone institution. It owes its success to and continues to draw strength from its multitude of partners."**

**-Dr. Leocadio S. Sebastian, former DA-PhilRice Executive Director**

While not exhaustive, here is a glimpse of the partnerships that helped us do our best for our rice farmers.



## International partners

DA-PhilRice partners with international agencies to boost its R4D capabilities. The Japan International Cooperation Agency (JICA) financed the construction of the Institute's research laboratories, development of experimental farms, and procurement of field and laboratory equipment in 1990 (see pages 34-36); the Korea International Cooperation Agency (KOICA) funded a project to improve the production, processing, certification, distribution, and adoption of high-quality rice seeds; and the Food and Agriculture Organization (FAO) co-implemented another project to increase farmers' yield through irrigation equipment and technologies funded by the European Union. The United States of America funds the construction of the DA-Crop Biotechnology Center, with PhilRice counterpart, through its Agricultural Trade Development and Assistance Act or Public Law-480; the Newton Fund provided grants for the improvement of rice straw quality for use as animal feed, biofuel production, and bioenergy generation to reduce rice-straw burning, and facilitated research collaborations with the Universities of York and Dundee, United Kingdom Institute of Food Research, Vietnamese Academy of Agricultural Sciences, and Vietnam Field Crop Research Institute; and the International Rice Research Institute (IRRI), which has always worked with PhilRice and our National Agricultural Research System (NARS).



## Local partners

PhilRice does not bring down rice technologies to farmers and other users alone. We partner with government and non-government agencies. The DA and its family members had been the Institute's constant teammates in the field in

terms of farmer training and technology promotion; the DA-Bureau of Agricultural Research (DA-BAR) funds certain R&D projects such as the Philippine Rice Information System or PRISM and the Rice Crop Manager. The Department of Science and Technology also funds certain PhilRice projects. Furthermore, institutions like the Villar-Sipag Foundation help the Institute multiply its extension capacities by training rice extensionists and farmers; and seed growers and members of the SeedNet make available to farmers high-quality seeds of the varieties the Institute has developed.



## Schools

Department of Education agriculture teachers partnered with us in developing among the young farmers the relevant skills and competencies and technology on rice farming. State universities and colleges help PhilRice in its operations.

The Mariano Marcos State University (together with the National Tobacco Administration) is home to PhilRice Batac; PhilRice Los Baños is hosted by UP Los Baños; Samar Satellite Station is within the University of Eastern Philippines; Zamboanga Satellite Station in Western Mindanao State University; and PhilRice Field Office in Central Mindanao University. In 2019, the University of Southern Mindanao signed an agreement with PhilRice to expand seed production in Mindanao.



## Policymakers and LGUs

Creating impact would have been impossible without the enabling environment built by our legislative partners in the senate and congress. The policies they have passed provided support to DA-PhilRice that resulted in more programs to benefit the rice farmers.

Provincial and city/municipal local government units (LGUs) support the implementation of our programs in their localities. With strict travel restrictions brought about by the COVID-19 pandemic, LGUs are among the Institute's most reliable partners in seed distribution under the RCEF-Seed Program.



## National Rice R&D Network

DA-PhilRice also collaborates with the Network members which are strategically located across the country. These agencies are engaged in specific areas in rice research, such as varietal development, mechanization, and seed production.



## Private sector

Food companies, hotels, and information technology outfits, privately owned museums, suppliers, and machine manufacturers have adopted PhilRice advocacies and helped in fast-tracking the adoption of our technologies. Recently, we launched the "Sa Palay at Gulay, may Ani, Hanapbuhay, Oportunidad, at Nutrisyon" or PAG-AHON Project in partnership with the East-West Seed Company Inc., Lupao Vegetable Growers Association, and the LGU of Lupao, Nueva Ecija to increase food production in the municipality.



## Youth

The Institute also partners with the young generation. Some of these partnerships engaged high school students in rice farming by bridging information to their farmer-parents.



## Media

To further amplify its efforts in communicating rice science, DA-PhilRice has media partners across the country. A number of radio stations have been broadcasting specific topics on rice production. DA information officers are also our constant allies.



## Influencers

Capitalizing on the public's reception of media influencers, we also partner with television and social media celebrities to promote our campaigns and advocacies. Recent partners include actor Piolo Pascual and 2020 TikTok Philippines' top educational content creator Ramon Christian "Arshie" Larga to promote brown rice; and Miss Universe 2013 beauty icon Ariella Arida as 2019 RICEpossible ambassador.

*With excerpts from Our Best for our Farmers: The PhilRice Story, PhilRice Magazine, and PhilRice website.*

# Enduring partnership

HANAH HAZEL MAVI B. MANALO  
SUBJECT MATTER SPECIALIST:  
TEODORA L. BRIONES



Dr. Hitoshi Takahashi (R) has facilitated the sending of 60 PhilRice researchers and administrators to Japan to pursue degree and non-degree training programs during his nearly decade-long service (1992-2000) as JICA team leader.

For three decades now, the Japan International Cooperation Agency (JICA) has been PhilRice's partner in serving the Filipino rice farmers. The PhilRice-JICA projects have helped transform the lives of thousands of farmers, and the ways the Institute performs its role as the Philippines' lead agency for rice research for development.

Since 1990, JICA's support to PhilRice amounts to more than P1 billion. More than well-spent pesos and yen, PhilRice-JICA partnership cuts across the broad themes of infrastructure, capacity enhancement, and technical cooperation.

### Infrastructure

The PhilRice Central Experiment Station (CES) has always received commendations for its beautiful and well-zoned campus. Not known to many, the construction of the CES' Main Laboratory Building was funded by the Government of Japan through its JICA General Grant-in-Aid program from 1990 to 1991.

The Building has since, according to first Executive Director Santiago R. Obien, provided a "modern home for PhilRice". It has witnessed the development of many technologies on rice production, which are now being used by farmers. JICA-donated vehicles hastened the delivery of the Institute's services to almost all provinces in the country.

Constructed with the building were: training dormitory, cafeteria, and research laboratories; development of experimental farm; and procurement of laboratory equipment. The training dormitory (hostel) is among the best accommodations in the Science City of Muñoz.

Other JICA-financed facilities are the National Rice Engineering and Mechanization Center (NREMC) at CES and the training building at PhilRice Agusan. NREMC houses our Rice Engineering and Mechanization Division (REMD) and serves as display area for the machines developed by the Institute.

Specialized laboratory and fabrication equipment helped REMD develop farm machine prototypes.

### Capacity enhancement

JICA made possible the non-degree training in Japan of 64 PhilRice staff members on various fields of specialization, including R4D administration. Other personnel received degree training in Japanese universities, thanks for the intercession of JICA. Many of them still work productively at the Institute. Those who have left or retired have fully rendered their return of service, so to speak. A few of JICA-trained PhilRice employees have been recognized either locally or globally for their work in advancing rice science and development in the country.

Former PhilRice Executive Director Leocadio S. Sebastian said that the "enduring outcome" of JICA-PhilRice partnership is the creation of a cadre of staff members who now contribute to ensuring sustained rice productivity in the Philippines, which, by extension, helps raise the income of rice farmers.

Now research fellow Thelma F. Padolina, former JICA training recipient, said that the JICA-PhilRice partnership afforded her the opportunity to work with some



JICA team leader Moriyuki Shigyo inspects the PhilRice drum seeder as part of his monitoring activity.



TCP3 Lagare Multi-Purpose Cooperative Inc.

**“The enduring outcome of JICA-PhilRice partnership is the creation of a cadre of staff members who now contribute to ensuring sustained rice productivity in the Philippines, which, by extension, helps raise the income of rice farmers.”**

- Dr. Leocadio S. Sebastian

of the “highly respected rice breeders” in Japan. These interactions with Japanese experts greatly improved her skills and knowledge in rice breeding.

After helping enhance the capacities of Filipino rice professionals, JICA involved PhilRice in training extension agronomists from 24 Sub-Saharan countries under the Japan-initiated Coalition for African Rice Development. In 2011-2013 (Phase 1) and 2016-2018 (Phase 2), 121 rice professionals from Africa underwent season-long training programs on rice farming and extension methods in the Philippines, jointly designed and

executed with the International Rice Research Institute.

### **Technical cooperation on R&D**

To fully utilize the facilities provided by JICA in developing and promoting rice technologies, three technical cooperation projects (TCPs) were implemented from 1992 to 2009 — one after the other. About 70 Japanese experts had been dispatched to guide and work with PhilRice R&D staff members under various TCPs. Areas of cooperation were on rice

breeding, agronomy, plant protection, farm machinery development, rice chemistry, farm management, and technology promotion.

There are several TCP successes. One of them is the development of the PhilRice Rotary Reaper, which is now being used by farmers in Central Luzon and in Pangasinan.

In rice breeding, six PJ (Philippine-Japan) rice varieties were developed and promoted, all with high yield and excellent grain qualities. One of these varieties is NSIC Rc 216, which Padolina said, is popular among farmers owing to its high adaptability across the country. Hence, it is now one of the three nationally recommended varieties under the Rice Competitiveness Enhancement Fund (RCEF)-Seed Program.

In agronomy, Myrna D. Malabayabas, former JICA trainee and now supervising science research specialist in the Agronomy, Soils and Plant Physiology Division, said that the JICA-PhilRice partnership generated knowledge on estimating the nitrogen fertilizer-use efficiency of direct-seeded rice using the tracer technique.

A major contribution of TCP3 to Philippine rice R&D is the development of location-specific technology (LST) packages. Each package considers a range of factors affecting productivity in rice cultivation, such as climate, soil, social status of farmers, and farming systems as a whole.

TCP3 developed LST packages for Central and Northern Luzon as well as for Northern Mindanao. Presently, LST development guides the key strategies of PhilRice in increasing rice farmers’ productivity.

Reynaldo E. Aber, chairperson of the TCP3 Lagare Multi-Purpose Cooperative, Inc. in Cabanatuan City, said that the cooperation helped their farmer-members in choosing the rice varieties that are well-suited to their area. Choosing the right variety is key to ensuring good yield. Aber said their cooperative was formed in 2008, courtesy of their participation in TCP3.



TCP 5 farmer-partners in Marawi City, Lanao del Sur.



TCP 5 farmer-partner in Omar, Sulu.

## JICA in Muslim Mindanao

A strong commitment to attaining peace in Muslim Mindanao through agricultural productivity is a shared vision of the PhilRice-JICA partnership. In realizing the dream, strategic alliances to work in various projects were formed with the Department of Agriculture and Fisheries-Autonomous Region in Muslim Mindanao (DAF-ARMM), Bangsamoro Transition Commission), Bangsamoro Development Agency, and Bangsamoro Leadership and Management Institute.

Over the years, the projects in ARMM (now BARMM) from 2005 to 2019 had engaged more than 8,000 farmers in rice and rice-based farming systems, and trained around 600 Bangsamoro women in food processing. Farmers adopted rice and vegetable production technologies, which provided food and earned them good cash.

In the PhilRice/JICA-published *Ani Magazine*, it was reported that from one farmer trained under the project on vegetable production, Almojir Hamsa, more than 100 households were inspired to follow suit. This was all because Almojir was able to demonstrate and convince them that

there is, indeed, money in farming. Similar impressive impacts were documented in the provinces of Maguindanao, Lanao del Sur, Basilan, and Sulu. The *Ani Magazine* circulated in 2009 articulated success stories of TCP 4 farmer-beneficiaries.

Said projects were packed with many development activities aimed at alleviating the conditions of the Filipino Muslim farmers. These activities included setting up *Palayamanan* model farms, sending farmer-participants to local study tours, and conducting Farmer Field Schools by trained agricultural technologists and selected farmer-extension workers.

Aside from increase in income and rice yield, the impact assessments conducted on the ARMM projects also noted growth in savings and intensified involvement of women farmers.

Former PhilRice acting executive director and current branch director of Midsayap, Dr. Sailila E. Abdula, counts on strong JICA involvement in the upcoming technology transfer program in agriculture in BARMM. He said that this program will pave the way for greater competitiveness of BARMM farmers.

Through JICA support, assistance to rebuild war-torn communities was made possible. There were project sites at the heart of Camp Abubakar, the largest bastion of the Moro Islamic Liberation Front, and in Marawi City.

As PhilRice celebrates its 35<sup>th</sup> anniversary, it is worth stressing that JICA has been a part of the Institute's journey for 30 years.

Sebastian said that the "Japanese people through JICA have picked the right investment in PhilRice". He added that the "Filipino people would forever be grateful" for the various forms of assistance the country has received from JICA.

Dr. Santiago R. Obien once enunciated that the PhilRice-JICA collaborations "have enriched the human mind and heart—something that could not be measured in yens and pesos".

In 2018, PhilRice received the JICA Philippines Chief Executive Award that recognizes its "outstanding partners" in delivering meaningful work in the Philippines.

"Thank you" has its own equivalent in any language, may it be spoken or gestured. •



# Passing on knowledge

The SRO seminar series

CHARISMA LOVE B. GADO-GONZALES

Management is not as easy or as simple as defined because by the very nature of human beings, predictability could only be inferred, and a good leader must be able to anticipate actions and behavior before they could happen.

This is management, according to Dr. Santiago Rigonan Obien (SRO), first PhilRice executive director, who the Institute honors for his able leadership, steering the Institute through journeys that delivered results for the rice farmers and to the agriculture sector for 13 years from 1987 to 2000.

Leader-managers, he says, have to be always ahead, taking more than two steps forward. As he said in his book, *Dare to Build*, there is no single perfect recipe for success in managing institutions because of differences in the stages of their development, socio-cultural and political environment, and the types of people in the institutions. This is why the “leadership par excellence” that PhilRice works to cultivate among its officials and future members of its management committee is communicated through the honorary annual SRO Seminar Series on Research Management and Institution-Building, which started in 2000 when SRO retired.

“The beauty in this seminar series is that, the well-seasoned leaderspeakers are talking from their own experiences. They share stories on their failures and successes from institution building, operations, sustainability, and improvement,” Dr. Eduardo Jimmy P. Quilang, OIC deputy executive director for research, said.

For 20 years, the seminar series have covered topics on persistence and pragmatism for policies and politics; resolving conflicts through diplomacy; policies and legal bases on handling administrative matters related to institutional finances; and art, science, and profession for development.

Here are few of the learnings gained from the seminar series:

“Leveraging is a good strategy to bring in more funds – partnership using the strengths of the organization such as facilities and expertise to get multi-funding support. And yes, expand your linkages and partnerships – people, organizations – and nurture them. As leader and manager, be willing to take risks, but be accountable, because there are always better ways to make things work for the good of the organization and its

clientele. Be willing to listen and adapt to change. Go to the grassroots, talk to the rank-and-file people, dialogue with clients – and process a response leading to a logical action.”

**Leylani M. Juliano**  
**Chief Science Research Specialist**

“As a newly designated division head, I have applied the knowledge I learned from the series, which include valuing quality in research management and having strong commitment to develop talents.”

**Glenda D. Ravelo**  
**Procurement Management Division**

“I learned about the different leadership styles of research managers and institution builders. They could be authoritarian, democratic, or consultative. They also have distinct ways of program implementation. Assessment of their success as a leader in research management and institution building is difficult as different criteria may be applied, which include research outputs, technologies generated, awards, fund generation, and staff development.

**Dr. Marissa V. Romero**  
**Food Scientist**

“The seminar series helped me develop a clear and sound vision of where my research team wanted to go. I learned how to communicate my plans in a way that would truly influence and motivate my colleagues and without coming off as either too weak or too overbearing. I also gained some insights on how to pick or build a good team capable of delivering our research agenda.”

**Dr. Roel R. Suralta**  
**Scientist II and Director,**  
**Crop Biotechnology Center**

“My learnings can be summarized in three points: 1) Leadership style should be flexible. You need to apply what you think is effective on the different personalities of the people in the organization; 2) Servant-leadership is still the best, walking the talk and being an example; and 3) When you are a leader, you should learn to be people-oriented.”

**Dr. Eduardo Jimmy P. Quilang**  
**OIC Deputy Executive Director**  
**for Research**

## Roster of speakers in the SRO seminar series and their positions at the time of presentation

June 27, 2000

**DR. SANTIAGO R. OBIEN**  
1st Executive Director, PhilRice

**DR. JOSEPH C. MADAMBA**  
Director, Socio-Economics Research Inc.

**DR. FELICIANO B. CALORA**  
Former Director/ President, Cyanamid  
Agricultural Resources Foundation

**DR. ROGELIO O. JULIANO**  
Former Executive Director, Coastal  
Management Center

**DR. FERNANDO A. BERNARDO**  
Principal Adviser, International Rice  
Research Institute (IRRI)

November 7, 2000

**DR. ROGELIO V. CUYNO**  
Chancellor, UP Mindanao

**DR. SHUSHIL PANDEY**  
Agricultural Economist, IRRI

November 5, 2001

**DR. WILLIAM D. DAR**  
Director General, International Crops Research  
Institute for the Semi-Arid Tropics (ICRISAT)

November 6, 2002

**DR. NGUYEN VAN NGUU**  
Agricultural Officer  
Food and Agriculture Organization

**JOSE I. CALDERON**  
Former R&D Head, Syngenta

November 6, 2003

**DR. RONALD P. CANTRELL**  
(presented by Dr. Ren Wang)  
Director-General, IRRI

**DR. RAMESH C. SAXENA**  
Chairman, Neem Foundation

November 8, 2004

**JESUS T. TANCHANCO**  
Former Administrator, National Food Authority

November 7, 2005

**DR. EMIL Q. JAVIER**  
President, National Academy  
of Science and Technology

November 6, 2006

**DR. BEN S. MALAYANG III**  
President, Silliman University

November 7, 2007

**DR. PETER AUN-CHUAN OOI**  
Director, Asian Vegetable Research Development  
Center-Asian Regional Center  
Bangkok, Thailand

November 6, 2008

**DR. LIBERTADO C. CRUZ**  
Executive Director, Philippine Carabao Center

November 4, 2009

**DR. AGUSTIN B. MOLINA**  
Senior Scientist and Regional Coordinator,  
Biodiversity International

November 3, 2010

**DR. ACHIM DOBERMANN**  
Deputy Director-General for Research, IRRI

November 9, 2011

**DR. JOSE L. BACUSMO**  
President, Visayas State University

November 7, 2012

**DR. REX L. NAVARRO**  
Director of Strategic Marketing  
and Communication, ICRISAT

February 19, 2014

**DR. V. BRUCE J. TOLENTINO**  
Deputy Director-General  
for Communication and Partnerships, IRRI

November 6, 2014

**DR. REYNALDO V. EBORA**  
Director, National Institute of Molecular  
Biology and Biotechnology, UPLB

November 5, 2015

**DR. EDGARDO D. GOMEZ**  
Professor Emeritus, Marine Science  
Institute, UP Diliman

November 7, 2016

**JUDGE RAUL D. RAGANDANG**  
Former Office of the Government Corporate  
Counsel (retired)

**ATTY. MANUEL F. SANTOS**  
OGCC Corporate Counsel

**DIR. ELIZABETH A. FONTANILLA**  
Administrative and Legal Service,  
Department of Science and Technology (DOST)

November 6, 2017

**ABNER T. MONTECALVO**  
Branch Director, PhilRice Agusan

November 5, 2018

**DR. WILLIAM C. MEDRANO**  
Vice President for Research, Development,  
Extension, and Training  
Isabela State University

November 6, 2019

**DR. JULIUS CAESAR V. SICAT**  
Director  
DOST Regional Field Office III

*(With reports from Leylani M. Juliano and  
Teodora L. Briones)*

# Grains of thoughts

JOHN C. DE LEON

As we celebrate PhilRice@35, I thought it's wise to resonate here some of the lofty ideals that guided the Institute to making a difference for our rice farmers. May we stand out for them when everyone is standing, and be outstanding for them when others want to stand out.

The following snippets are mostly from the minds of our former executive directors and partners:



"Let us plant trees knowing we will never sit under their shade. Let us plant trees knowing we are not going to harvest

their fruits. But let us be happy with the thought that someday, someone among the young people would say, when the nights were dark and when the nights were long, there were those who did not sleep so that progress will come."

**Dr. Eliseo R. Ponce, former director of DA-BAR, in an email to Dr. Santiago R. Obien**



"I have been planting my 'trees' all those years and in the process, although I was unmindful of it, I was also building people and institutions.

My end view was to bring more rice on the table of every Filipino... At PhilRice, we went on a massive technology promotion program. We wanted to demonstrate that if a farmer puts all the technology components together, he can get a certain maximum yield and rice farming would be profitable. What is important is we have the technology and the farmers are aware of it. The public education campaign must be intensified."

**Dr. Santiago R. Obien**  
**Executive Director, 1986-2000**



"PhilRice is an embodiment of the good intentions of men and women, of leaders, stakeholders,

organizations, other

institutions, and all others who worked together for a common cause. That cause is to help develop high-yielding and cost-reducing technologies so farmers can produce enough rice for all Filipinos... PhilRice should think out-of-the-box in developing options for a competitive, sustainable, and climate-smart agriculture."

**Dr. Leocadio S. Sebastian**  
**Executive Director, 2000-2008**



"Being a science-based Institution, we would like to give our farmers the best options. PhilRice

wishes to engage farmers and other stakeholders in the scientific analysis and informed discussions about issues or technologies that affect their livelihood and future."

**Atty. Ronilo A. Beronio**  
**Executive Director, 2008-2011**



"The present food system needs changes, as food miles or the distance that a food travels from the farm to the consumers' plate are getting farther. We need a

system that is decentralized, diverse, and sustainable."

**Dr. Eufemio T. Rasco Jr.**  
**Executive Director, 2011-2015**



"We are eager to do more so our research outputs will reach more farmers, particularly the resource-poor farmer... R&D

is one investment

that has positively affected the [agriculture] industry, resulting in variety improvement, better crop management, and favorable policy environment among other accomplishments."

**Dr. Calixto M. Protacio**  
**Executive Director, 2015-2016**



"Different sets of agenda were identified in [our Strategic Plan]. In a

more simplistic

view, the core of our end goal never changed: we always work to help uplift the lives of our rice farmers."

**Dr. Sailila E. Abdula**  
**Acting Executive Director, 2016-2019**



"Muñoz is privileged to host PhilRice. Along the national highway, one cannot help but notice the proliferation of

rice seed centers,

making the Science City a major rice seeds hub in the Philippines."

**Mayor Nestor L. Alvarez of the Science City of Muñoz, Nueva Ecija**



"I learned from this Institute, I started here; and in my farming life, its linkages with the

Department

of Agriculture

and other agencies

helped a lot in our progress. So when my son went to farming, I passed on to him the knowledge I shared from PhilRice. PhilRice is family to me."

**Engr. Romeo S. Vasquez**  
**Member, PhilRice Board of Trustees**



## Carlos G. Dominguez

Secretary of Finance

The Philippines has met the challenges of COVID-19 with growing strength on the food security front. Agriculture is one of the brightest spots in our response to the pandemic, and the Rice Tariffication Law is a key component of our success.

The Rice Tariffication Law is one of the major reasons why we succeeded in keeping food prices affordable, and the inflation rate low during this health emergency. Despite logistical restrictions due to the lockdowns, we were able to sustain the flow of produce from our farms to our consumers. A food crisis did not occur.

Our agriculture sector even continued to grow when the rest of the economy contracted due to the contagion. This demonstrates the sector's resilience and the effective management of our food supply by the Department of Agriculture (DA).

DA-PhilRice must be commended for this achievement. Over the past years, the Institute contributed much to modernizing our farm systems. The DA-PhilRice's efforts include not just the improvement of rice varieties to raise output, but also the mechanization of our farms and the improvement of our logistics.

Only an efficient and modern agriculture sector can fully deliver greater food security for our people. I laud the DA-PhilRice and the other agencies' initiatives to deploy modern technology in this sector. An excellent example is the recently launched Binhi e-Padala system, which is designed to make seed distribution more efficient by using digital communication networks.

To support the efforts of the DA-PhilRice, the Department of Finance (DOF) will continue to encourage increased investments in the value chains of the rice and complementary agricultural industries. The DOF will also push for reforms that will provide more access to credit for the entire agriculture value chains.

The DOF, through the Bureau of Customs (BOC), will continue to strengthen and sustain the campaign against rice smuggling and undervaluation of imports. We will ensure that the DA-PhilRice and the other implementing agencies will have the required resources from tariff collections under the Rice Tariffication Law.

The DOF stands ready to extend support to the DA-PhilRice to ensure the food security of our people. This Department will continue to be your partner in uplifting the lives of Filipino farmers and consumers.

VOX  
POP



# How is PhilRice contributing to the country's rice security?

JULIANNE A. SUAREZ

PhilRice has through the decades been true to its reason for being - that is, to help develop high-yielding and cost-reducing technologies so farmers can produce enough rice for all Filipinos.

To attest to the contributions of the Institute to the country's rice security, here are stakeholders, partners, and beneficiaries who have closely worked with and benefitted from us.



### **Dr. Ruben L. Villareal**

*President, Philippine Agriculture and Resources Research Foundation, Inc.  
Academician, National Academy of Science and Technology  
Former Chancellor, UP Los Baños*

For the information of the millennials who were not yet around when the Institute was born, I helped lay out the program and plan of operations as chair of the PhilRice Executing Committee.

I am pleased to greet the Executive Director and staff of this great institution.

Great because without PhilRice, this country would go hungry.

For the high-yielding varieties, the cost-effective and environment-friendly technologies that the rice farmers are now applying, all Filipinos owe a lot to you. I know the details of what you have produced and continue to develop, and I need not bore you with them. Over the years, I have kept abreast of your accomplishments under the leadership of various executive directors, and I can say that without exception each one of them has done his share in shaping PhilRice into what it is today – an indispensable pillar of our country's economy.

If I were a priest or a bishop, I would give you my blessing, but since I am not, let me just congratulate each one of you for the dedicated and excellent job you are doing. Mabuhay ang PhilRice!



### **Daniel Parubrub**

*Member, Ugat-Uhay Farmers Association  
Zaragoza, Nueva Ecija*

PhilRice is a front liner. It develops new varieties of *palay* to combat different pests and diseases on the rice farm. The varieties are the hope of every Filipino rice farmer for a more sustainable and resilient farming. As a RiceBIS community member, I have been to different training programs and seminars - marketing, demo farm, variety trials, mushroom production, and new technology adoption. Through this, I have gained more knowledge and experience that eventually helped me achieve a higher yield. It also made me more efficient in rice farming compared to the traditional and conventional methods that we used to practice prior to knowing PhilRice.



### **Norelyn Dela Cruz**

*Teacher, Batac National High School  
Infomediary Campaign Partner-Teacher*

PhilRice, with its humble beginnings, is like a larva that eventually bloomed into a beautiful butterfly. I did not fully grasp the importance of PhilRice in my profession as an Agriculture teacher and as a daughter of a farmer until it slowly unfolded to me the beautiful colors of the assistance it brings to farmers and their children. Through PhilRice, I learned the importance of modern farming that helps farmers achieve more yield while minimizing damage to the environment.

My life became more colorful by seeing the youth being trained by PhilRice to help them achieve their dreams. I see them being happy doing hands-on activities like teaching their parents on the modern ways of farming, and this scene always reminds me of the PhilRice mission: "Sufficient and healthy food on the table." Long live and Happy 35<sup>th</sup> Anniversary, PhilRice.



### **Louderick Jimena**

*Agricultural Extension Worker  
Occidental Mindoro*

PhilRice gave me the much-needed confidence in making decisions on field. Through PhilRice, I have a scientific basis on what varieties to use depending on the season. I also have the technical knowledge of rice farming management now. Aside from the practical application in my field, the various information are also helpful whenever I train farmers.



### **Marelie Monteroyo**

*Agriculturist I  
Agricultural Training Institute  
Regional Training Center 10*

PhilRice for me is like a living dictionary. Through this Institute, I have gained further technical knowledge of rice production that I was not aware of before. PhilRice also helped me become even more confident in training farmers. The Institute helped me get to where I am today.



**We keep on  
finding ways to  
better serve our  
Filipino rice  
farmers.**

DEPARTMENT OF AGRICULTURE  
**PHILRICE**  
PHILIPPINE RICE RESEARCH INSTITUTE

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