

PhilRice Magazine

A quarterly publication
of the Department of Agriculture–
Philippine Rice Research Institute



ISSN 0254-6132



VOL. 36 NO. 3
JULY - SEPT 2023

ABOUT THE COVER



Farmers' lives are expected to improve with the new plan mapping abundance in our farmers' fields. The rice fields may seem to stretch endlessly toward the horizon, a testament to the sheer scale and the ambition of the Masagana Rice Industry Development Program, but like the rice stalks laden with heavy, golden grains, the Program runs after prosperity. This time, farmers are not alone as communities and value chain stakeholders are rallied behind them through the Program.



2001 Gawad Florendo Awardee

2006 Binhi Hall of Fame Awardee, "Agricultural Newsletter of the Year"

2009, 2018, 2019 Binhi Agri Magazine of the Year

2022 Outstanding Institution for Science Journalism

2022 Best Free Food Publications

2022 Binhi Hall of Fame Awardee, Best Agricultural Magazine

CONTENTS

NEWS

- 4 RCEF programs at PhilRice lauded
- 4 Multi-Purpose seeder gets innovation award
- 5 Progressive farmers encourage peers to collaborate
- 6 National, international accolades garnered
- 7 **WHAT'S NEW IN RICE RESEARCH?**
Internet of Things fascinates PhilRice

8 RICE ACROSS THE COUNTRY

10 EXPERT'S CORNER

- 12 **FEATURE:** Changing the cropping calendar for plant survival

- 14 **START IT UP:** Convincing rice growers to form 100-ha farm clusters

- 16 **INFOGRAPHICS:** Champions for the rice farmers

- 18 **MOTIVATE:** Consolidated farming: Piddig's progressive revolt

- 20 **PARTNERS IN THE FIELD:** Better farmers' market to benefit children's nutrition

FEATURES

- 22 Climate-Mapping backs up farmers

- 24 Ease in rice farming, thanks to digitalization

- 26 SARAI: Transforming farming

- 28 Good debt pays off

- 30 **INFOGRAPHICS:** Technologies to help cope with El Niño

32 STAFF EXTRAORDINAIRE

- 34 **VOX POP:** When can you say that you're MASAGANA?

Editor-in-Chief: Hazel V. Antonio • **Associate Editor:** Charisma Love B. Gado-Gonzales • **Managing Editors:** CLBGado-Gonzales and Joshua P. Mendoza • **Writers/Photographers:** Yobhel Louisse P. Beltran, AMBerto, Franzel Monique D. Bonilla, Girlie A. Carreon, Carlo G. Dacumos, Ardian M. Dolera, Christina A. Frediles, Vanneza B. Isidro, Diana P. Lim, Hanah Hazel Mavi B. Manalo, JPMendoza, Jaime F. Miguel III, Jielay O. Mosquite, Christine Mae A. Nicolas, Minard F. Pagaduan, Kiara Mae E. Panyo, Cherry Rose F. Piñon, Kimbie A. Pedtamanan, Richard Paul F. Pungtilan, Sarah Joy N. Ruiz, Fredierick M. Saludez, Michael L. Satuito, Mark Joseph R. Zuñiga • **Design/Layout, Cover Design:** CGDacumos • **Illustration:** Reuel M. Maramara, SJNRuiz • **Circulation/Admin Support:** Derwin J. Villena • **Consulting Editor:** Constante T. Briones • **Editorial Advisers:** John C. de Leon, Karen Eloisa T. Barroga, Eduardo Jimmy P. Quilang



EXECUTIVE DIRECTOR'S NOTE

JOHN C. DE LEON

Mapping abundance: The MRIDP initiative

The Masagana Rice Industry Development Program (MRIDP) represents a bold initiative endorsed by the President and Agriculture Secretary Ferdinand R. Marcos Jr. This forward-looking program designed to tackle current challenges in the rice industry, while preparing for future ones, places paramount emphasis on the well-being of Filipino farmers. Its overarching goals include bolstering the rice value chain and enhancing agricultural production throughout the country.

While the name may evoke memories of the Masagana 99 program in the 1970s, it is important to note that MRIDP has a distinct focus. Unlike Masagana 99, which centered on rice production, MRIDP zeroes in on the rice value chain.

At its core, MRIDP relies on the power of convergence, cooperation, and coordination. It seeks to pool resources, share knowledge, and coordinate efforts as it aims to achieve 97.5% rice sufficiency by 2028 and expand farmers' market access.

The program's four core strategies are encapsulated in the MaSaGaNa acronym, representing "MATatag" (resilient), "Sama-sama" (together), "GANado" (motivated), and "NAPapanahon" (timely). These strategies encompass a shift in planting calendars to adapt to climate change, the clustering and consolidation of farms to streamline interventions, adopting a value chain approach, and embracing digital transformation.

A pivotal aspect of the MRIDP is the consolidation and organization of more cooperatives to meet farmers' capital requirements through convergence. This collaborative approach empowers farmers by enabling them to pool their

resources, thus boosting their bargaining power and reducing individual risks.

Furthermore, the program ensures that assets, resources, funding, and technology, including mechanization and the adoption of new farming techniques, are readily accessible to farmers. This cooperative approach guarantees that farmers have access to the latest technologies and farming practices while maintaining strong market linkages.

Under the program, farmlands across the country will be geo-mapped to establish soil maps tailored to specific agricultural products. This innovative approach aims to boost yields and enhance farmers' income. Geo-mapping involves converting raw survey data into precise and accessible maps, providing a comprehensive visualization of a region's resources.

The MRIDP is not just about increasing rice production; improving the lives of Filipino farmers, too. As President Marcos explained during the Rice Industry Convergence Meeting, "We are doing this not only to feed the entire Philippines but also to improve the lives of our farmers – to provide them with decent lives and the means to educate their children."

Through this program, we can look ahead to a future where farming communities are empowered with knowledge and resources, leading to richer harvests, enhanced market opportunities, higher incomes, and ultimately a prosperous, better quality of life. 🌾



RCEF programs at PhilRice lauded

Sen. Cynthia A. Villar, chair of the Senate Committee on Agriculture and Food, cited anew the Rice Competitiveness Enhancement Fund (RCEF) Seed and Rice Extension Services Programs (RESP) in a midyear review in Nueva Ecija, Aug. 2 and 10.

"The PhilRice team has [significantly] contributed to achieving the goals of the Rice Tariffication Law [of helping farmers become competitive amidst the influx of rice from the international market]," she said.

Data from the RCEF Rice Seed Monitoring System showed that 11,952,883 bags of certified seeds had been distributed to farmers from Sept. 16, 2019 to March 15 this year. The distribution covered seven cropping seasons of implementation from the 2020 dry season to the 2023 dry season.

An additional 529 bags were allocated to farmer-cooperators of the program's technology demonstrations.

A monitoring and evaluation survey also reported that average yields of RCEF seed recipients increased from 3,630kg/ha to 4,320kg/ha in the dry season and from 3,690kg/ha to 4,020kg/ha in the wet season. The respondents were from the 42 low and medium-yielding target provinces of RCEF.

Meanwhile, the RESP has trained more than 3,000 farmers and extensionists on PalayCheck, high-quality inbred rice and seeds, pest and nutrient management, and farm mechanization.

From January to June, extensionists and farmers have learned from more than 300 titles of information materials distributed to them and from over 300 radio broadcast segments. More than 120,000 agriculture workers and rice tillers also learned from the knowledge-sharing and learning activities. The program's social media page likewise recorded a 400% increase in audience reach.

"[You have demonstrated promising outcomes, but we must] show more results. [Let's] increase income through higher yield per hectare, lower production costs, and less post-harvest losses," Villar challenged the review participants. - **ARJUN JAY LABATO**

The Licensing Executives Society International (LESI) has conferred on PhilRice the Innovation Award (research institution category) for its Multi-purpose Seeder (MP Seeder) during the LESI 2023 annual meeting in Montreal, Canada.

The award is a testament to the institute's commitment in advancing innovation and licensing procedures as awardees were selected for their inclusive and impact-driven outputs.

A machine for dry direct seeding of rice, corn, and mungbean, the MP Seeder met all the criteria such as solid invention value creation process, collaborative teamwork and partnership strategy, identification of roadblocks along the whole value

Multi-Purpose Seeder gets innovation award





Vicente Gonzales, chair of the St. Vincent Parish Multi-purpose Cooperative in Nueva Vizcaya, urges thousand of fellow farmers to organize themselves to uplift their lives and communities.

Officials from cooperatives in Nueva Ecija and Nueva Vizcaya have urged over a thousand farmers to collaborate to enhance access to government interventions and market opportunities.

During the two-day Lakbay Palay organized by the Philippine Rice Research Institute (PhilRice) in Science City of Muñoz, Nueva Ecija on Sept. 27-28, Ariel

chain, and alignment with LESI's focus innovation trends.

Four manufacturers from Ilocos Norte, Isabela, Metro Manila, and South Cotabato became licensees of the MP Seeder, a rare feat in the commercialization of a single technology.

According to Atty. Jerry Serapion, PhilRice's Intellectual Property Rights specialist, the MP Seeder is safeguarded by a utility model and industrial design. Co-developers of the machine are the International Rice Research Institute and UP Los Baños.

LESI is an organization of national and regional licensing executives in more than 90 countries, serving more than 6,500 individuals, and promoting the economic importance of licensing, technology transfers, and IP rights. - **MARK JOSEPH R. ZUÑIGA**

Progressive farmers encourage peers to collaborate

Dolores, chairperson of the Nueva Ecija Seed Growers Multi-purpose Cooperative, shared that their collective efforts have helped them overcome their farming challenges.

"As a group, we also face challenges but we don't rely heavily on government interventions for our farming needs so these can be allocated to the emerging associations or cooperatives. We're already grateful that the government assists us in procuring our seed produce. To increase our income, we diversified our ventures into machine dealerships, which we established in our new P23M-facility," Dolores explained.

Meanwhile, Vicente Gonzales, chair of St. Vincent Parish Multi-purpose Cooperative in Nueva Vizcaya, emphasized the benefits of cooperative membership including low loan interest rates, access to agricultural inputs such as fertilizers and seeds, dividends, and calamity aid.

"Previously, farmers were burdened with loans with 20% interest per month. By joining cooperatives, interest can be as low as 1.17% per month. During calamities, we also have loan amnesty programs for the heavily affected farmers," he said.

The cooperative, established in 1979 through a P100 contribution from each farmer totaling P4,000, now has a capital worth P424M. During the peak of the pandemic, the coop allocated P2.5M to subsidize the needs of their members.

With the theme "Bida ang Sama-sama," Lakbay Palay also launched the "BIDA RiceBIS, Be the rice's best" movement where about 10 public and private agencies and cooperatives pledged their support to increase farmers' market opportunities. These include the Landbank of the Philippines, local government unit of Arayat, Bamboo Development Incorporated, and Kiwanis international-Philippines Luzon and Bicol districts. - **ARDIAN M. DOLERA**



National, international accolades garnered

PhilRice was recognized with 18 awards from July to September.

Earlier on Aug 17, PhilRice received “Asia’s Best Employer Brand Award” from the Employer Branding Institute-India. This recognition highlights our efforts in creating a conducive and rewarding workplace environment while fostering a culture of excellence.

Sophia Borja, OIC deputy executive director for administrative services and finance, emphasized the Institute’s role in helping shape the future of the local rice industry.

“As a hub for R4D, we play a vital role in helping mold the trajectory of our

rice industry’s future. The Institute spearheads advancements in rice science and technology, all aimed at fostering a thriving rice community, encapsulated in our motto: ‘Better PhilRice. Better rice communities,’ she said.

Borja further underscored the importance of internal transformation within PhilRice, recognizing the Institute’s people as its most invaluable asset.

She reiterated the management’s commitment to promoting personal and professional growth within the organization.

Meanwhile, the Philippine Commission on Women honored PhilRice with the

“GADtimpala Silver for Outstanding Gender-Responsive Agency” and the “Bronze for the Exemplary GAD Focal Point System” on Aug. 14 for its efforts to promote gender-responsive practices, gender equality, and the empowerment of women and girls.

Additionally, our Gender and Development (GAD) team earned the remarkable distinction of a “6-star Outstanding Best Practice” in the International Best Practice Competition.

In the July 20 Philippine Agricultural Journalists, Inc. 2022 Binhi Awards, the Institute received the Hall of Fame distinctions, “Best Agricultural Magazine” (for the material you are now reading) and “Best Agri-info and Media Campaign.”

Also recognized were the Golden (Malusog) Rice Project for “Best Agri-related Advocacy Campaign” and the DA-PhilRice Facebook page as the first winner of “Best Social Media page.”

The Federation of Plant Science Associations of the Philippines, Inc. also recognized 10 PhilRice studies during its 27th Scientific Conference held in Puerto Princesa City, Palawan, Aug. 27-Sept. 1. The conference adjudged five studies as best poster; two, second place; and three, third place. - **GLAIZA D. CARRERA**



Internet of Things fascinates PhilRice

MARK JOSEPH R. ZUNIGA

In an era when information technology is reshaping industries across the globe, the agricultural sector cannot escape. From the use of intricate machinery to field-monitoring devices that provide precise data and mobile applications that deliver valuable farming advice, the agriculture of today is evolving at an unprecedented pace.

IoT in agriculture

At PhilRice, groundbreaking innovations in the form of “Internet of Things” (IoT) technologies are taking root in experimental farm fields, offering a glimpse into the future of agriculture. IoT represents a network of physical objects equipped with sensors designed to facilitate the exchange of data over the Internet. In the context of agriculture, this technology holds immense potential for optimizing sustainable farming practices and maximizing crop production.

IoT technologies

Within the realm of IoT in agriculture, a spectrum of specialized technologies has emerged, each serving a unique purpose. For instance, ensuring the quality and safety of water, a vital resource in farming, is now possible through the Water Quality and Monitoring System. This system provides essential information regarding water quality for irrigation and fish production.

Monitoring the progress of crops in the field has never been easier, thanks to the Rice Paddy Monitoring System. This technology not only keeps a close eye on

crop growth but also issues alerts when the water level in the field reaches critical levels.

The storage of produce demands precision, and the Seed Warehouse Monitoring System maintains ideal storage conditions for rice seeds by controlling ventilation in warehouses.

Moreover, air quality plays a vital role in agriculture, particularly in swine farming. The Air Quality Monitoring System capable of detecting ammonia gas levels in swine houses can send real-time alerts to hog raisers via their smartphones.

The ability to manage irrigation remotely is now a reality with the Automated Drip Irrigation System, which starts or stops irrigation based on soil moisture sensor data.

Furthermore, the Automatic Water Gate, controlled through a remote gadget,

empowers farmers to open or close water gates for precise irrigation water management.

Model in agriculture

Being at the forefront of rice research and innovations in the country, PhilRice has embraced the use of technology to help ensure rice security.

Nehemiah L. Caballong, PhilRice's ICT specialist who supervises the use of these technologies said that now is the best time to explore IoT as this will gain advantages in the future.

“The vision is for us to be a model for Internet of Things in agriculture. These technologies will make the farming practice much faster and easier. We have to be ready for the future. We're still in the initial stages, but we're on the right track,” he said. 🌱



RICE ACROSS THE COUNTRY



Dryland mechanized model farm put up

To help farmers in the semi-arid Ilocos region cope with El Niño, PhilRice Batac has established a 0.6-ha mechanized model farm integrating dryland technologies.

"As El Niño threatens to cause a prolonged dry spell, we're maintaining a dryland model farm using techniques, machines, and technologies that conserve water and promote sustainability," Lex Taguda, project lead, said.

The location-specific technologies include a solar pump for irrigation, 4-wheel tractor for rotovation and harrowing, mechanical transplanter, and combine harvester. Farm machinery ramp, irrigation drop box with fixed hose, and drainage canals were also installed in the model farm.

The dryland mechanized model farm will be featured at the station during the 2023 Wet Season Lakbay Palay.

- FRANZEL MONIQUE D. BONILLA



Region 8 Rice Derby is on

PhilRice Bicol is showcasing its technologies in a 4.5-ha area, as it participates in the 137-ha technology demonstration effort at Villaconsuelo, Naval, Biliran.

Public hybrids Mestizo 1, Mestiso 99, and 103, which yields range from 5.4 to 6.7t/ha were featured. Crop establishment practices using the drum seeder, mechanical transplanter, and drone with NSIC Rc 506 as variety were also shown.

Promoted as well were "Abonong Swak" recommendations that encourage farmers to combine organic and inorganic fertilizers to achieve current yields based on budget.

As part of the 2nd Provincial Hybrid Rice Cluster Farm and Balanced Fertilization Strategies Technology Derby, the area is open to the public until October 2023.

- MICHAEL L. SATUITO



Seed quality control tightened

To ensure the highest quality in producing seeds, PhilRice Isabela participated in a recent training on Internal Seed Quality Control conducted by the Institute's Seed Technology Unit and Rice Seeds System Program.

"Our station is a key player in the supply of hybrid and inbred seeds for the National Rice Program and Rice Competitiveness Enhancement Fund. We also supply seeds for private hybrid seed producers. It is imperative that our seeds should pass seed quality controls as they impact the whole rice sufficiency thrust of the country," Joy Bartolome A. Duldulao, OIC- branch director, said.

With the training, the station can address critical seed production, storage, and distribution challenges. It will also be able to efficiently maintain genetic purity, preserve seed viability, and minimize the risk of seed-borne diseases.

- DIANA P. LIM

“Abonong Swak” introduced in Maguindanao

PhilRice Midsayap is promoting the “Abonong Swak” nutrient management approach in eight Maguindanao del Sur municipalities to help farmers cope with the high fertilizer cost.

Members of the KABULNAN River Irrigation System have learned about the three combinations of inorganic and organic fertilizers based on the target yield: Combo 1 aims for 3-4t/ha, Combo 2, 5-6t/ha; and Combo 3, 7-8t/ha. Following the Abonong Swak formula, farmers could save P2,000 to P4,000 a hectare.

The System covers Shariff Aguak, Datu Hoffer, Datu Unsay, Shariff Saydona Mustapha, Mamasapano, Datu Saudi Ampatuan, Ampatuan, and Datu Abdullah Sangki towns.



“Abonong Swak” also encourages farmers to use diagnostic tools such as Minus-One-Element Technique (MOET) kit, soil test kits, Rice Crop Manager Advisory Service (RCMAS), Leaf Color Chart (LCC), and ICT-based tools available online for more precise recommendations.

“The activity was great as I gained useful information for us to save on

fertilizer cost,” Manan S. Pangalao said after the knowledge-sharing and learning activity. - KIMBIE A. PEDTAMANAN



More climate-smart varieties distributed in Region 4

PhilRice Los Baños continues to distribute seeds in Southern Tagalog to improve seed availability and access to stress-tolerant rice varieties.

About 300 packs, each containing 5kg of seeds of either rainfed varieties Sahod Ulan 13 and 18 or saline rice varieties Salinas 13 and 17 were released to farmers for propagation.

Farmer-recipients were from Noveleta in Cavite; Gumaca, Mauban, and Tiaong in Quezon; and in Marinduque and Palawan.

Local government units, DA Regional Field Offices, Agricultural Training Institute, and the Rice Competitiveness Enhancement Fund Program are behind this initiative. - CHERRY ROSE F. PIÑON



RCEF increases yield of Aeta farmers

The Marikudo Tribe, a community with 1,200 members, in Isabela, Negros Occidental has increased its yield from 2.7t/ha to 3.8t/ha through the certified inbred rice seeds from the RCEF Seed Program.

Rolando Enario, 56, said that NSIC Rc 222 and PSB Rc 10 brought them good

yield as these are climate-resilient and pest resistant.

He also said that PalayCheck, which they learned from the program, also contributed to the yield increase.

- GIRLIE A. CARREON



Scaling S&T toward societal outcome and impact



Dr. Leocadio S. Sebastian

Undersecretary for Rice Industry Development
Department of Agriculture
(PhilRice Executive Director, 2000-2008)

What is our societal responsibility as S&T workers?

In answering this question, I address claims that the Philippines' neighboring countries have far overtaken us in agricultural development. This, despite the irony that they have learned from us or sent their agriculture scholars to study here. Indeed, we were once their teachers, but now we find ourselves learning from them.

My experience working with our ASEAN neighbors, particularly Malaysia,

Thailand, and Vietnam, has shown me where we massively lag behind: we fail to scale or commercialize many of our S&T outputs and innovations. Our local scientific discoveries have fallen short of community-wide and global impact by instigating social transformation.

Make no mistake: we have developed a wealth of ideas, tested numerous models and prototypes, conducted countless demonstrations and training programs, and published an abundance of materials. Yet all these come to naught.

Why is this the case?

If you ask a ten-year-old child or the average adult about their perception of a scientist, the cliché is unmistakable: a scientist dons a white lab coat and is confined in a laboratory full of test tubes and microscopes.

This perception of scientists, confined to laboratories and focused solely on research outputs, persists from childhood into adulthood. To effect real change, we must shift our perspective and embrace a broader vision. Our work should transcend disciplinary boundaries and bring about tangible improvements in people's lives, societies, and the world.

We have always pinned the blame on policies, regulations, and lack of

incentives for the stagnation of scientific impact in our country. However, I find infinitely more fault in our mindset. We have not been taught to work for societal outcomes or impacts. We mistakenly believe that it isn't our responsibility.

Instead of solely focusing on publishing papers and earning accolades, we must ask ourselves: What societal outcomes or impacts can our work achieve? This shift in mindset will enable us to connect with our "next users," including government agencies, private sector entities, NGOs, and others. By empowering them and incentivizing their involvement, we can amplify the impact of our innovations.

Another barrier to scaling our S&T outputs is the lack of sustained support and long-term planning. Our plans are as transient as our leadership. We're constantly in a rush to solve problems, seeking immediate answers. Quick fixes and band-aid solutions may offer temporary relief, but often prove costly in the long run. We must embrace rehabilitative approaches that address the root causes of issues and lead to lasting change.

Take, for example, the current Masagana Rice Industry Development Program (MRIDP). Our aim is to elevate rice farming from mere production to significantly improving farmers' income.



A bountiful harvest should translate to bountiful profits. To achieve this, we must incentivize farmers by connecting them to the market and ensuring they earn a good income, ultimately leading to higher rice self-sufficiency—the main objective of Masagana RIDP.

Using MA-SA-GA-NA as the four core strategies, we can achieve lasting impact.

MA-tatag aims to boost farmers' climate change resiliency by adjusting the planting calendar during the wet season, shifting main production to the dry season, and promoting crop diversification and crop-livestock-fisheries integration using balanced fertilization, proper irrigation, and other climate-smart practices. SA-ma-sama aims to develop economies of scale by clustering farmers and consolidating farms in the village and municipal levels, converging interventions and resources. Farmers will be linked to millers and the NFA, enabling cooperation among them, millers, and government institutions to achieve better prices, better-quality rice, and appropriate seed distribution. This is the essence of GA-nado, or the value chain approach. NA-papanahon reinforces the first three

approaches by providing timely and accurate information for decision-making, making interventions digitally based, location-specific, and efficient.

So why don't farmers adopt most of the technologies we demonstrate? What's wrong?

We want farmers to use our technologies, but our farmers are not in the same boat. They see technologies as an additional expense, contradicting their immediate concerns: higher prices for their palay, bigger income. In other countries, they didn't just improve production—they also transformed the market.

Hence, a bountiful harvest should translate to bountiful profits. To achieve this, we must incentivize farmers by connecting them to the market and

ensuring they earn a good income, ultimately leading to higher rice self-sufficiency—the main objective of Masagana RIDP. Once we achieve 95%-97% rice self-sufficiency, we can't limit farmers' production; instead, their motivation to see profits will pave the way for rice exportation.

As S&T workers, we must challenge our outdated image and focus on achieving societal outcomes for millions of rice farmers, stakeholders, and consumers. By prioritizing impactful outputs, we can contribute to the Philippines' pursuit of food security, aligning with the words of National Scientist Gelia Castillo, who believed that "Science should serve a human purpose."

Let us collectively prioritize societal outcomes and impacts. 🌾



FEATURE

Changing the cropping calendar for plant survival

JOSHUA P. MENDOZA

While other Bukidnon farmers had hesitated to plant because of the El Niño phenomenon advisory early this year, Leonilo Arcadio, 49, President of Cabanglasan Farmers Small Water Impounding System Association, Inc. (CAFSWISA) and his fellow members adjusted their planting calendar to assure that they would still have enough water supply should drought hex the province.

It may seem a gamble at first glance, but the SWISA acknowledges the harsh reality that to survive farming in today's changing climate, they need to adapt.

Early bird catches the worm

Their *panuig* (first cropping season of the year) usually starts in July. But this year, because of El Niño, they started to

prepare their land in April so that they could start planting earlier with hopes of harvesting in August.

"We changed our existing cropping calendar because if ever rain would elude July, we would still have enough water in our small dam," Arcadio figured it out.

The plan was then presented during the bi-monthly assembly of 50 CAFSWISA members who collectively till 87ha of ricefields.

Leonilo proudly shared that 90% of their members cooperated to change their cropping calendar and planted rice synchronously. Despite this achievement and their efforts, he admitted that there are still members who didn't participate because they feared the uncertainties.



We changed our existing cropping calendar because if ever rain would elude July, we would still have enough water in our small dam.

- Leonilo Arcadio



"Some areas here are newly planted as we just had continuous rain. But most of our members have already prepared their land aligned with our irrigation schedule," he said.

Water pump

Aside from planting earlier, the association also prepared a water pump should water shortage occur during the flowering stage. The water supply from their mini dam will not be enough to irrigate their crops once it reaches critical level. They have learned the hard way during the past El Niño episode when they only harvested once in 12 months due to a dry spell.

Weather forecast

For Leonilo, watching out for the weather forecasts is helpful. Had it not been for the weather updates, they would not have been informed of the urgency of El Niño that called for planning.

As a farmer, it has been his routine to always wait for the weather forecast on TV every night. He said that there had been many times that his rice field was saved by simply knowing if there's an upcoming low-pressure area or typhoon.

He added that if he missed the weather updates on TV, he would always watch replays on social media platforms like Youtube.

As of this writing, El Niño effects are yet to be felt by the Cabanglasan farmers. In case the weather disturbance will become alarming, an emergency meeting will be conducted by their Board of Trustees to lay down strategic interventions.

One of the interventions being considered is the change of crop from rice to melon or mungbean, which only need a little water to survive. They are also looking at dividing their members

into two groups and selecting who will cultivate rice and other crops that can withstand such extreme weather.

As an association, they have taken every possible measure to prepare strategically for El Niño. However, the true scourge of this event, which may persist until the first half of 2024, remains uncertain.

CAFSWISA farmers said they consistently achieve high yields during *panuig* but with the looming threats of El Niño, their concerns are mounting. Despite these challenges, their unwavering optimism fuels their determination to outsmart the unpredictable forces of nature.

Only time will reveal whether their preparations and hopes will prove sufficient in the face of this climatic uncertainty. 🍌



START IT UP

Convincing rice growers to form clusters

HANAH HAZEL MAVI B. MANALO

Clustering and consolidation of 100-ha rice fields is not as easy as 1-2-3. Farmers' resistance and apprehension, and threats of El Niño could make clustering a bit challenging.

However, the challenge was accepted by Leowin Briones, 41, Hagonoy, Davao del Sur municipal agriculturist who has overcome those hurdles in establishing in June the 100-ha hybrid rice cluster demo farm.

According to Briones, "In farm clustering and consolidation, production is made efficient by reducing costs where small-scale farmers are working together for a single combined and increased unit of production. Convincing the farmers to take part in this endeavor is very important."

Briones reported that from April to May, rice coordinator Jurevey Lagaras conducted a series of meetings with the farmers, even on weekends to explain the purpose and benefits of establishing a hybrid rice cluster demo farm. The farmers were provided with certified seeds, seven bags of fertilizers per hectare, and technical assistance. Yield from

the demo farm will also be theirs. They sought the help of the two irrigators' associations (IA) in their area that served as clusters for the said activity. And their patience and hard work paid off.

One of the IA members, Alexander Hernane, 49, recalled that he agreed to join the hybrid cluster because free seeds and fertilizers were provided.

However, more than the free inputs, he joined the demo farm because of the higher yield that hybrid rice promises. He planted a private hybrid in the 1.18ha of the demo farm.

Analyn Malik, 38, is also an IA member who did not have any second thoughts about participating in the demo farm. She said that she's not afraid to try new rice varieties. She planted a private hybrid in her 1.15ha, which was part of the demo farm. She also shared that she's benefitting from the planting protocol of the private company by learning new things. She used to plant at a distance of 24cm x 24cm. Now, she practices 20cm x 20cm for more yield.





In farm clustering and consolidation, production is made efficient by reducing cost where small-scale farmers are working together for a single combined and increased unit of production. Convincing the farmers to take part in this endeavor is very important.

- Leowin Briones

Briones was also worried about El Niño affecting their demo farm, so he talked to their partner agency, the National Irrigation Administration, to prioritize them. He also had a series of online meetings with the DA for the planning of the said activity. The 100-ha hybrid rice cluster demo farm showcases four new rice varieties together with the public hybrid Mestiso 20. Apart from the demo farm, Hagonoy also hosts the 16th National Rice Technology Forum in its 32ha field. Briones took these activities as an opportunity for Hagonoy to be

reputed as a rice producer if the results are favorable.

Briones is hopeful that their farmers could pick the best variety suited to their area from among those featured in the demo farm to boost their yield to at least 10t/ha. Hagonoy has averaged 7-8t/ha in the past. He also looks forward to seeing them appreciate the value of consolidating and clustering their farms to increase their production and reducing their costs. 🍌

agriculture , soil-testing support, rainwater harvesting, scaling alternate wetting and drying, apply National Color-Coded Agricultural Guide, and provide climate advisory service

- 15 **NFA, Agribusiness and Marketing Assistance (AMAS), PhilRice:** Market support, 30-day buffer stock, and link to Kadiwa stores
- 16 **BPI, Fertilizer and Pesticides Authority (FPA), Bureau of Agriculture and Fisheries Standards (BAFS):** Regulation

Champions

- 1 **Bureau of Agricultural Research (BAR):** RDE support
- 2 **Bureau of Plant Industry (BPI):** Rice seed certification, and import regulation
- 3 **Philippine Rice Research Institute (PhilRice):** Rice RDE, RCEF Seed Distribution and Extension components
- 4 **Agricultural Training Institute (ATI):** Capacity-building and training programs for farmers, extension workers, and other stakeholders
- 5 **National Irrigation Administration (NIA):** Irrigation systems development, maintenance, repair, and rehabilitation; adjustment of planting calendars
- 6 **Bureau of Soils and Water Management (BSWM):** Soils and water concerns
- 7 **National Food Authority (NFA):** Ensures buffer rice supply from local produce

17 **Philippine Crop Insurance Corporation:**
Crop insurance, coverage,
social safety nets

GOVERNMENT FINANCIAL INSTITUTIONS

17 Philippine Crop Insurance Corporation: Crop insurance, coverage, social safety nets

- 8 **PhilRice:** Seed distribution
- 9 **PHilMech:** Mechanization
- 10 **ATI, Technical Education and Skills Development Authority, PhilRice:** Extension
- 11 **Land Bank of the Philippines (LBP), Development Bank of the Philippines (DBP):** Credit
- 12 **Government Financial Institutions:** Financial assistance

GOVERNMENT FINANCIAL INSTITUTIONS

- 13 DA-RFOs:** Provision of fertilizers, hybrid seeds, certified seeds, seed reserves, machinery, and soil ameliorants; biofertilizers, composting facilities, and drone services

18 LBP, DBP, Agricultural Credit and Policy Council (ACPC) Credit facilities, crop production loans, financing programs; expanded SureAid

- 14 DA-Adaptation and Mitigation Initiatives in Agriculture (AMIA), DA-Disaster Risk Reduction and Management (DRRM), PhilRice, NIA, International Rice Research Institute (IRRI): Climate-smart

LOCAL GOVERNMENT UNITS 19

Land-use Planning: Prioritization of agricultural lands and protection from conversion.

Infrastructure Development: Irrigation systems, farm-to-market roads, and postharvest facilities

Market Linkages: Market access for farmers through the establishment of farmers' markets, agri-tourism initiatives, and partnerships with the private sector

Extension Services: Technical assistance, training programs, and advisory services to farmers

OTHER NATIONAL GOVERNMENT AGENCIES

Departments of:

● **Social Welfare and Development:**

Programs on poverty alleviation, enhancing farming communities' welfare, calamity and disaster support for farmers

for the rice farmers

WRITTEN BY: **SHEREEN RAZON-FRANCIA**
ILLUSTRATED BY: **REUEL M. MARAMARA**



● **Education:** Agricultural education and integration of agriculture-related subjects in the curriculum

● **Agrarian Reform:** Agrarian reform programs, providing land and support services to beneficiaries

● **Trade and Industry:** Local and international promotion and marketing of rice products; support to

rice processors and exporters, including business development services, market research, and trade facilitation

● **Interior and Local Government:** Implementation of local-level agriculture-related programs and policies

● **Science and Technology:** R&D support, technology transfer, postharvest technology, precision farming and ICT solutions, capacity-building and training

● **Environment and Natural Resources:** Land use and resource management, environmental compliance, ecosystem preservation–watershed protection, R&D, climate change adaptation, capacity-building, policy alignment

● **Finance:** Budget allocation, tariffs and trade policy, taxation, agricultural financing, economic development, inflation and price stability

● **Commission on Higher Education (CHED):** Promotion of agricultural courses and rice S&T through the State Universities and Colleges (SUCs); Rice R&D

PRIVATE SECTOR, NON-GOVERNMENT AND CIVIL SOCIETY ORGANIZATIONS

20 **Rice millers, seed, fertilizer, and/or chemical companies, farm service providers (agricultural drones, machines):** Expedite investment and economic growth, technology and innovation, market access and value chain development, R&D, and knowledge transfer and capacity building

● **Partners include:** IRRI, Rice Board, Philippine Rice Industry Stakeholders Movement (PRISM), Kapatid Angat Lahat for Agriculture Program (KALAP), Agrilever, NatureTech

FARMERS AND FARMERS' GROUPS

21 **PRIMARY PRODUCERS:** Quality production, adoption of modern techniques

22 **Irrigators' Associations, Small water impounding systems associations (SWISAs), agrarian reform beneficiaries organizations (ARBOs), and Farmers' Cooperatives and Associations:** Facilitate small-scale farmers' better access to resources, credit, and markets; knowledge sharing, training and capacity building, price negotiation, and collective marketing, market linkages, value addition and diversification, participatory decision-making

Transforming Philippine agriculture is a mission that every Filipino has a stake. The MRIDP stands as a beacon of hope and progress but its success would only work if we converge, cooperate, and coordinate. Let us unite as one nation for a sustainable tomorrow.



In the spotlight.

Farmers Julio Tomas, Nolito Jacinto, and Hilario Bernabe of Piddig, Ilocos Norte, felt honored and valued when they met President and Agriculture Secretary Ferdinand R. Marcos Jr. in Malacañang. With this privilege, they said that farmers are now recognized and taken good care of by the government.

"Before, traders controlled the prices and we had little support from the government. Now, we feel the change," said Julio, 79, president of the Sociedad de Labradora Sallaguid Irrigators' Association since 1987.

In this third-class municipality situated some 25km northeast of Laoag City, along the rolling hills between the Guisit and Dingras Rivers, the "Basta Piddigueño, Agrihenyo: Consolidated Farm Production System," which was established in 2014, has been improving farmers' access to high-quality rice seeds, fertilizer management, market opportunities, and welfare.

Harvey Adap, municipal agriculturist, said that the system has contributed to the doubling of harvest from 60cav/ha to 120cav/ha and a decrease in production cost from P11.52 to P6.75/kg of *palay*. The town's poverty incidence also

contracted from 30% in 2010 to 5.59% in 2022.

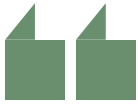
In harmony

Along Piddig's hilly terrain with rice plains dotting the landscape, 28 zanjas or irrigators' associations (IA) plant the same variety and follow a common schedule of land preparation, field irrigation, and harvesting. Close to 1,000 farmers embody rice farming as a communal affair where kins come together to cultivate their livelihood and nourish their spirits. As the delicate rice seedlings emerge, so too do the tender shoots of care for each other, nurtured by shared

Consolidated farming: Piddig's progressive revolt

CHARISMA LOVE B. GADO-GONZALES





My expenses in farming went down by 50% and I was able to mechanize my farm through the easily available machines from the association. We were given free seeds and fertilizers, our crops are secured with an insurance, and we're able to bargain for better *palay* price.

- Julio Tomas



efforts, laughter, and the warm glow of the sun.

"Before, we were individual farmers and doubtful of the benefits of cooperation, but now, we are progressing together," Nolito, 59, said.

Almost 1,500ha are already consolidated in Piddig, a 2022 Galing Pook Awardee, which also practices the "Wealth Creation in Consolidated Agricultural Lands" thrust to achieve economy of scale in the rice value chain.

Gathering the farmer-soldiers, Engr. Eduardo "Eddie" Guillen, former mayor and now head of the National Irrigation Administration, organized the zanjeras associations and established the Piddig Basi Multipurpose Cooperative (PBMPC). Piddig is known for its historical significance in 1807 when town heroes started the revolt for basi, a liquor fermented from sugar cane juice.

Like a general in a rise for higher productivity for farmers, Admin Eddie, as he is called by his townmates, "courted" the zanjera members, promising and explaining to them the gains if they consolidate their farms.

"He steps into the muddy fields with us, visits us, and prioritizes us even if his visitors would have to wait for him in his office. We're number one in his daily activities," Julio said.

Nolito, president of the Riquido IA, said that Admin Eddie stressed in their meetings that receiving government support and creating more market opportunities are made easier through consolidation.

"He did not get tired explaining so we said yes. We do not regret joining in the consolidation project as our lives are financially better now," Noli sounded grateful.

Mobilizing support

Municipal agriculturist Harvey attested that farmers would not be enjoying the results of consolidation now without the efforts made by Admin Eddie. In his previous interview with PhilRice Magazine, Admin Eddie lamented that some agencies they had expected to help were infected with the *kanya kanya* mentality.

He was turned down by certain agencies but was not discouraged. Admin Eddie lobbied for his plans in the National Convergence for Sustainable Rural Development, a platform for collaboration by development agencies in partnership with the local government units.

Admin Eddie then won the support of the departments of social welfare and development, trade and industry, tourism, public works and highways, and agriculture.

Through the convergence, farmers were provided with free life insurance, machines that made up a rice processing center that now also produce brown rice, and farm-to-market roads, among other agricultural interventions. Farmers also have access to the drone acquired by their LGU for fertilizer application.

Admin Eddie sustained these improvements through ordinances, memorandums of agreement, and long-term partnerships among the stakeholders.

In joy and better life

Julio said that Admin Eddie worked to fulfill his promise that farmers' lives would be better through consolidation.

"My expenses in farming went down by 50%, and I was able to mechanize my operations through the easily available machines from the association. We were given free seeds and fertilizers, our crops are secured with insurance, and we're able to bargain for better *palay* price. We used to sell our products to the Bulacan traders, but with the cooperative buying our harvest, we're able to save P20/k from other expenses. I can also borrow from the Coop with 1% interest per month," he enumerated the blessings.

Meanwhile, Nolito shared that among the gains he received from joining the cooperative, he benefits most from the "kilo deposit," which allows him to stock his harvest, then withdraw it when the price is higher. He experienced "depositing" his *palay* at P19.50/kilo, then withdrawing it after six months at P25/kilo.

Hilario Bernabe was also able to venture into the rice milling trade with some of the investment from the cooperative's profit.

Piddig farmers have placed themselves in the spotlight by overcoming their selfish mentality. As they waded through the verdant paddies sowing seeds of togetherness, they not only cultivate rice but also the timeless connection that binds their hearts. The rice fields become peaceful amidst the murmurs of the wind and the gentle swaying of the stalks, celebrating togetherness. 🌾



PARTNERS IN THE FIELD

Better farmers' market to benefit children's nutrition

MINARD F. PAGADUAN AND YOBHEL LOUISSE P. BELTRAN

As agriculture becomes increasingly complicated, exacerbated by the ill effects of climate change and volatile market conditions, nutrition has taken center stage in the fabric of our collective well-being. Regrettably, the crucial role of farmers in shaping the nutritional landscape often remains in the shadow of towering concerns such as crop yields, economic sustainability, and environmentally sound practices.

At times, it requires an external impetus to continue motivating rice growers to also engage in the pursuit of improved nutrition. This outside force could be a partnership that will not only be a catalyst for change, but will also nurture both the rice crops and the dreams and aspirations of those who grow them.

Kiwanis International's commitment to help the Castillejos Farmers' Agriculture

Cooperative (CFAC) by buying their products is founded on the recognition that eating brown rice has the potential to markedly improve the well-being of our undernourished children.

"I'm grateful for this partnership as for the first time in my 9 years with Kiwanis, we will not only be helping the farmers market their produce, but we will also be expanding their high-quality brown rice market that will sustain a youth-feeding program," said Gov. Glenda Hufano of Kiwanis International-Philippine Luzon District.

Hufano's visit to Castillejos, Zambales witnessed firsthand the challenges faced by farmers. These struggles arise due to their limited bargaining power, which is further compounded by the dominance of rice agents within their communities.

"The rice produced by the farmers goes through several traders, leading to inconsistent availability. This unsustainable practice prompted us to step in and support farmers by purchasing their produce," she said.

For a service organization like Kiwanis, the buying program represents a significant breakthrough as it addresses two



I'm grateful for this partnership as for the first time in my 9 years with Kiwanis, we will not only be helping the farmers market their produce, but we will also be expanding their high-quality brown rice market that will sustain a youth-feeding program.

- Gov. Glenda Hufano



Gov. Glenda Hufano (L) shares her vision of a "loving legacy" that is anchored in improving children's welfare through healthier rice produced by local farmers.



RiceBIS and Kiwanis International partnered to enhance farmers' market on brown rice while improving children's nutrition.

avenues of assistance simultaneously. It not only eases farmers' lives but also improves children's health and nutrition.

Sustained market

CFAC started as an association and grew to be officially registered under the Cooperative Development Authority in 2018. This change reflects the belief that farming can go beyond the usual practice of selling freshly harvested palay to traders. PhilRice's Rice Business Innovations System (RiceBIS) Community Program has played a role in shaping a fresh perspective.

The multi-agency supported RiceBIS project took off in October 2020 through a series of trainings on rice production, processing, organization-building, management, and agro-enterprise interventions. The cooperative takes pride in its achievements as it managed to market brown rice to institutional buyers and local rice consumers.

"We have supplied over 5,000kg and gained a net income of P98,195 a season," said CFAC Chair Mac Arthur Manglicmot.

A remarkable quantity of brown rice was sold to Nutri Dense Food Manufacturing Corporation, serving as raw material for their health products. The brown rice product launched in 2021 is packaged in 25kg sacks and is priced at P65/kg.

"At the start, our production of brown rice was limited to just a few packs, catering to a small local market. But through our partnerships with institutional buyers, we have expanded our reach, enabling us to provide to a more intensive local customer base. Interestingly, local customers approach us first," Manglicmot said.

Breakthrough agreement

As CFAC's production of brown rice continued to grow successfully supplying Iba and Olongapo City, they

also entered into an agreement with Kiwanis, now a sure market for the next two years, starting October 2023. The rice will be sourced from the farmer-members who plant NSIC Rc 160.

"For six months, the Kiwanis' mission will lead us to public elementary schools and Aeta communities in Luzon to conduct feeding programs for undernourished children using the brown rice from RiceBIS Zambales," Hufano said.

"The partnership with Kiwanis International greatly assists us in marketing our products. We're also committed to enhancing our business capabilities to produce high-quality brown rice for our buyers while also contributing to the improvement of children's health and nutrition," CFAC's Manglicmot is optimistic. 🍌



FEATURE

Climate-Mapping backs up farmers

JOSHUA P. MENDOZA AND PAMELYN S. IMMATONG

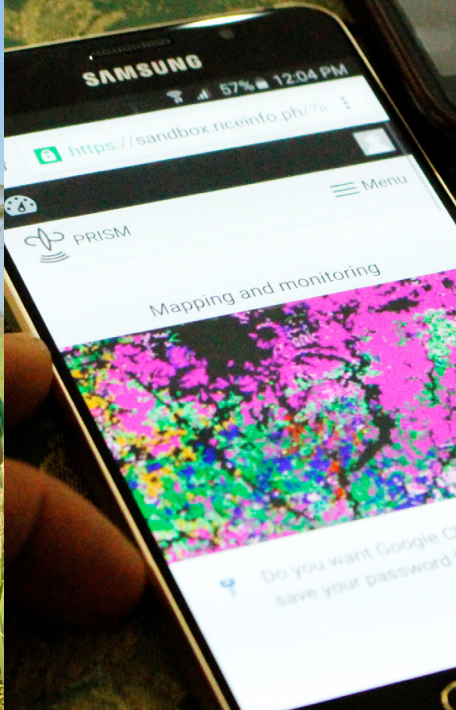
The sun is merciless, scorching the earth with its fiery rays. Rain is scarce, leaving the soil dry and cracked. Crops are withering, losing their color and vitality. Farmers and their families are suffering, struggling to make ends meet. This is the reality of farmers who face the challenges of climate change and extreme weather events.

To help farmers who need urgent government support, two projects provide policymakers with accurate, timely, and location-specific information data and maps to guide them in planning and executing

strategic interventions. The Climate-Smart Maps for Strengthening the Adaptation Plans of Farming Communities (CS Map) project is developing climate-smart maps for rice production areas in the country. These maps show the suitability of rice varieties for different climate scenarios, as well as the vulnerability and adaptive capacity of farming communities. Initiated early this year, CS Map is generating information by mapping climate-related risks for rice production combined with land suitability, and developing adaptation and sustainability plans

for at least 50 rice-producing provinces within six years.

"It was conceptualized based on the instructions of Dr. Leocadio S. Sebastian, DA undersecretary for rice industry development after the successful implementation of a similar project in Vietnam. In the Philippines, it is funded by the DA National Rice Program spearheaded by PhilRice in collaboration with stakeholders such as the DA regional field offices (DA-RFO) and attached agencies, government bureaus working on climate and weather systems, local government units



PRISM is working together with Climate-Smart Maps and Adaptation Plans (CS Map), to produce vulnerable rice areas under different drought classifications, which can be provided to the Department of Agriculture.

- Dr. Sonia Asilo



(LGU), and farmers,” said Dr. Leylani Juliano, a chief science research specialist at PhilRice.

Meanwhile, Philippine Rice Information System (PRISM) is the first satellite-based rice monitoring system in Southeast Asia that provides accurate and timely information through statistics, maps, and reports. It covers rice production area, crop health, crop losses due to natural calamities, and assessment and extent of pest damage. It complements CS Map.

With the El Niño phenomenon threatening the rice sector, Dr. Sonia Asilo, PRISM damage assessment component lead, said the system works with CS Map to produce maps

of rice areas vulnerable to drought classifications.

She said PRISM uses the drought forecasts from PAGASA to classify the rice areas into three categories: dry condition, dry spell, and drought. Dry condition means that an area is drier than usual due to lack of rainfall, but not severe enough to be considered as drought. Dry spell is a more prolonged period of dry weather than dry condition. Drought is the most severe category and can last for months or even years. From this information, CS Map analyzes the rice areas vulnerable to drought during the El Niño events in 2016 and 2019, then compares them to the normal years. This helps provide

alerts on the phenomenon’s recurrence.

The monthly outlooks provided by PAGASA on the areas potentially affected by the three categories were also analyzed and overlaid with the current rice areas. The vulnerable areas were then identified at the regional and provincial levels.

“These maps were provided in July this year to the DA-RFOs for their reference and validation of the affected areas,” Juliano said.

PRISM and CS Map also generate information on typhoon-affected rice areas to be validated by the DA-RFOs, PhilRice stations, and LGUs.

Juliano said that CS Map also analyzes data from various sources, such as the Rice Competitiveness Enhancement Fund programs, PAGASA, Pest and Disease Risk Identification and Management, Philippine Statistics Authority, National Irrigation Administration, Bureau of Soils and Water Management, and Department of Science and Technology.

After processing data on climate, environment, and crop production, a spatio-temporal information will be generated to support the proposed local adaptive plans for rice and rice-based farming communities. 🍃



Ease in rice farming, thanks to digitalization

KIARA MAE E. PANYO

A pioneering movement is taking shape, driving a transformation in traditional rice farming practices in Leyte.

One of the drivers of change is Engr. Fermina Aling, a 69-year-old visionary farmer, and owner of JAMPOL Integrated Farm School, who has embraced the theory of digitalization to propel her community toward a future of agricultural prosperity. With the help of innovative applications, Fermina and her fellow farmers are unlocking the potential of digital agriculture to overcome challenges and enhance productivity.

Hailing from Alangalang town, Fermina discovered the promises of digitalization in agriculture through her training at PhilRice's Training of Trainers (TOT) program. Further honing her knowledge through the Digital Agriculture Course (DAC) training provided by Agricultural Training Institute (ATI), Fermina embarked on a mission to promote digital tools among rice farmers, empowering them to adapt to the rapidly evolving agricultural landscape.

"Using these applications at my age has never been a problem. It has given me more ease in monitoring the farm. With





Using these applications at my age has never been a problem. It has given me more ease in monitoring the farm. With a swipe of a finger, the information that I need is already provided for me

- Engr. Fermina Aling



a swipe of a finger, the information that I need is already provided for me," said Fermina.

The key to this agricultural renaissance lies in her adoption of rice applications tailored for the modern-day farmer. Among these, she uses the Binhing Palay app and it has become a go-to resource, offering a comprehensive catalog of Philippine rice varieties with various filters for easy selection-based on location, environment, and season. She also utilizes the MOET (Minus-One-Element Technique) app that simplifies fertilizer management, allowing farmers to compute the appropriate field fertilizer requirement or predict rice yields based on personalized fertilization plans.

"I used to input the field fertilizer requirements and do the calculations manually, but with the use of the MOET app, it does the computation for me," she said.

She also uses the LCC (Leaf Color Chart) app, which provides real-time fertilizer recommendations. Leveraging artificial intelligence, she tries out the eDamuhan to help her identify weeds and manage them.

Empowering farmers through digital marketing

Fermina's vision extends beyond the fields to the digital realm, as she explores the power of social media and digital marketing in promoting agricultural products. Recognizing the impact of captivating pictures and compelling

advertisements, she advocates that farmers leverage social media platforms like Facebook to reach wider audiences and showcase their produce.

"Using social media is one of the fastest ways to promote our products as everybody is using it. You just have to use it wisely to reach your target audience," she said.

Moreover, her training has introduced her to e-banking, enabling wired farmers to embrace digital payment methods for added convenience and efficiency in financial transactions.

A testament to success

Mirroring Fermina's endeavors is Rosalie Badajos, a 29-year-old farmer technician at ALDE Farm in Babatngon, Leyte. Rosalie has seamlessly integrated rice applications into her daily field monitoring routines. Embracing the MOET, AgriDoc, LCC, and Binhing Palay apps, Rosalie has experienced the time-saving and efficiency-boosting capabilities of these digital tools.

Through her active engagement on social platforms, she has successfully introduced cutting-edge technologies and farming practices to her peers, encouraging broader participation in agricultural activities.

"Being active on social media is also one way to promote digital agriculture because by promoting our farm school, technologies, and farming practices, it encourages farmers to take part in our activities," Rosalie said.

Rosalie shared how they once posted in their Facebook page about the use of rice bug attractants in the rice field to minimize infestations, and it piqued the interest of many farmers. This post eventually led to other farmers adopting the technology in their areas.

"As a daughter and a technician, I have also shared these rice applications with my parents. I can attest that these applications have helped me greatly in my field monitoring. These apps are meant to be shared," Rosalie declared.

Challenges and solutions

While digitalization opens new horizons, it is not without challenges. Fermina and Rosalie acknowledge that limited access to digital phones, internet connectivity, signal problems, and difficulties in navigating apps can hinder some farmers from fully benefiting from these tools. To address this, they highlight the importance of alternative information avenues such as the PhilRice Text Center (0917-111-7423).

The journey of Fermina and Rosalie exemplifies the incredible potential of digitalization in agriculture. Through their dedication and enthusiasm, they have become agents of change in their communities, transforming traditional farming into a dynamic, technology-driven enterprise. As Leyte farmers continue to embrace digital agriculture, they pave the way for a brighter and more sustainable future in the world of rice farming. 🌱



FEATURE

For Tomas Gajete, a 66-year-old rice farmer and retired Central Luzon State University (CLSU) soil science professor from Rosales, Pangasinan, life as a farmer had been encumbered with uncertainties and challenges.

With 46 years of farming experience, he recalled the struggle of relying on guesswork and luck to navigate the ever-changing climate conditions that undesirably affected his agricultural practices and overall productivity.

Like many farmers, Tomas had constantly labored to manage his rice field's water supply and determine the right time to plant, fertilize, and protect his crops from pests and diseases. Farming was risky, and every decision carried the weight of potential loss or gain. Fortunately, he learned about a project that aimed to help farmers like him. The project is called Smarter Approaches to Reinvigorate Agriculture as an Industry (SARAI). It provides crop advisories tailored for rice, corn, banana, coconut, coffee, cacao, sugarcane, soybean, and tomato. These advisories combine local weather

information and drought forecasts with farming tasks, particularly nutrient and water management, as well as proactive monitoring of pests and diseases.

A ray of hope

"Advisories from SARAI can be accessed by [tuning to] the Radyo CLSU Live

program, through short message service (SMS), and by the project staff's visits to farmers," shared Tomas, reflecting on how they relied solely on physical visits and SMS just a few years ago.

Now that he has moved to an "un-connected" province, he relies on receiving updates from his son, who

SARAI: Transforming farming

CHRISTINE A. NICOLAS





It's my aspiration for our nation to reap the rewards of this project, even in areas not directly involved. That's why I encourage local government units to invest in their automatic weather stations worth P350,000 to advance farming in their communities,

- Tomas Gajete



still works on the project and sends advisories via SMS whenever he requests them. The information Tomas receives and passes on continues to have a positive impact by providing timely advice to farmers in their community, enabling them to make informed decisions regarding their rice fields.

SARAI was launched at CLSU in 2014. Backed by the DOST - Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD), the project emerged to mitigate climate change risks while equipping its stakeholders with targeted crop advisories. Its vision was to establish regional and community-level SARAI hubs where farmers could access timely and accurate information to make informed decisions.

At its core, the project crafts crop advisories that seamlessly weave local weather data and drought forecasts into strategic farm management practices. SARAI leverages technology to introduce near real-time monitoring, using remotely sensed images to empower farmers with precise insights into their production areas. Implemented by the UP Los Baños, in collaboration with 11 state universities and colleges and six national government agencies, SARAI exemplifies collective efforts for a resilient future for agriculture.

A tale of sustainable agriculture

Thanks to SARAI, gone are the days of uncertainty and guesswork for Tomas.

"In my view, I've transformed into a modern farmer using science and technology like SARAI. No more guesswork or worries in farming and farmers nearby wait for my lead as they've seen the benefits – saving water, better crops, more income, less risk," he asserted.

With the help of SARAI technologies, such as the adaptive cropping calendar and site-specific nutrient management, Tomas efficiently managed his water resources, ensuring that his rice plants received the right amount of water during crucial growth stages.

The integration of weather forecasts and nutrient management practices optimized his crop yield, resulting in over 7t/ha from an inferior 4t/ha. "SARAI technologies and weather forecasting guide me in deciding when to plant rice. For instance, with a total rainfall of 200mm, we can start rice production; for corn, only around 120 mm is needed before planting," he added.

Moreover, the use of SARAI technologies significantly reduced Tomas' reliance on fuel, fertilizers, and pesticides, promoting sustainable farming practices. As a passionate advocate of SARAI technologies, he also actively contributed to the project's success at the university. He played a pivotal role as project staffer, assistant project leader, project leader, and consultant from 2014 to 2021.

"In the initial stages of SARAI at CLSU, we conducted three years of research

on adaptive cropping calendars and site-specific nutrient management for rice, corn, and soybean within the university. We also field-tested these technologies and the automatic weather station among farmers in the Science City of Muñoz and Lupao," he explained.

Even after retiring on July 1, 2019, former professor Tomas persevered as a consultant and continued to farm as a hobby, practicing both SARAI and PhilRice technologies, including the PalayCheck System. Tomas now feels more confident in making decisions based on data-driven insights, resulting in improved agricultural productivity and increased income.

SARAI's positive impacts extend beyond individual farmers like him. If adopted by a larger community of farmers, they could revolutionize local agriculture.

"It's my aspiration for our nation to reap the rewards of this project, even in areas not directly involved. That's why I encourage local government units to invest in their automatic weather stations worth P350,000 to advance farming in their communities," Tomas emphasized.

Aligned with the vision of establishing regional and community-level hubs, SARAI holds the potential to uplift countless farmers across the Philippines. As the country is now after a more sustainable and climate-resilient agriculture sector, SARAI stands as a beacon of optimism, guiding farmers toward a more prosperous and brighter future. 🌱



FEATURE

Good debt pays off

ANNA MARIE B. BERTO



The notion of debt often carries a heavy burden of negativity and caution as Benjamin Franklin said, "If you would know the value of money, go and try to borrow some; for [they] that go a borrowing go a sorrowing."

For the South Agusan Multipurpose Cooperative (SAMPCO), the word "debt" did not conjure images of financial distress and burdensome obligations. Cooperative officials instead envisioned it as a potent instrument for financial growth and prosperity.

Extending loans to its members was one of the "treatment" plans that the cooperative implemented to revive the organization. When it became stable, the Coop borrowed money from government institutions to add up to their assets and business.

Entangled past

Like other groups that suffered from multiple pains, SAMPCO toiled day and night just to get to where they are today – a successful, fulfilled, and a united group of seed growers, whose hearts beat for the farmers.

If Mary Jane Ytac were to describe the status of their cooperative more than ten years ago, she would liken it to a critically ill person.

"It needed intensive care and medication, otherwise, it would fall," the 43-year-old treasurer of SAMPCO said.

She was a new member then. If not for the trust given to her by one of their directors, Celedonio Demegillo, she would not have stayed.

Yul Plaza, also new at that time, learned of the Coop's history.

"We heard of discrepancies, anomalies, and poor management. Good thing there was a new pool of officers when I enlisted as a member," the 59-year-old seed grower said.

With their diagnosis in mind, Mary Jane and the rest of the SAMPCO officers took the challenge to execute "treatment" plans and avoid burying this group based in Trento, Agusan del Sur that had existed since 1993.

Curing broken ties

SAMPCO was joined by seed growers from other provinces in Caraga. From 25, their membership grew to 65 around the year 2010. It was also during those years that they faced hurdles. As a result, several of their affiliates lost trust, so that only a few of them remained active.

The officers and board of directors then committed to reviving the group. They went to the members' households one by one.

"We asked them to return. We gradually paid what the Coop owed them," Mary Jane said. They also encouraged the members to sell their rice seeds to the Coop and patronize their palay-buying business. The officers dispatched the only truck they owned to fetch the rice seeds from their associates' warehouses. They made sure to pay the members first and quickly, hoping their trust would be restored.

"We also fixed our transaction records. We signed letters of agreement, and we took note of clients' purchases, so we could show them to our members who sold their *palay* to us," Mary Jane recalled.

After two cropping seasons, the officers' hard work and sincerity grew well among their members. The mutual trust had crept back.

Support loans, support groups

While their ties have been getting stronger, the SAMPCO officers also took a shot at availing of loans to grow their assets and business activities.

From 2017 to 2021, they received a yearly loan of P5M through the Agrarian Production Credit Program, a tie-up among the LandBank of the Philippines, Departments of Agriculture (DA) and Agrarian Reform (DAR), and the Department of Environment and Natural Resources (DENR). Every six months, they had to pay the bank P2.5 million.

After that, LandBank offered SAMPCO a P10M loan for their working capital, payable in one year.

"We never missed our dues for those loans," Mary Jane smiled proudly. The Coop collected payments very strictly and their members found it positively annoying.

These loans helped them build capital, support their members, and engage in other forms of businesses. While the amount seemed enormous, the Coop did not hesitate availing of such because they knew it was the only way to grow.



We can avail of farm machine rentals at lower cost. My rice seeds also have had sure market for quite a time now because I am a member of the Coop. I purchased a four-wheel vehicle, and SAMPCO helped me with it. Our lives as farmers are truly easier now.

- YUL PLAZA



"We didn't have other sources of funds. We just made sure that the loans were safe and the interest was minimal," Mary Jane rationalized.

They also received a rice mill machine from the ConVerge project of DAR and the International Funding for Agricultural Development. DAR also provided them trainings on business and marketing strategies.

Their local government unit was also supportive to the Coop and the other farmers in their community. They established farm-to-market roads to ease transportation activities.

The Philippine Center for Postharvest Development and Mechanization provided various farm machines to SAMPCO under the Rice Competitiveness Enhancement Fund (RCEF) Mechanization Program. These include a mobile dryer, rotovator, and combine harvester. Their rice processing system is also on its way.

Alive and kicking

Reviving their cooperative was not an easy feat for the SAMPCO officers. But their healing process was worth it.

"We grew, thankfully! From P3-6M in 2015, we already have P62M worth of assets! We are considered a medium cooperative, with 95 active members. If not for all kinds of support we received, we might not have achieved these," Mary Jane relished the good news.

They now maintain various businesses including farm machine rentals, *palay* trading, and commercial rice selling. They are also one of the contracted seed growers' cooperatives of PhilRice under the RCEF Seed Program, supplying around 25,000 sacks of certified seeds every cropping season.

As it should be, their group success also benefits their members. Mary Jane said they now see their fellows being able to buy motorcycles and other vehicles, Yul being one of them.

"We can avail of farm machine rentals at lower cost. My rice seeds also have had sure market for quite a time now because I am a member of the Coop. I purchased a four-wheel vehicle, and SAMPCO helped me with it. Our lives as farmers are truly easier now, thanks to our responsible officers," Yul was grateful.

Meanwhile, SAMPCO gained another source of strength last year when they received an award from DAR for being one of the top five agrarian reform beneficiary organizations with huge marketing sales for their rice and rice-based by-products.

Today, Mary Jane, alongside her fellow officers Marilyn Buano, Mary Ann Bunalos, and Aimee Tulang, said they feel more than just healing.

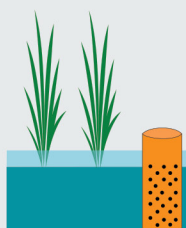
"We are now the doctors, it seems. We graduated from the challenges with a doctorate degree," Marilyn joked. 🍌

Technologies to help cope with El Niño

WRITTEN BY: FREDIERICK M. SALUDEZ
INFOGRAPHICS BY: SARAH JOY N. RUIZ

JULY TO SEPTEMBER (mid-tillering to flowering)

Alternate Wetting and Drying (AWD)



A water-saving technology without decreasing rice yield. It is done through observation wells in the rice field, which indicate the right time to irrigate the crops.

Too much water in the field induces weak stems and fewer tillers, and favors pests like Brown Planthopper.

Diseases such as Bacterial Leaf Blight/Streak and Sheath Blight can be avoided through the AWD formula.

LCC App pro



A mobile application for nutrient management.

It generates nitrogen recommendation in just under a minute based on digital images of intact rice leaves captured directly from the field.

Efficient nitrogen-use reduces costs and prevents lodging and pest infestation.

Avoid too much application of nitrogen during rainy season that leads to more pests and diseases.

NOVEMBER TO DECEMBER (fallow period to planting)

Use recommended varieties



drought-tolerant (PSB Rc 10, NSIC Rc 152, 440); heat-tolerant (Rc 600, 602); submergence-tolerant (Rc 194, 590)

Direct seeding



direct-seeded rice matures 7-10 days earlier than transplanted to cope with water scarcity; eliminates costs on seedling production and transplanting

Application of organic fertilizers

increases soil water and nutrient-holding capacity

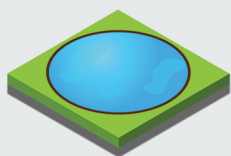


El Niño is a “climate pattern that describes the unusual warming of surface waters in the eastern Pacific Ocean.” For PAGASA, this condition brought about by El Niño “increases the likelihood of below-normal rainfall conditions, which could bring negative impacts such as dry spells and droughts in some areas of the Philippines.”

To respond to the phenomenon, which will be more punishing and unforgiving this year, DA-PhilRice collectively put together an array of strategies that can help farmers prepare against El Niño during the second half of the year.

OCTOBER TO NOVEMBER (maturity to post harvest)

SWIP (Small water impounding project)



Used in low-lying rainfed areas to store water in a pond as irrigation source for the next cropping season

The pond can also be used as fish pond.

Harvest at the right time



Harvest rice when grains are 90-95% matured. Use combine harvester for faster operation to escape typhoon or heavy rains. Dry the grains using mechanical dryers to maintain quality, even during rainy days.

Palayamanan Plus



planting fast-maturing cash crops with less water requirement alleviates water scarcity and makes the land productive

Mulching with rice straw



natural ground cover to reduce moisture evaporation; prevents weed emergence

Staff

EXTRAORDINAIRE

MINARD F. PAGADUAN

Hats off to our awardees and retiree!



Dr. Roel R. Suralta

Roel R. Suralta, 49, has earned his place in the prestigious Asian Scientist 100 list in the 2023 edition of Asian Scientist Magazine through his contributions to the field of root science. He also now holds the distinguished title of Academician in the National Academy of Science and Technology (NAST), a pinnacle of

recognition and scientific counsel in the Department of Science and Technology.

Suralta's journey began in a small community within Camotes Islands in Cebu, where he was involved in farming alongside his family. This early exposure instilled in him a deep understanding of the challenges faced by rice farmers and the paramount importance of improving their quality of life.

Initially pursuing Agricultural Engineering due to his confidence in his mathematical abilities, he later switched to BS Agriculture at Visayas State University (VSU) after discovering his genuine passion for agriculture while working as a student assistant. His dedication and hard work culminated in a cum laude distinction upon his graduation in 1994, majoring in Agricultural Botany. He then pursued and achieved his master's degree in Agronomy, specializing in Crop Physiology, at UP Los Baños (UPLB) in 2002.

Guidance from Dr. Leocadio S. Sebastian, a former PhilRice executive director now Agriculture Undersecretary, led him to explore a novel research avenue. While environmental stressors were actively

Dr. Nonawin L. Agustin

Dr. Nonawin L. Agustin, 32, has made significant strides in plant genetics and root research. Her work focuses on addressing abiotic stresses that threaten global food security, particularly in the face of climate change, which poses risks to agricultural yields, poverty rates, and food availability.

Agustin received the 2023 Outstanding Young Scientist Award from the NAST in recognition of her remarkable contributions. Her recent study identified the wavy root elongation growth 1 (weg1) gene, promoted lateral root 1 (plr1) and osmed25 mutation genes, which could

being addressed by breeders, the rice plant's root system remained relatively uncharted territory; hence, his research on it.

In 2004, just four months after his marriage, he enrolled at Nagoya University in Japan, supported by the Monbukagakusho Scholarship. He completed his PhD in Agricultural Sciences (Biosphere Resources Cycling Systems) in 2008. He returned to Japan in 2013 for his postdoctoral fellowship.

Suralta's research focuses on root plasticity has resulted in a 50% increase in efficiency and a remarkable 95% reduction in labor and supply costs in drought breeding. His work has also led to the development of advanced rice lines capable of withstanding occasional drought and soil moisture fluctuations while maintaining a high productivity.

He has received numerous prestigious recognitions, including the Presidential Lingkod Bayan Award by the Civil Service Commission in 2013 and the Gawad Saka Award in 2016 as an Outstanding Agricultural Scientist for Central Luzon.



aid rice in drought tolerance, particularly in water-scarce rainfed lowlands. She is a fellow under the Balik-Scientist Program of the DOST-PCAARRD hosted by the DA-Crop Biotechnology Center at PhilRice.

Raised in Tabuk City, Kalinga, Agustin was immersed in agriculture from a young age due to her father's passion for farming. She then delved into science, participated in science fairs, and conducted experiments at home, earning the nickname "albularyo" within her family. Her academic excellence, leadership roles in school, and determination secured her scholarships.

At UPLB, Agustin initially pursued Agribusiness Management but switched to BS in Agriculture (Agronomy) after almost two years. Despite the switch, she graduated on time in 2011. During

her studies, she developed a passion for research, and her thesis was nominated for the College's Best Thesis award, boosting her confidence and motivation.

She joined the Institute upon graduation where she received a Special Citation under the 2013 Dangal ng PhilRice (Research Staffer Level II) award.

Her pursuit of knowledge led her to Nagoya University, Japan, where she earned her Master's and PhD degrees in Agricultural Sciences, specializing in Plant Genetics, Breeding, and Epigenetics.

Having completed the Women Leaders Program at Nagoya, Agustin gained international exposure to innovative agricultural technologies in Vietnam and Malaysia. She aspires to bring these advancements to the Philippines.

Manuel Jose Cajayon Regalado

65 years old, 35 years in DA-PhilRice

A prominent gentleman in the agricultural engineering, he stands as a testament to unwavering commitment despite humble beginnings. His journey began in Daraga, Albay, where financial challenges in his childhood did not deter his ambitions.

While initially considering a career as a CPA, his deep-rooted connection to farming and engineering emerged during weekends spent alongside his father in the fields. A memorable experience involving a rice thresher unveiled the potential of engineering in agriculture. This event guided him to earn a BS in Agricultural Engineering from UPLB in 1980.

Regalado's professional career started as a research assistant at UPLB's College of Engineering in 1979. Later, he contributed significantly to an agro-forestry development program in Ilocos Norte, under the Ministry of Human Settlements.

In 1988, Regalado joined PhilRice, where he became a pioneering staffer in the Rice Engineering and Mechanization Division. His projects



revolutionized production and post-harvest processes, benefiting farmers across multiple provinces. Throughout his tenure, he exemplified the qualities of a true public servant, supporting his family and extending help to others.

One of his most significant achievements involved groundbreaking research projects such as the Associated Technologies, Rice Crop Manager, and WaterRice, which developed innovation technologies and irrigation advisory services.

supported by scholarships, including the PhilRice & CSC LSP Scholarships and the JSPS Ronpaku Fellowship. He earned his Master's from UPLB in 1999 and a PhD from Iwate University in 2001.

Dr. Santiago R. Obien (SRO), first PhilRice director, emphasized Manny's ability to identify problems and engineer practical solutions, as seen in the development of the PhilRice rotary reaper. When a typhoon left a field of lodged palay seemingly impossible to harvest, SRO suggested using a grass cutter. Manny explained that the cutter's fast rotation would scatter rice straw chaotically.

During his JICA training in Tsukuba, Japan, SRO was surprised by Manny's project, which focused on controlling the grass cutter's rotational speed for proper cutting and neat laying of rice stalks in a windrow. Manny returned with a transformed grass cutter, equipped with four rotary disc blades, evolving into the PhilRice rotary reaper.

SRO also acknowledged Manny's pivotal role in establishing the DA-Crop Biotechnology Center (CBC). While concepts of crop/animal/fish biotechnology has existed for some time, it was Manny's initiative and proposal that secured funding from the PL480 program, resulting in the creation of the CBC.

Regalado's academic journey was



VOXPop

► FREDIERICK M. SALUDEZ

When can you say that you're MASAGANA?

Joel Fernandez

Tarlac

MASAGANA means sufficient and safe food for my family, a decent way of life and being able to provide for the needs of my children, especially their education.

When my yield is high, food is enough, sufficient budget for farming tools, and debt-free, then I am a MASAGANA farmer.

Clemente Obina

Isabela

If my yield reaches 150 sacks/ha, then I am MASAGANA. My profit will be assured. I'll become popular not only in our town but also in our province. This achievement will depend on using certified seeds as here in Bagabag, only good seeds are available.

Fernando Salim

Bagabag, Nueva Vizcaya

Kevin Godoy

Leyte

When yield is high and palay is reasonably priced, farmers are MASAGANA.

I can confidently claim that I am MASAGANA when my crops remain unaffected by typhoons or extreme heat, and most importantly, when there are no pests in my rice fields. I will also be happier if palay price is higher.

Buenafe Balbuena

Surigao Del Norte

Harold Villanueva

NCR

When there's bountiful harvest.

William Punzal

Nueva Ecija

When harvest is doing well and farmers are supported by the government, then, we are MASAGANA.

If what I reap from farming is more than enough for my family's needs.

Esmeralda Casiño

Davao Del Sur

As a farmer, I can confidently say that I am prosperous when I am not lazy. Bountiful harvest will never come to a lazy farmer. Diligence will help secure fruitful harvest and substantial earnings.

Precencia Dumanias

Occidental Mindoro

Maximo Timajo

Sorsogon

Abundant harvest, good and decent living, healthy well-being, and no one left hungry.

Mario Davela

Isabela

When the weather is favorable and our rice crops grow well, life becomes prosperous.



OUR VISION

Advanced science and technology for
prosperous rice-farming communities
toward sufficient and affordable rice for all



DA-PHILRICE CENTRAL EXPERIMENT STATION
Maligaya, Science City of Muñoz, 3119 Nueva Ecija

BRANCH STATIONS:

DA-PhilRice Batac, MMSU Campus, City of Batac, 2906 Ilocos Norte; Mobile: 0919-944-3016; Email: batac_1.station@mail.philrice.gov.ph
DA-PhilRice Isabela, Malasin, San Mateo, 3318 Isabela; Mobile: 0999-889-3027; Email: isabela.station@mail.philrice.gov.ph; philriceisabela3318@gmail.com
DA-PhilRice Los Baños, UPLB Campus, Los Baños, 4031 Laguna; Tel: (49) 501-1917; Mobile: 0993-631-9175; Email: losbanos.station@mail.philrice.gov.ph
DA-PhilRice Bicol, Batang, Ligao City, 4504 Albay; Tel: (52) 431-0122; 742-0690; 742-0684; Email: bicol.station@mail.philrice.gov.ph
DA-PhilRice Negros, Cansilayan, Murcia, 6129 Negros Occidental; Mobile: 0909-129-3763; Email: negros.station@mail.philrice.gov.ph
DA-PhilRice Agusan, Basilisa, RTRomualdez, 8611 Agusan del Norte; Telefax: (85) 806-0463; Email: agusan.station@mail.philrice.gov.ph
DA-PhilRice Midsayap, Bual Norte, Midsayap, 9410 Cotabato; Mobile: 0938-374-1040; Email: midsayap.station@mail.philrice.gov.ph

SATELLITE STATIONS:

Mindoro: Alacaak, Sta. Cruz, 5105 Occidental Mindoro; Mobile: 0919-495-9371
Samar: UEP Campus, Catarman, 6400 Northern Samar; Mobile: 0921-555-5500; 0948-754-5994; Email: jasienes@exchange.philrice.gov.ph
Zamboanga: WMSU Campus, San Ramon, 7000 Zamboanga City; Mobile: 0975-526-0306

DA-PhilRice Field Office, CMU Campus, Sayre Highway, Musuan, Maramag, 8714 Bukidnon; Mobile: 0909-822-9813; Email: philricefocmu.2019@gmail.com
Liaison Office, 3rd Floor, ATI Building, Elliptical Road, Diliman, Quezon City; Mobile: 0928-915-9628



PhilRice TV



www.philrice.gov.ph
www.pinoyrice.com



0917-111-7423



DA-PhilRice



prri.mail@philrice.gov.ph