DEPARTMENT OF AGRICULTURE
1898
PHILRICE

Philippine Rice Research Institute

MILESTONES

2019-2020

Quality Rice. Quality Life.

MILESTONES

2019 - 2020

Quality Rice.
Quality Life.

MILESTONES 2019-2020

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Note: The contents of this publication were written based on the annual reports submitted by branch directors, program and project leaders, and division heads.

MESSAGE FROM THE EXECUTIVE DIRECTOR

What started as a normal implementation year (2019) of our 2017-2022 Strategic Plan suddenly treaded into a period (2020) of anxiety and tentativeness. On 31 December 2019, the World Health Organization (WHO) was alerted to a cluster of pneumonia cases that authorities confirmed a week later to have been caused by a novel coronavirus (COVID-19). The first local case of the disease was reported on 20 January 2020 (in WHO Philippine Situation Report by the DOH on 9 March 2020). Proclamation No. 929 was then issued on 16 March 2020 declaring a state of calamity throughout the Philippines due to COVID-19. The DA leadership rallied all its personnel to hold the agriculture fort together – to survive, reboot, and grow.

The 'new normal' work-life environment that reigned and unbalanced most of 2020 has been described as disruptive and unprecedented in terms of the challenges it brought, to say the least. But there was much work to be done not only in our regular R4D jobs, but also in our new assignments under the Rice Competitiveness Enhancement Fund's (RCEF) seed and extension programs. Amidst the threats of the pandemic and community quarantine conditions, we persevered and literally worked "round-the-clock while locked" alongside other food workers, frontliners and authorized persons outside residence (APORs) to deliver services and coping interventions to our rice farmers and other stakeholders.

The collective and determined effort to reach more adopters of high-quality inbred rice certified seeds during the year reaped a marvellous dividend in the end. The higher yield attained by RCEF seed beneficiaries was seen as instrumental in the record-high palay production outcome of 19.29 M metric tons in 2020 as reported by the Philippine Statistics Authority (PSA). Indeed, sometimes when things seem to be falling apart, they may actually be falling in place. This is not to say, however, that we were left unscathed by the pandemic situation. The decrease in our 2020 target achievements was attributed to COVID-19 infection threats to our staff and also to its recurrent disruption (force majeure due to mandatory stay/work at home arrangement or significantly downsized personnel deployment) of some on-farm and lab-based research activities, developmental works, project monitoring travels, scheduled trainings, and the like.

We made full use of digital tools as a workaround in fulfilling our R4D commitments. To reach out to our farmers, stakeholders, R4D collaborators, students, unique users, and the general public, PhilRice utilized the largest social media platform, Facebook, as a consequence of the COVID-19 pandemic. In 2019, our FB page likes increased by 60% from 36,014 to 57,637. In 2020, we increased our engagement with all stakeholders to 276,802. Our Text Center received 99.4% satisfaction rating from clients after responding to 19,862 queries in 2019. In 2020, our Text Center recorded 164,708 registrants and received 23,908 text queries of which 92% were responded to within an hour. Our Pinoy Rice Knowledge Bank (PRKB) also registered 81,908 website visits and 340,046 content downloads of 34 uploaded knowledge products (KP). We also added public relations (PR) value to our R4D activities in 2020 through news releases shared in our website and circulated among our media partners. The coverage of our broadcast releases and radio segments similarly widened as we partnered with seven national and community radio stations. We shifted from full face-to-face to blended learning in the management and delivery of our trainings (RSTC and TOT) and in handling our briefings and field days.

Through the '*Palay at Gulay, may Ani, Hanapbuhay, Oportunidad, at Nutrisyon*' (PAG-AHON) project we implemented from May to November 2020, some 30,859 kg of assorted vegetables were produced by our farmer collaborators and members of the Lupao Vegetable Growers Association. The project was also able to link the group to known consolidators who bought 21,253 kg of the Association's produce. The rest were sold to local and online buyers. This project was a model implementation of DA's Adopt a Town 'Gulayan sa Barangay' program. Through massive vegetable gardening in public areas, idle private spaces, and residential backyards, the program intended to enhance household food security as well as to bring and stabilize food/vegetable supplies and prices in the metropolis during the pandemic. A farmer-participant in the rice-veggie techno-demo component or '*gulayan sa palayan*' also harvested more than 3 tons from her half-hectare rice field she planted with the variety NSIC Rc 216.

We issued institute-wide memorandum orders and followed PDITR protocols in coordination with our RHUs and LGUs to manage the COVID-19 pestilence. Our Human Resource Management Office (HRMO) and its psychometrician staff members launched "Kumusta Ka-PhilRice?" and a 24/7 hotline in partnership with the United Registered Social Workers to support our employees experiencing mental health issues brought about by the pandemic and stressful quarantine regulations. This was also in compliance with RA 11036 and the Civil Service Commission's Memorandum Circular No. 04, series of 2020. Additionally in the same year, we passed the transition audit for ISO 9001:2015 (QMS), ISO 14001:2015 (EMS), and migration audit to 45001 (OH&S). The migration to the latest ISO versions is a step in keeping health, safety, and environmental concerns paramount at DA-PhilRice as well as in creating a pleasant and hospitable workplace.

During the DA-PhilRice ManCom Meeting on the 4th of August 2020, I delivered a message on Business as Unusual at DA-PhilRice: Rejoinder to the Mid-Term Sectoral Reviews. In one of my slides, I shared the quote that "the opportunity is not simply in doing the right things; the opportunity is also in doing it right." As this is my first annual report message, I can confidently say that we harnessed our opportunities both ways. We aligned our Strategic Plan to DA's New Thinking and more recently to the OneDA Reform Agenda. We focused on technology push and scaling; prioritized products from our portfolio that delivered increased productivity, cost-effectiveness, and profitability outcomes. We also drove modernization and innovation as well as rice-based agro-enterprise and farm clustering through our SMARTer Rice (for research sector) and RiceBIS (for development sector) banner programs. The PalayCheck System was also revised in 2020 and now includes Postharvest Management as KeyCheck 9.

We automated more services and rolled out to our branch stations in 2020 several systems under our CoreMIS related to our financial management (including procedural and reportorial requirements from COA and DBM), our procurement and supplies, and our human resources. At the end of 2020, we had 12 career scientists, three staff members earned their advanced degrees (2 PhD, 1 Masters), and continued our excellence in journal and book publications as well as in patent and utility model protection. Gender and development (GAD) mainstreaming efforts were also integrated in our 77 projects in 2019 and 2020. We consider these as vital steps in ensuring gender equity and social inclusivity at DA-PhilRice. Finally, on December 10, 2019, the Bureau of Plant Industry issued the biosafety permit for the direct use of GR2E Golden Rice as food and feed, or for processing. This milestone is considered as a "victory for science-based regulatory decision-making" and has made the Philippines the very first country in Asia to join Australia, Canada, New Zealand, and the USA in affirming that Golden Rice is perfectly safe.

John C. de Leon
Executive Director

2017–2022 Timeline

A look at the Institute's progress in executing its Strategic Plan.

Adoption of the Strategic Plan

Our Vision: Rice-secure Philippines

Our Mission: To improve the competitiveness of the Filipino rice farmer and the Philippine rice industry and transform it to be more profitable, resilient, and sustainable through responsive, balanced, environmentally sound and partnership-based research, development, and extension

2017

Streamlined programs and projects to meet 100% target by 2022.

2018

2019

Beginning of RCEF Program Implementation

Masaganang ANI Mataas na KITA
RICE COMPETITIVENESS
RCEF
ENHANCEMENT FUND

Onset of Covid-19 Pandemic

Covid-proofing and disaster- proofing measures implemented

58% of targets met

2nd round of streamlining

2020

Where we are now

Catch-up of remaining targets (Target Completion Rate: 79%)

2021

100%

Completion of targets

2022

Strategic Foresight

Onwards to Rethinking Rice Security in the New Normal (2023-2028)

DA-PhilRice 2017-2

OUTCOME 1

Increased productivity, cost-effectiveness, and profitability of rice farming in a sustainable manner

Organizatio
Outcomes (IM

Increased adoption of high-quality seeds of developed/ released rice varieties and other component technologies in the project sites

Increased income of rice farmers/farming communities in the project sites

OUTCOME 2

Improved rice trade through efficient postproduction, better product quality, and reliable supply and distribution system

Rice Secure
Matatag, Maginhawa

CONSOLIDATION
MODERNIZATION

ONEDA

The One D
18 Key St

OUTCOME 3

Enhanced value, availability, and utilization of rice, diversified rice-based farming products and by-products for better quality, safety, health, nutrition, and income

OUTC

Strengthened institution

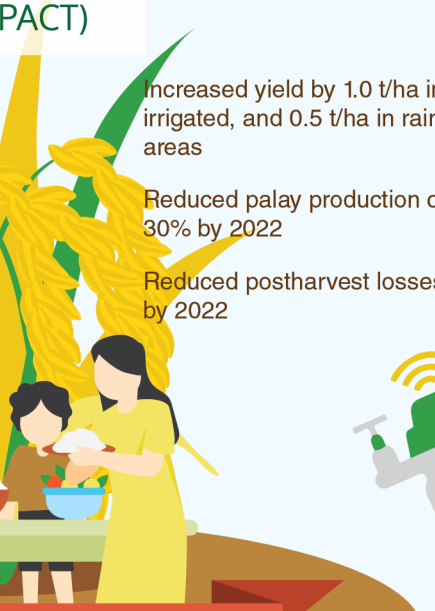
2022 Strategic Plan

nal
PACT)

Increased yield by 1.0 t/ha in irrigated, and 0.5 t/ha in rainfed areas

Reduced palay production cost by 30% by 2022

Reduced postharvest losses to 12% by 2022



Philippines
at Panatag na Buhay

INDUSTRIALIZATION
PROFESSIONALIZATION

DA Reform Agenda:
rategies

OUTCOME 4

Science-based and supportive rice policy environment

OUTCOME 5

Advanced rice science and technology as continuing sources of growth

OUTCOME 6

Enhanced partnerships and knowledge management for rice research for development (R4D)

OME 7

nal capability of PhilRice

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OUTCOME 1

Increased Productivity, Cost-Effectiveness, and Profitability of Rice Farming in a Sustainable Manner

Important changes are taking place in rice research and development worldwide as governments and international organizations are setting their goals, priorities, and policies on good governance in the effort to reduce poverty, hunger, malnutrition, and ultimately effect good health and inclusive economic growth and well-being for all.

As we continue to address these issues beyond 2020, PhilRice takes steps to fulfill our mandate beyond traditional practices to help achieve profound changes that can span a wide range of modern science- and research-based approaches and broader priorities with long-term impacts. From the minutest first resource, germplasm, the "substance of agriculture and food production", to the farm machines for land preparation, decision support, and diagnostic tools, we work to help our rice farmers.

OUTCOME 1 AT A GLANCE

Increased productivity, cost-effectiveness, and profitability of rice farming in a sustainable manner.

WHAT WE ADDRESS

Climate change adaptation

Limited productivity due to land scarcity

Water scarcity

OUR STRATEGIES

Conserve genetic resources and making their profiles available to increase utilization and direct use to support breeding of new varieties

Improve rice varieties

Mechanize farm operations

Develop yield-enhancing, risk- and cost-reducing technologies

Our part in the ONE DA REFORM AGENDA:

MODERNIZATION

- Technology & Innovation including Digital Agri
- Farm Mechanization & Infrastructure Investments
- Climate Change Adaptation & Mitigation Measures

OUR PROGRESS:
PERCENT ACCOMPLISHED BASED ON PHILRICE'S STRATEGIC PLAN

WHAT WE CREATED

971
Out of 1,960 seed stocks regenerated produced enough seeds.

1,342
Germplasms provided to end-users for characterization, evaluation, reference, demonstration, direct use, and repatriation.

57%
Priority TRVs with complete profile available for access by request from the GEMS database.

780
Rice accessions were characterized agro-morphologically.

3
Elite inbred lines for unstressed environment completed NCT Phase 2.

14
New inbred rice varieties approved for commercial release.

75%
Field efficiency of pilot-tested riding-type boat tiller for shallow mud field .

13hp
Gasoline engine powered the new and improved Makisig mini tractor prototype.

2
Water-harvesting models with soil conservation features were setup in Abra, Ilocos Norte, and Pangasinan.

1
Updated technoguide on AWD was produced and published online.

6
Breeding lines were found to exhibit high broad-spectrum resistance index value for bacterial leaf blight.

2
Apps (MOET and LCC) were updated, improved, evaluated and can now be downloaded.

1
RICM package was evaluated in five agroclimatic zones.

2
Hybrid varieties for NCT nomination.

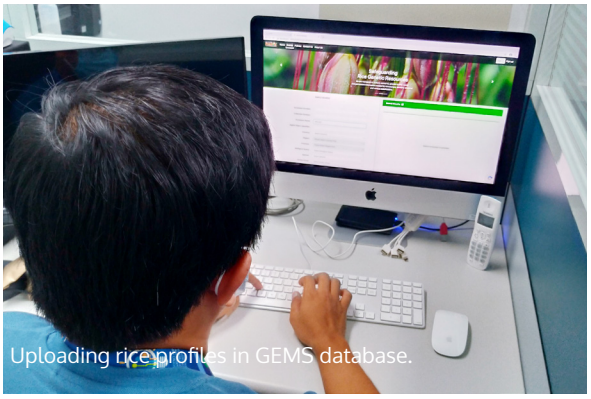
3
Machines for pilot-testing.


Inspecting rice seeds to ensure purity for the genebank.

Genetic conservation

Conserving genetic resources and 5,205 germplasm accessions in our genebank and making them available to stakeholders support and sustain our rice breeding program. We have increased the available accessions from 2,444 (47%) in 2017 to 4,180 (80%) in 2020.

We have distributed 1,342 accessions to researchers, farmers, local government units, academics, and students nationwide for characterization, evaluation, reference, demonstration, direct use, and repatriation.


Uploading rice profiles in GEMS database.

The Germplasm Management System (GEMS) database was updated with 2,721 new passport data (geo-reference data at barangay level with latitude, longitude, elevation, geodetic datum and uncertainty); 697 characterization data from 2019 WS field setups; 316 grain quality data (2019); 390 diseases data (blast and tungro-induced method); 2,131 roots evaluation data; and 3,656 active inventory data (12,286 seed packets) and 2,441 accessions at base.

Profiling germplasm accessions

By 2020, a total of 780 rice accessions were agro-morphologically characterized; 16 out of 279 accessions were found tolerant to progressive drought stress. For salinity stress at seedling stage, 16 and 145 accessions were found tolerant and moderately tolerant, respectively.

Amylose content (AC) and gelatinization temperature (GT) determine the cooking and

Analyzing AC and GT.

eating characteristics of rice. We completely profiled 214 accessions for grain quality (milling recovery and physical attributes); 479 and 498 were analyzed for AC and GT, respectively.

One black and 19 red rice accessions were analyzed for their total anthocyanin, phenolic, and flavonoid contents, DPPH-radical and ABTS-cation radical scavenging activities, and ferric-reducing antioxidant powers.

Also, the DNA of 2,082 traditional rice varieties (TRVs) were extracted using the modified CTAB method and banked in short- and long-term storages. Using short tandem repeat (STR) markers, 1054 TRVs were genotyped; 411 were analyzed.

Development and release of varieties

In 2019, nine PhilRice-bred varieties were approved for commercial cultivation by the National Seed Industry Council (NSIC): Rc552H, a nationally recommended hybrid, and 8 inbreds– Rc558 for saline-prone irrigated lowland; Rc560, Rc562, Rc564 for cool-elevated (low to medium elevation); and Rc568, Rc572, Rc574, and Rc578 for rainfed lowland. Yield advantage of these varieties ranged from 0.2 to 68.6%

Ten breeding lines were registered under the Plant Variety Protection (PVP): 3 special purpose and 7 mutant lines.

In 2020, five inbred varieties were released: Rc592 and Rc594 for rainfed lowland dry-seeded areas; Rc600 and Rc602 for high temperature (heat)-prone irrigated areas; and Rc604 for saline-prone irrigated lowland areas. Rc600 and Rc602 are our country's first heat-tolerant varieties. A total of 77 advanced breeding lines with multiple stress-tolerant traits for stressed ecosystem were identified and ready for the National Cooperative Tests (NCT).

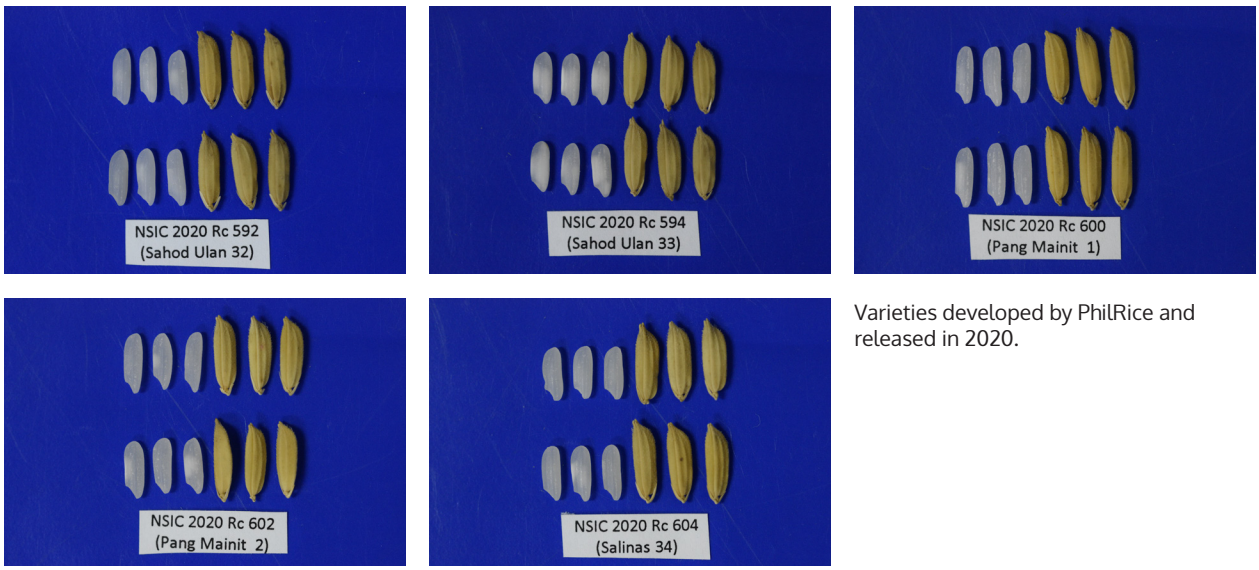
One CMS-based elite three-line hybrid (PR48800H) and the TGMS-based hybrid PRUP14 (AYT 191) were up for NCT nomination 2021 WS.

Mechanization, land preparation, and crop care


Rice Transplanter Attachment

Adequate land preparation is vital in rice cropping. A number of machines and systems that can effectively improve efficiency and minimize cost for land preparation and transplanting were developed.

A gear-transmission with pivot mechanism power tiller and attachments for land preparation and transplanting were fabricated. The gears, a major component of the machine, were produced through a partnership with the Metal Industry Association of the Philippines (MIAP).



Varieties developed by PhilRice and released in 2020.


Paddy Seeder attachment

A paddy seeder attachment prototype was also fabricated to test the increase in planting efficiency.

The prototype of the riding-type boat tiller with metal body for shallow-mud fields was pilot-tested in San Luis, Aurora and is now ready for commercialization. It can finish 0.5 ha in one hour with a field efficiency of 75%. An Isabela-based manufacturer is interested to mass-produce it.

The lightweight riding-type boat tiller for deep-mud fields was also tested and needs necessary modifications for improved performance.


MAKISIG prototype

Also developed were working prototypes for crop care. The new and improved MAKISIG mini-tractor is powered by a 13hp gasoline engine equipped with electric ignition system for easy starting. It has screw wheels to address mobility in wet and sticky soils.

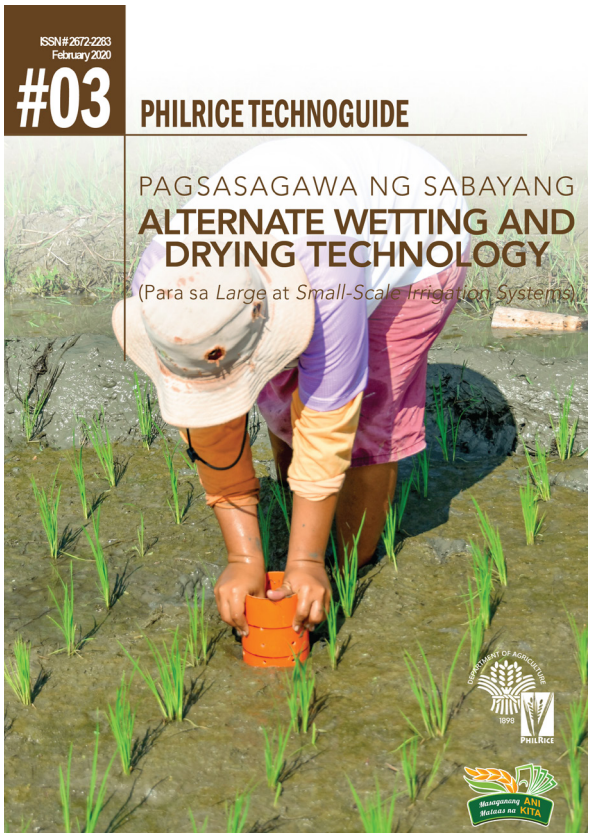

Three-row portable motorized weeder

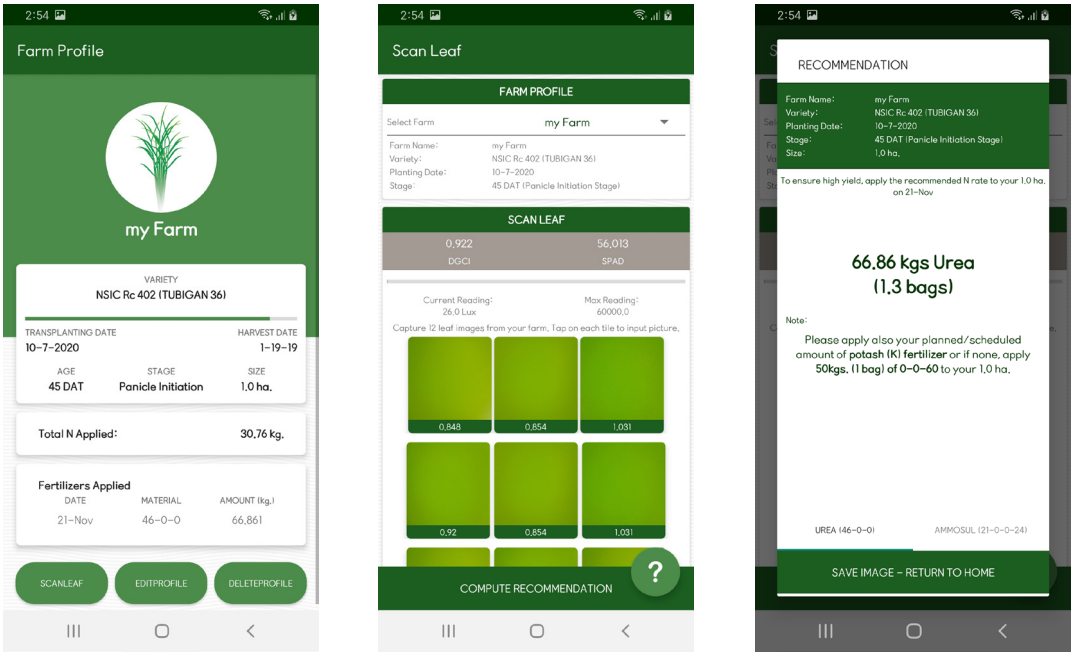
The three-row portable motorized weeder uses a 4-stroke single cylinder gasoline engine. It has a capacity of 1.5 ha/day and field efficiency of 71%.

Water-harvesting

A techno-guide on AWD Technology was released for extension workers, irrigation managers, and leaders of irrigators' associations to further guide them in water management.

We validated the effectiveness of two water-harvesting and soil and water conservation systems (for upland, terraced, and rainfed) in collecting, storing, and using rainwater for irrigation. Setups were established in Abra, Pangasinan, and Ilocos Norte.





Leaf Color Computing app

Models for upland and rolling rainfed lowlands are already for scaling out, while that for the rainfed lowland is being retrofitted with solar pumping and drip irrigation features.

Management approaches, decision support and diagnostic tools for rice

We created pest and disease management approaches such as the evaluation of the use of filter paper for preservation of beneficial organisms; evaluation of the effects of combinations of N&K fertilizer levels on grain yield and stemborer and BPH damage; determination of the critical period of controlling the lowland ecotype *Cyperus rotundus* weed; testing trap designs with crushed or uncrushed golden apple snails for rice bugs, and the use of the foil method in sheath blight resistance screening.

We also developed accurate and user-friendly soil and nutrient management apps that use mobile smart phones. The Minus-One-Element-Technique (MOET) App was updated in 2020. It now includes a more customized fertilizer recommendation suited for a desired budget level.

The Leaf Color Computing (LCC) App, designed to help farmers manage nitrogen fertilizer application, was also improved and released as a real-time N fertilizer management tool. It helps increase yields better than the previous version. The app was launched on the Google Play Store in September 2020.

We evaluated rice integrated crop management (RICM) packages in 5 agro-climatic zones at 4 on-station field trials and 10 on-farm field trials in Nueva Ecija, Isabela, Cagayan, Kalinga, Camarines Sur, Agusan, and Cotabato.

Evaluating diseases


2020 Seed delivery in Mindoro.

Seed Program

Created through Republic Act 11203, the Rice Competitiveness Enhancement Fund (RCEF) is aimed at increasing the income of rice farmers through yield improvement, cost reduction, lowering of postharvest losses, and rice value-addition.

The RCEF Seed Program (RCEF-Seed), one of the four components of RCEF being implemented by DA-PhilRice and its partners, focuses on the development, propagation, and promotion of inbred rice seeds. Further, the Program is directed toward the strengthening of the rice seed industry via the organization of rice farmers into seed grower cooperatives and associations engaged in seed production and trade.

The RCEF-Seed directly contributes to increasing the adoption of inbred certified seeds by achieving the following specific targets:

(a) 90% of farmers in the target areas are using inbred certified seeds (CS);

(b) 90-100% of farmer-beneficiaries plant the seeds they receive every season; and

(c) 90% of CS requirements in deficit regions are locally produced by seed cooperatives/ associations by 2022 and 100% until end of the Program.

The Program commenced in 2020 dry season (DS, Sep 16, 2019 - Mar 15, 2020) and is set to be implemented for six years (2019-2024), to be completed by 2025 DS (Sep 16, 2024 - Mar 15, 2025).

The Program is composed of four projects namely: (1) Promoting and distributing CS of inbred rice varieties; (2) Mobilizing and strengthening local seed production; (3) Supporting variety development; and (4) Strengthening farmers' organizations. The first project comprises the lion share of the budget and services of the Program with its two major activities: (1) distribution of free CS; and (2) conduct of RCEF PalaySikatan (technology demonstration and field days/walks).

Certified Seeds Distribution

The use of high-quality inbred seeds of recommended varieties could help increase farmers' yields by 10-15%. The Program distributes high-quality inbred certified seeds (CS) to RSBSA-listed farmers.

Originally, the RCEF-Seed covered 57 provinces, which were selected based on yield, area harvested, cost of production, and percentage of irrigated area. The Program operated in cities and municipalities within these provinces with at least 100 ha of rice area.

In 2020 DS, DA-PhilRice delivered 1.46 million bags of CS to 715 municipalities in 57 provinces. About 65% of the target or 1.38 M bags were distributed to 555,545 farmers with an estimated planting coverage of 698,586 hectares (ha).

For the second implementation season (2020 WS; Mar 16 - Sep 15, 2020), we delivered 2.37 M bags of seeds to 984 municipalities in 55 provinces covering 95% of the program's target. Of these, 2.29 M bags (92% of the target) were distributed to 867,704 farmer-beneficiaries through our partner-LGUs. These were estimated to cover 1,013,241 ha.

In 2021 DS (Sep 16, 2020 – Mar 15, 2021), about 1.7 M bags (101% of target) were delivered to 956 municipalities in 55 provinces. Some 1.65 M bags (98% of target) were distributed to 661,567 farmers for planting across 780,267 ha.

The Program even served Lanao del Sur and Maguindanao in 2020 WS using inventory seeds from 2020 DS, with 21,723 bags delivered in 37 municipalities. These were distributed to 11,325 farmers covering an estimated area of 11,281 ha.

Moreover, in 2021 DS, 4,886 bags of CS sourced out from the 2020 WS inventory seeds were delivered and distributed to 2,416 farmers in Abra, with an estimated area coverage of 2,114 ha. Additional 900 bags were also made available to 363 farmers in 3 municipalities in Maguindanao for planting in 451 ha.

To ensure social inclusivity, exclusive lanes for senior citizens, differently abled individuals, and other priority groups were set up in distribution sites. Farmer-beneficiaries who could not personally claim their allocation were allowed to be represented.

In three seasons of implementation, the RCEF Seed Program has deployed a web-based database and information system to internally track and monitor the progress of seed distribution. A suite of mobile applications has also been developed for enhanced stock management, and delivery and distribution processes. With these, age- and sex-disaggregated data were collected for use in policymaking and identifying improved interventions.

Despite formidable challenges on health, staff mobility, and seed logistics brought forth by the COVID-19 pandemic, the performance of the Program improved significantly, owing largely to our close coordination with and support from the DA-RFOs, LGUs through their OPAG and C/MAO, the BPI-NSQCS, and the seed grower cooperatives and associations to ensure proper and timely seed delivery and distribution.

PalaySikatan Technology Demonstration

This is one of the key activities of the RCEF-Seed Program to promote the use of certified seeds, mechanized farming, and other yield-enhancing and cost-reducing technologies, primarily in land preparation, nutrient management, and harvesting. Field walks and fora were also conducted to showcase the techno-demo farms to farmers in neighboring communities.

PalaySikatan aims to:

(a) showcase among farmers the field performance of certified seeds of recommended and newly released inbred varieties for national and regional uses when complemented with integrated crop management practices;

PalaySikatan field walk in Pampanga.

(b) demonstrate mechanized farming;

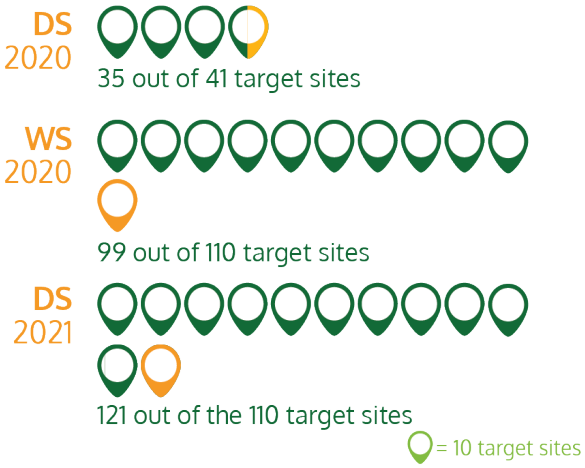
(c) document and compare the yields and cost performances of various technology packages shown in the demonstration;

(d) determine the most suitable technology packages for each province; and

(e) assess gender gaps, farmers' feedback, and willingness to adopt the demonstrated packages of technologies.

Ultimately, this should encourage adoption of newer varieties aimed at further increasing farmers' productivity.

PalaySikatan Sites Established



The number of PalaySikatan technology demonstration sites has consistently increased from 35 in 2020 DS, 99 in 2020 WS, to 121 in 2021 DS. Based on the data collected, the yield attained across locations in 2020 DS averaged 4.32 t/ha with a cash cost of P12.01/kg palay.

In 2020 WS, the average yield climbed to 5 t/ha and the cash cost dipped to P9.28/kg, which exhibits that the proper use of technology can enhance the productivity and competitiveness of rice farmers.

Emerging Outcomes

To pinpoint the emerging outcomes of the RCEF-Seed Program on the productivity of rice farming, our Socioeconomics Division conducted a monitoring survey through phone interviews with beneficiaries. An initial program outcome monitoring and evaluation was conducted in July-August 2020 among more than 6,000 RCEF farmers across 57 provinces for the 2020 cropping seasons.

Results indicate that farmers who planted RCEF seeds in 2020 enjoyed higher harvests than in the 2019 cropping seasons, when the Program was not yet in place. Average yield in 2020 DS was 4.02 t/ha, or 401 kg/ha (365 kg/ha at 14% moisture content) higher than that in 2019 DS. Similarly, the 2020 WS average yield of 3.96 t/ha was higher by 145 kg/ha (131 kg/ha at 14% MC) than the 2019 WS. Despite typhoons that affected the country in the last quarter of 2020, an incremental increase in yield was still achieved.

The higher yield attained by RCEF Seed beneficiaries was seen as instrumental to achieving the record-high palay production in 2020 at 19.29 M tons as reported by the Philippine Statistics Authority.

At 14% MC valued at P19/kg, the additional yield can increase the farmer's gross revenue of about P2,400/ha - P6,700/ha. This is on top of the free seeds worth P1,520/ha.

The Program also reached 34% and 28% new users of inbred CS in 2020 DS and WS, respectively. Without the Program, these farmers could have used low-quality seeds with marginal yields. About 82% of the responding farmer-beneficiaries in 2020 DS were able to plant the RCEF seeds within the season. As the timeliness of seed delivery and distribution improved, more farmers (94%) in 2020 WS planted their seeds immediately. Majority of the farmers (92-93%) were satisfied about the quality and germination of the seeds. Further, they became more efficient in seed utilization at 68 kg/ha seeding rate—from the previous high rate of 80-120 kg/ha.

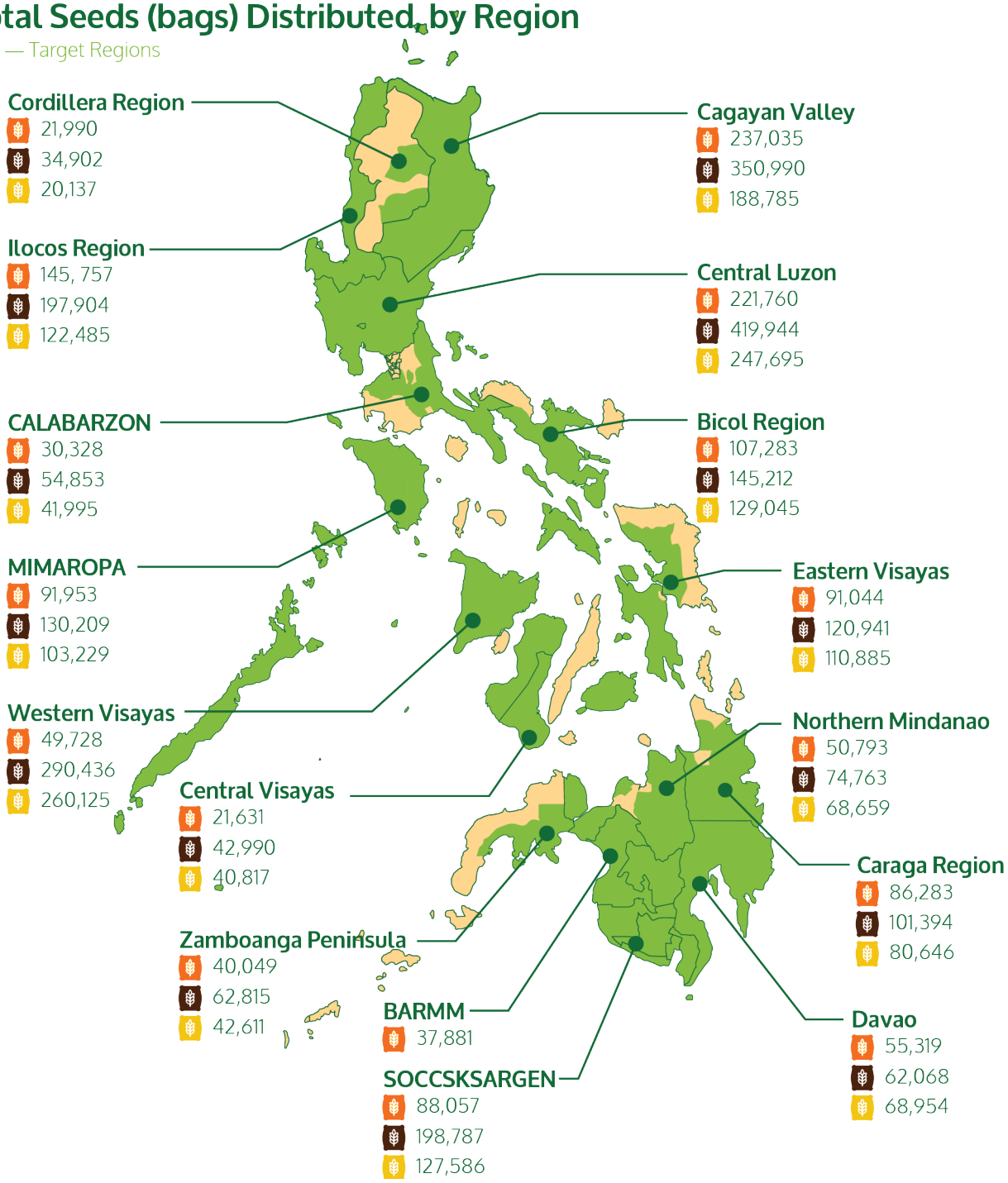
RCEF Seeds Distribution in Numbers

2020 DS 2020 WS 2021 DS

Municipalities Reached	Total Seeds (20kg/bag) Distributed	Farmer-Beneficiaries	Estimated Area Planted (ha)
715	1,376,891 bags	555,545	698,586
984	2,288,208 bags	867,704	1,013,241
956	1,653,654 bags	661,567	780,267

Total Seeds (bags) Distributed, by Region

— Target Regions




PREMIUM GRADE RICE
LOCAL
WELL MILLED RICE
LOCAL
REGULAR MILLED RICE
LOCAL
SPECIAL RI
LOCAL
TAX MAPPED

OUTCOME 2

Improved Rice Trade Through Efficient Postproduction, Better Product Quality, and Reliable Supply and Distribution System

PhilRice is developing strategies based on quantifiable research results that can make rice production not only more efficient, but also dependable and sustainable in meeting the growing demands of 109.6 million Filipino rice consumers for this staple food by 2022.

OUTCOME 2 AT A GLANCE

Improved rice trade through efficient postproduction, better product quality, and reliable supply and distribution system.

WHAT WE ADDRESS

Postproduction losses in rice

Product quality

Climate change adaptation

OUR STRATEGY

Develop technologies and information to reduce postharvest losses

Our part in the ONE DA REFORM AGENDA:

MODERNIZATION

Climate Change Adaptation & Mitigation Measures

INDUSTRIALIZATION

Postharvest, Processing, Logistics & Marketing Support

OUR PROGRESS:
PERCENT ACCOMPLISHED BASED ON PHILRICE'S STRATEGIC PLAN

WHAT WE CREATED

1 IP application for improved stripper-combine harvester coupled with manual transmission submitted to DOST-TAPI.	**1** Cutter-bar combine harvester prototype manufactured and ready for pilot-testing.	**1** Postharvest protocol, from harvesting to commercial milling, validated.	**1** Continuous-flow infrared heating system (changed from microwave) dryer for brown rice prototype fabricated.
1 Far infrared radiation dryer ready for pilot-testing.	**25%** Completed a multi-purpose shelter and fabrication of drying bags.	**1** Kwebo unit pilot-tested in Zaragoza, Nueva Ecija.	**1** Capillarigation system was installed and pilot-tested (2nd site).


Rice Combine Harvester

Developing and generating technologies

To reduce post-harvest losses, we worked on a cheaper and localized rice-combine machine that can increase field capacity from 1ha to 2ha per day, reduce fuel requirement by 15% (using a 30hp engine), and meet the maximum allowable grain loss of 3.5% as set by the Philippine National and Agricultural Engineering Standards.


PhilRice's Stripper-Combine Harvester

Commercial prototypes of the cutter bar-type rice combine are now actively produced by a company based in Isabela and another in Davao City. The latter improved the design by incorporating a hydraulic transmission system for better propulsion. The prototype for the stripper rice combine harvester was improved with increased field capacity of at least 2ha. An intellectual property application has been submitted to the DOST's Technology Application and Promotion Institute.

Drying typhoon-affected palay


Bag drying system

We are to construct and fabricate components of the bag-drying system in preparation for performance evaluation in typhoon-affected palay. The target is to reduce processing time by 20% (from field handling to drying), and reduce labor requirement in handling grains.

In 2019, eight drying bags were improved, modified and tested, resulting in moisture reduction from 18.3% to 10.6% after a 6-hour

operation at a temperature of 40-55°C consuming 168 kg rice hull and with a biochar recovery of 30%. Sun-drying, on the other hand, reduced moisture content from 17.5% to 11.2% after 8 hours.

In 2020, the Ugat-Uhay Farmers' Association in Mayamot, Zaragoza, Nueva Ecija was identified as the pilot-test site for the 4-ton-capacity bag dryer. The establishment of the multi-purpose shelter and fabrication of components for the drying system were 25% completed.

Drying rice grains

Traditional rice drying systems such as sun pavement, mat, field drying and stacking are still common because of their accessibility, low cost, and ease of management. However, high losses occur when grains are over-dried using these methods. Improper drying can lead to grain discoloration, development of molds, and increased pest attacks. This necessitates a quick drying technology to maintain grain quality and prevent losses.

The combined conduction and far infrared radiation (CC-FIR) dryer was fabricated. The unit installed at the Sto. Niño Multi-Purpose Cooperative in Butuan City is ready for commissioning and endurance testing in 2021 DS. CC-FIR is being developed to reduce labor requirement from 15 to 3 man-days for every 10 tons, and drying time from 1 hr to 10 minutes (vs conventional method).

Clustering/grouping of rice varieties

A study on clustering rice varieties determined rice consumer preference or acceptability for a particular variety based on socio-economic status. Clustering is used to identify similarities and sensory attributes of rice varieties, or their amylose content (AC) and gelatinization temperature (GT). It is also vital in distributing rice varieties to rice farmers, millers, and traders in determining prices.

We then drafted a book on farmers' rice lines, and re-evaluated and validated the AC/GT clustering of 89 rice samples based on Instron hardness measurement of brown rice form.

Revalidating key checks on harvest and postharvest management

The need for integrating keychecks and the postharvest protocol into one system

CC-FIR radiation dryer

underscores their importance. After data gathering and analysis, the validation of the protocol that covers harvesting to commercial milling was wrapped up.

The PalayCheck System was also revised in 2020 and now includes Postharvest Management as Keycheck 9.

A Rice Technology Bulletin on improved rice postharvest management protocol was also developed. The publication informs stakeholders about postharvest guidelines in carefully handling harvested rice for better yield efficiency.

"Capillarigation" technology

The capillarigation, a do-it-yourself irrigation system, was pilot-tested in 4 sites at Macarse, Zaragoza and a farmer-managed pilot field site was established. Capillary irrigation system mimics the natural capillary action of soil to move water to plants efficiently and precisely to significantly reduce water usage, plant loss, and overall cost while improving plant quality. It was first pilot-tested in Ambalatungan, Santiago City, Isabela and Mayamot, Zaragoza, Nueva Ecija.

A draft field guide on the installation and operation of the capillarigation system for backyard gardening and small farms was prepared for interested rice farmers.

"Kwebo" farm structure

We demonstrated the importance of low-cost farm structures by training 4 farmers engaged in rice and vegetable production on erecting the typhoon-resistant, pre-fabricated multi-purpose "Kwebo" as a poultry unit in Macarse, Zaragoza. The Kwebo can also be safely used for housing mushroom fruiting bags, as it can withstand 125kph typhoon winds.

Capillarigation prototype

"Kwebo" – typhoon-resistant farm shed (outside view)

Installed carbonizer in the kwebo used for drying palay and producing carbonized rice hull (inside view)


MACARSE
RICE BREW
Your Coffee Alternative

Enhanced Value, Availability, and Utilization of Rice, Diversified Rice-Based Farming Products and By-Products for Better Quality, Safety, Health, Nutrition, and Income

Rice by itself is an important commodity but it could be more. PhilRice, through its efforts in rice R4D works to increase the value of rice, its products, and by-products especially in terms of quality and nutrition for increased farmer income.

OUTCOME 3 AT A GLANCE

Enhanced value, availability, and utilization of rice, diversified rice-based farming products and by-products for better quality, safety, health, nutrition, and income.

WHAT WE ADDRESS

Malnourishment and micronutrient deficiency

Efficiency of resource utilization

OUR STRATEGIES

Develop and catalog rice varieties with value-added traits

Develop value-added technologies to improve the quality and safety of rice

Create technologies to optimize utilization of rice by-products (straw, hull, bran) and other biomass

Develop technologies/systems to increase cropping intensity and diversity

Our part in the ONE DA REFORM AGENDA:

MODERNIZATION

- Technology & Innovation including Digital Agri
- Farm Mechanization & Infrastructure Investments
- Climate Change Adaptation & Mitigation Measures

CONSOLIDATION

- Diversification

INDUSTRIALIZATION

- Postharvest, Processing, Logistics & Marketing Support

OUR PROGRESS:
PERCENT ACCOMPLISHED BASED ON PHILRICE'S STRATEGIC PLAN

WHAT WE CREATED

5 Modern varieties with value-added traits were made accessible to target markets.	**1** Machine with single-cylinder diesel engine fed with producer gas fabricated.	**2** Tests conducted on Golden Rice; sensory and safety assessment.	**8** Month shelf-life evaluation on complementary foods was conducted.
3 Commercially available powdered milk replacing buffalo's milk in NutriRice milk were highly accepted.	**3** Enriched instant 'am' products underwent shelf-life evaluation.	**1** Ready-to-drink stabilized rice bran juice was developed.	**1** Rice bran biscuit with different levels of SRB.
1 Prototype of RMR-based dietary supplement was developed.	**1** Prototype of 16-in-1 coffee enriched with RMR powder was developed in partnership with Power Herbs Solutions, Inc.	**1** Nanosilica structured-biofertilizer for rice production field-tested in 2020.	**1** CtRH carbonizer was upgraded to add versatility and lower purchase cost.
1 Flatbed dryer upgraded with automated furnace control.	**4** Ready for commercialization: brown rice machine, multi-crop reduced till planter, sprinkler irrigation system, MP seeder.	**1** Prototype of a small-scale water pumping system was designed, fabricated, and ready for testing.	

Varieties with value-added traits

Five modern varieties with value-added traits were made available for seed production: breeder seeds of Rc218SR (aromatic), Rc31SR (glutinous), Rc460 (micronutrient-dense); foundation seeds of Rc482 (japonica) and registered seeds of Rc484 (japonica). Cataloguing PhilRice's genetic collections entails developing descriptions of their characteristics, and identifying those with value-added traits.

In 2020, 29 potential specialty rice lines were awaiting slots for MET evaluation. Moreover, 21 elite micronutrient-dense lines, 8 non-glutinous and 4 non-glutinous pigmented elite lines were evaluated under the National Cooperative Tests-Special Purpose Rice (NCT-SP). Three special-purpose zinc-dense rice lines and 6 advanced pigmented lines are ready for NCT-SP.

Products for RiceBIS requirements

Rice Business Innovations System (RiceBIS) aims to "pilot-test a participatory and market-driven development model for community transformation supported by a scientific production base to improve the competitiveness of rice-based farming communities". Two products (mung bean/rice beverage and salted duck egg chips) were developed based on the requirements of RiceBIS communities.

Ready-to-drink beverages

In addition to 3 rice malt-based beverages with soybean, sesame, and peanut milk developed in 2019, PhilRice now has a characterized stabilized rice bran juice. The black rice bran juice was deemed highly acceptable to consumers.

Similarly, to improve the shelf-life of NutriRice Milk, a ready-to-drink GABA rice milk, the buffalo's milk was replaced with four commercially available powdered cow's milk. Three of these obtained very high general acceptability (80%).

(Left to right) Plain instant am, banana-enriched am, sweet potato-enriched am, carrot-enriched am.

Likewise, DA-PhilRice's three instant 'am' (rice water) products– enriched with carrot, sweet potato, and banana– were found to be shelf-stable up to four months. The nutritional content of instant am was also enriched. The IP application for instant am is being currently evaluated by DOST-TAPI. The product is envisioned as a supplement for infants who have been breast- or formula-fed exclusively for 6 months.

Snacks, meals, and antioxidant-rich supplements

We continue to develop the rice-adlai energy bar and monascus cookies even as we have other products such as rice bihon, spaghetti, chiffon and molded puffed rice cakes, brownies with saluyot and squash powder, waffles, pancakes, cookies bar, shangrice, puto, puto pao, nougat, espasol, and rice flat noodles with malunggay leaves, among others.

Energy bar made with puffed adlai and unpolished NSIC Rc 160;

with puffed adlai and unpolished Chor-chor-os;

with puffed adlai and unpolished Rc 222.

Research on peptides from rice wine lees found antioxidant properties, with 5-10 kDa peptides consistently having the highest FRAP, DDPH and ABTS radical-scavenging activities.

A prototype of a PhilRice-produced dietary supplement was developed using optimized processing technology. Compared with

RMR-based dietary supplement package

10 commercially available RMR-based supplements, it is superior or comparable in terms of phenolic content and antioxidant activity. Two companies (PowerHerbs and SwissPharma) signified interest in adopting the technology as ingredient for their instant coffee and as an additional ingredient in one diet supplement.

Biofertilizer application

Renewable inputs like biofertilizers are derived from certain microorganisms like blue green algae (BGA). Applying BGA in the soil enhances growth and yield of crops, improves soil fertility, and reduces pollution.

Biofertilizer utilization or preparation.

Research in nanotechnology in 2019 tested a nanobiofertilizer in a pot experiment. In 2020, nanosilica structured-biofertilizer was field-tested. Encapsulation of slow-released biofertilizer with indigenous agricultural wastes as source of nutrients has also been optimized.

Diversifying rice-based farming

Our fabricated multi-purpose dryer has been tested in food processing by attaching a steam generator. We saw that it can also function as an oven due to high heat recovery.

The manually operated and motor-driven brown rice mill prototypes were also pilot-tested. It was improved to increase average brown rice output capacity of 1.85 kg/hr with 76.66% efficiency, when manually operated by a male, and 1.38 kg/hr with 76.41% recovery when motor-driven.

Ten machines were deployed to cooperating users in Regions 2, 3, 6, & 9 as pilot units. Recoveries and output capacities were: 58 to 69% and 4 to 9 kg/h for portable brown rice machine; 58 to 67% and 73 to 187 kg/h for village-type model; and 67 to 77% and 114 to 116 kg/h for the retrofitted-type machine.

Prolonging shelf-life of brown rice

Hermetic storage, freezing, heating, drying, using chemicals, and irradiation are some of the methods for improving the shelf-life of a product. These methods contribute to the safe, economical, and efficient movement, storage, and packaging of a product like rice.

Our studies on how to extend the shelf-life of rice bran and brown rice found that steam heating followed by oven-drying was the most effective.

Different packaging and storage conditions for steam-heated stabilized brown rice were screened and evaluated for 5 months.

Healthier Rice

The biosafety permit for field trials of Golden Rice (a type of rice that contains beta-carotene) was released on May 20, 2019 and allowed DA-PhilRice to conduct further environmental risk assessment. The field trials—conducted in DA-PhilRice stations in Munoz, Nueva Ecija, and San Mateo, Isabela—were completed in October 2019. On December 10, 2019, the Department of Agriculture-Bureau of Plant Industry (DA-BPI) issued the permit for direct use of GR2E Golden Rice as food and feed, or for processing.

On October 29, 2020, DA-PhilRice submitted an application for the commercial propagation of Golden Rice to DA-BPI. The biosafety assessment process for the commercial propagation application involved a thorough

Golden Rice grains

safety assessment by a pool of non-DA scientists sitting as a Scientific and Technical Review Panel (STRP). The STRP members are experts in food and nutrition, toxicology, ecology, crop protection, environmental science, molecular biology and biotechnology, genetics, plant breeding, and animal nutrition.

High Iron and High Zinc Rice (HIZR)

The DA-PhilRice Healthier Rice Project in collaboration with IRRI is currently developing high iron and zinc rice (HIZR), with the end goal of releasing a stacked variety containing beta-carotene, iron, and zinc that can help address multiple micronutrient deficiencies affecting over two billion people worldwide. The DOST-BC issued the Certificate of Completion of HIZR Confined Test on June 20, 2020.

Optimizing rice by-products and other biomass

The Institute has developed additional cultivation technologies for rice straw-based mushroom, processed and prepared spent mushroom substrates for chemical analysis as feed supplement for fowls, and identified methods to use spent mushroom substrate for marcotting, stem-cutting, and seedling media.

A computer-aided design of a 6-ton direct-fired

Using carbonized rice hull to prevent the fruiting bags from drying.

auto-feed rice hull furnace model is also being developed.

We have developed the design and proof-of-concept prototype for a combined producer gas and diesel-fed non-retrofitted single-cylinder 14hp compression ignition engine with at least 65% fuel replacement for pumping water or generating 2kw electrical power with at least 75% fuel replacement.

Combined producer gas and diesel fed engine.

Business enterprise-driven agri-biosystems

To enhance agri-biosystems, PhilRice continues to use its improved version of the Sorjan production model that optimizes resources and increases profitability. In response to climate change, the model helps growers cultivate all-season fish and vegetables simultaneously on the same land. Farmers need to adopt disaster-resilient farming practices to produce adequate food for growing populations.

Therefore, four highly productive climate change-resilient farming systems models— improved version of the Sorjan production model, vertical crop production model, rice+duck+cash crops model, and swine+vegetable production model— had been continuously tested.

Sorjan farm

Generating energy and increasing profitability

The tractor-drawn multi-crop reduced till planter (MCRTP) with fertilizer band applicator was piloted in Isabela, Pangasinan, and Nueva Ecija. Results showed that it got higher yields compared to the farmer's practice. After several laboratory and field tests, the MCRTP is now ready for pre-commercialization.

Based on economic analysis, the ownership and use of the MCRTP through custom hiring

is viable and feasible. Investment cost can be recovered after 3.6 years at a machine utilization rate of 120 ha/yr.

After producing a final multi-purpose seeder (MP Seeder) prototype in 2019, 15 MP seeder units for rice, corn, and mungbean were prepared and adapted to seven target regions in 2020. The MP Seeder was fine-tuned to cater to required seed rates of rice, corn, and mungbean based on variety and site. It has a field capacity of 2.5 ha/day and 0.4 person-day labor requirement.

A prototype of a small-scale water pumping system that uses generated steam from the carbonizer attachment was designed, fabricated, and is ready for testing by 2021.

Initial performance of the multi-purpose steam generator was tested. The design was improved to generate pressurized steam for use in pressure cooking, small-scale power generator and other applications. The test resulted in the generation of atmospheric steam at a rate of 1.7kg/hr, consuming rice hull at an average of 9.2kg/hr with biochar recovery of 38%.

Sprinkler irrigation system

Field trials for this system were conducted in 2020. We harvested 4,760.6 and 5,432.6 kg/ha during DS and WS, respectively, and water productivity was 0.90 kg/m3. The 20-mm nozzle diameter sprinkler operates at a 28.7 m maximum throw radius.

Sprinkler irrigation system at work.


Topshot
PHILRICE

OUTCOME 4

Science-based and Supportive Rice Policy Environment

In today's rapidly changing world, DA-PhilRice tackles value chain analysis in rice, the process of rice seed distribution, the role of our genebank as a repository for rice genetic resources, credit system, improving databases, crop diversification, publishing policy briefs to inform decision makers, and intensifying campaigns to help the Filipino farmers. These concerns inspire us to target more strategic science-based researches that are not only quantifiable, but also create a supportive rice environment for our farmers, consumers, and partners in sustainable food production.

OUTCOME 4 AT A GLANCE

Science-based and supportive rice policy environment.

WHAT WE ADDRESS

Yield gaps across provinces

Science-based and supportive policy environment for the rice industry

OUR STRATEGIES

Conduct policy research

Promote advocacies and conduct campaigns

Propose policy ordinances

Our part in the ONE DA REFORM AGENDA:

CONSOLIDATION

- Bayanihan Agri Clusters
- Province-led Agri & Fisheries Extension Systems
- Mobilization & Empowerment of Partners

MODERNIZATION

- Technology & Innovation including Digital Agri

STRATEGIC COMMUNICATION

OUR PROGRESS:
PERCENT ACCOMPLISHED BASED ON PHILRICE'S STRATEGIC PLAN

WHAT WE CREATED

1 AO (No. 2020-009) on improved seed production and post-production protocol was issued.	2 Guidelines to address bottlenecks and issues in the seed systems were institutionalized.	1 Webinar (UGALI) was conducted.	2 Journal articles published (Socioeconomic Impact of Adopting Combine Harvester in the Philippines and Rice Value Chain).
2 Policy briefs on emerging issues (Crop Diversification and Truthful Labelling) were crafted and disseminated.	2 New features for the Palaystat website (search optimization and feedback system) were added.		

Seed production protocol

As food security depends upon the seed security of farming communities, PhilRice evaluated its existing seed production.

We institutionalized two guidelines in addressing bottlenecks and issues in the seed system: storage and access to nucleus seeds (NS) and breeder seeds (BS) at the PhilRice genebank; and distinctness, uniformity, and stability test (DUST) and NS to BS production.

We also improved the seed production and post-production protocol that was issued as AO No. 2020-009 (Reiterating Guidelines on Inbred Seed Production and Postharvest Operations at PhilRice).

Credit system for farmers

Agricultural credit is a vital component in addressing specific financial needs of farmers. Access to credit not only allows them to secure their plants and harvests, including their farm equipment, but also to diversify. Acknowledging its importance, we conducted a policy review of the local credit system and prepared a policy paper.

We also discussed and elaborated on rice farmers' attitude on technology adoption and business competencies and their credit sources through a webinar entitled "UGALI."

Policy briefs and papers on crop diversification

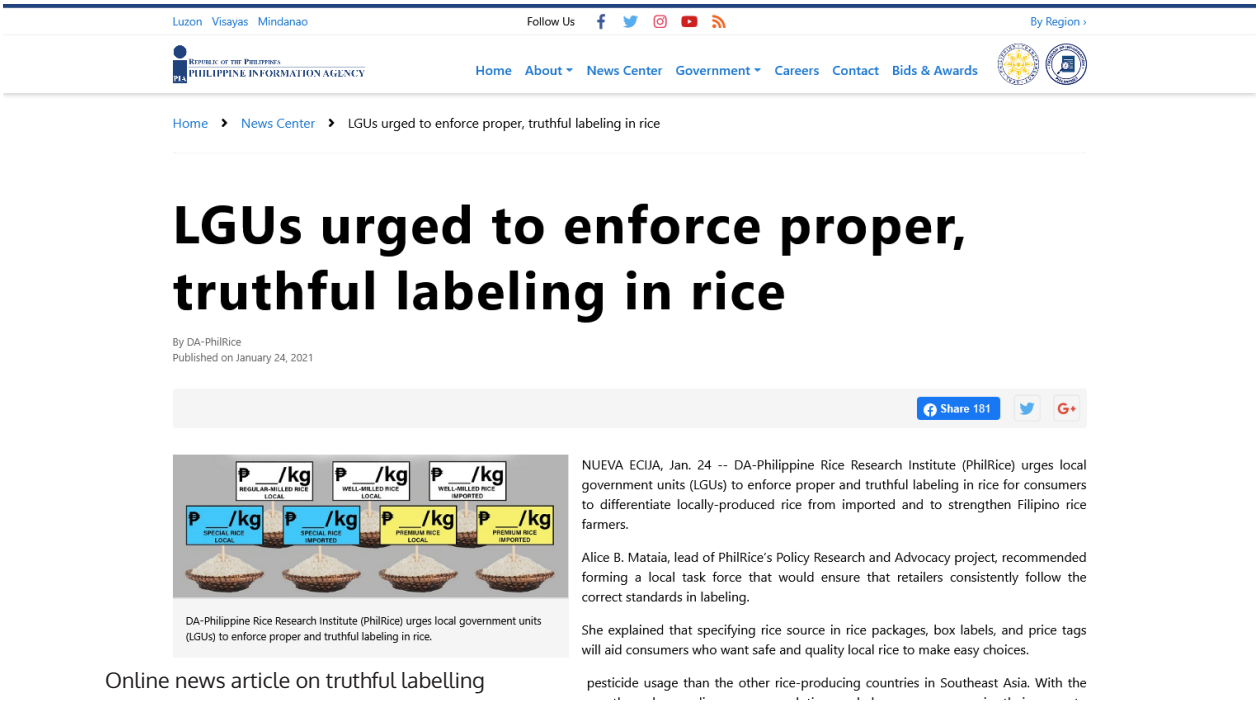
Crop diversification provides farmers with a variety of choices in producing crops. It is a major shift from traditional to more remunerative farming practices.


Palayamanan

Government interventions in the form of policies, subsidies, and market reforms are supported by relentless research activities such as publishing policy briefs and papers.

Value chain analysis, rice production systems, and statistical trends

Value chain refers to a whole range of goods and services necessary for an agricultural product like rice to move from farm to consumers. In 2019, we advocated for a policy paper that would provide valuable information on key issues on global change.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LGUs urged to enforce proper, truthful labeling in rice

By DA-PhilRice
Published on January 24, 2021

Share 181

DA-Philippine Rice Research Institute (PhilRice) urges local government units (LGUs) to enforce proper and truthful labeling in rice.

NUEVA ECIJA, Jan. 24 -- DA-Philippine Rice Research Institute (PhilRice) urges local government units (LGUs) to enforce proper and truthful labeling in rice for consumers to differentiate locally-produced rice from imported and to strengthen Filipino rice farmers.

Alice B. Mataia, lead of PhilRice's Policy Research and Advocacy project, recommended forming a local task force that would ensure that retailers consistently follow the correct standards in labeling.

She explained that specifying rice source in rice packages, box labels, and price tags will aid consumers who want safe and quality local rice to make easy choices.

pesticide usage than the other rice-producing countries in Southeast Asia. With the

Online news article on truthful labelling

In 2020, we developed various publications. These are: a journal paper on *Rice Value Chain Analysis in the Philippines: Value Addition, Constraints, and Upgrading Strategies*; a handbook on understanding statistical trends of the local rice industry; and a paper on *Truthful Labeling: Helping Local Farmers and Ensuring Safety for Consumers*. A paper on *Drivers and Pathways on Changing Rice Production System* was also drafted.

In support of proper rice consumption, we drafted the Truthful Labeling Ordinance of 2020 and submitted it to the Pasig City Council.

Policy paper, price analysis of F1 hybrid rice

PhilRice continues to enhance farmers' awareness and adoption of technologies by drawing up policy and discussion papers on the right price of F1 hybrid. This is in line with the Institute's activities to intensify the hybrid rice program that began in 2002.

Be Riceponsible campaign

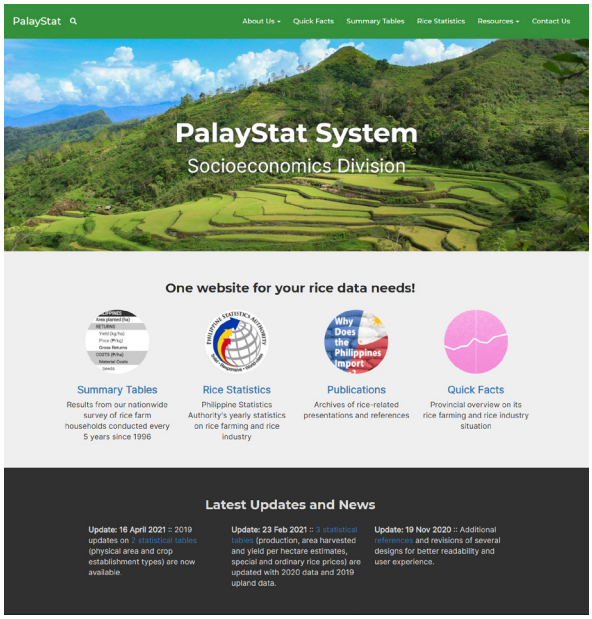
This campaign emerged from the 2013 National Year of Rice observance in an effort to achieve rice self-sufficiency. Since then, the Be Riceponsible campaign reached 52,569,020 Filipinos through the efforts of campaign partners, and support of the Department of Agriculture, its regional field offices, bureaus, and attached agencies.

In 2020, the campaign's call to action was the slogan "Grow local, Buy local, Eat local," that focused not only on the production aspect of locally produced rice but also on its marketing and consumption.

Implemented mostly through digital platforms with four engagements per week through the Be Riceponsible FB page, the campaign obtained 98.4% total reach and 196.12% total engagements against the target.

Updating rice-related statistics, price and production databases

The operation of the PalayStat website was improved in 2020 by adding two features on search engine optimization and feedback system that can quickly assess the usefulness of downloaded data and references. Such data are complete and available throughout the year. The availability of comparable and understandable statistical information plays a major role at influencing policy decisions on national governance, scientific research, commerce, and other sectors in our society.



PalayStat website

OUTCOME 5

Advanced Rice Science and Technology as Continuing Sources of Growth

Advanced technologies are reshaping the frontiers of rice science, research, and farming today. In reinforcing rice science, DA-PhilRice's role straddles from robotics for precision agriculture to informatics, resource management, revolutionized data gathering, farm mechanization dynamics, and use of advanced methods to sequence genotypes. It also adapts strategic, quantifiable, viable, innovative, and practical approaches and solutions that spell progress in food security and sustainability in the long term.

OUTCOME 5 AT A GLANCE

Advanced rice science and technology as continuing sources of growth.

WHAT WE ADDRESS

- Climate change adaptation
- Decreasing land area for rice cultivation
- Declining rice yields
- Low level of mechanization
- Globalization of rice trade

OUR STRATEGIES

Develop technologies for more efficient and better crop management and postharvest operations

Apply space and information technologies, bioinformatics, automation, robotics, alternative energy, and biotechnology

Our part in the ONE DA REFORM AGENDA:

MODERNIZATION

- Technology & Innovation including Digital Agri
- Climate Change Adaptation & Mitigation Measures

OUR PROGRESS:
PERCENT ACCOMPLISHED BASED ON PHILRICE'S STRATEGIC PLAN

WHAT WE CREATED

1 App for water level sensor evaluation and monitoring was developed (WateRice).	**17** AutoMon sensors installed and evaluated in Regions 2, 3, and 6.	**1** Rice Seed Information System developed with up-to-date information.	**1** Seed Production Traceability System developed.
16 Regions covered by PRISM in 2020.	**24** Tabular datasets added to the RiceIntel portal, including 6 map layers, and other new features.	**1** Propulsion component for a dry-seeded robotic seeder was developed as well as improvement to electronics and wheel mechanism.	**3** Smartphone apps used for farm operation, weed management, and variety selection are improved.
1 Automated rice hull gasifier pilot-tested for endurance.	**14** Gene editing constructs were designed for targeting amylose biosynthesis.	**4** QTLs associated to lateral root development were identified.	**2** Genotypes sequenced with complete profile.
2 Antisera for RTBV and RTSV were developed.			

Precision agriculture and ICT-based land management

Drone spraying a rice field

Precision agriculture employs robotics and information and communications technologies (ICT) in production management to achieve increased and sustainable crop yields and profitability. These strategic measures help boost efficiency over traditional farm inputs.

Robotic models, unmanned aerial vehicles for precision agriculture and ICT-based production management applications were developed in 2020.

Meanwhile, final drafts of soil series guidebooks for Leyte, Samar, Palawan, and Albay were made in 2019.

Assessing water quality

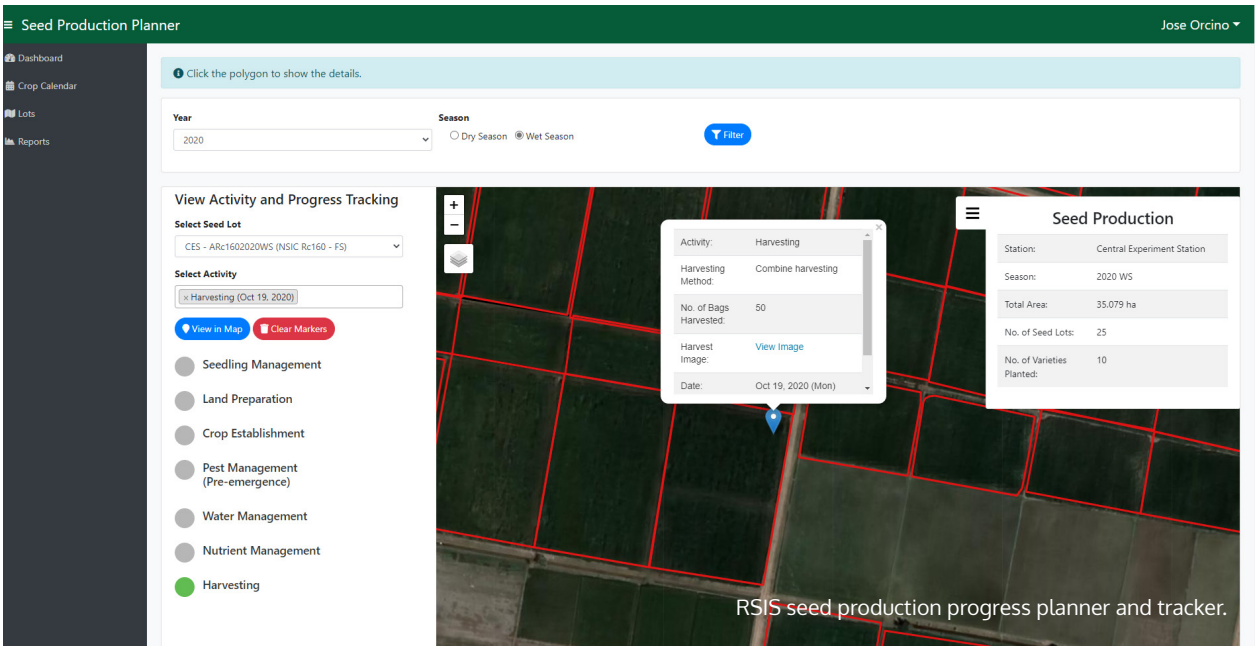
The need for water quality assessment in terms of its physical, chemical and biological nature is a priority in agriculture.

In 2019, we tested AutoMonPH, a decision support tool for sustainable water management developed by PhilRice and International Rice Research Institute. In 2020, we developed an online field water management dashboard for AutoMonPH Water Rice system.

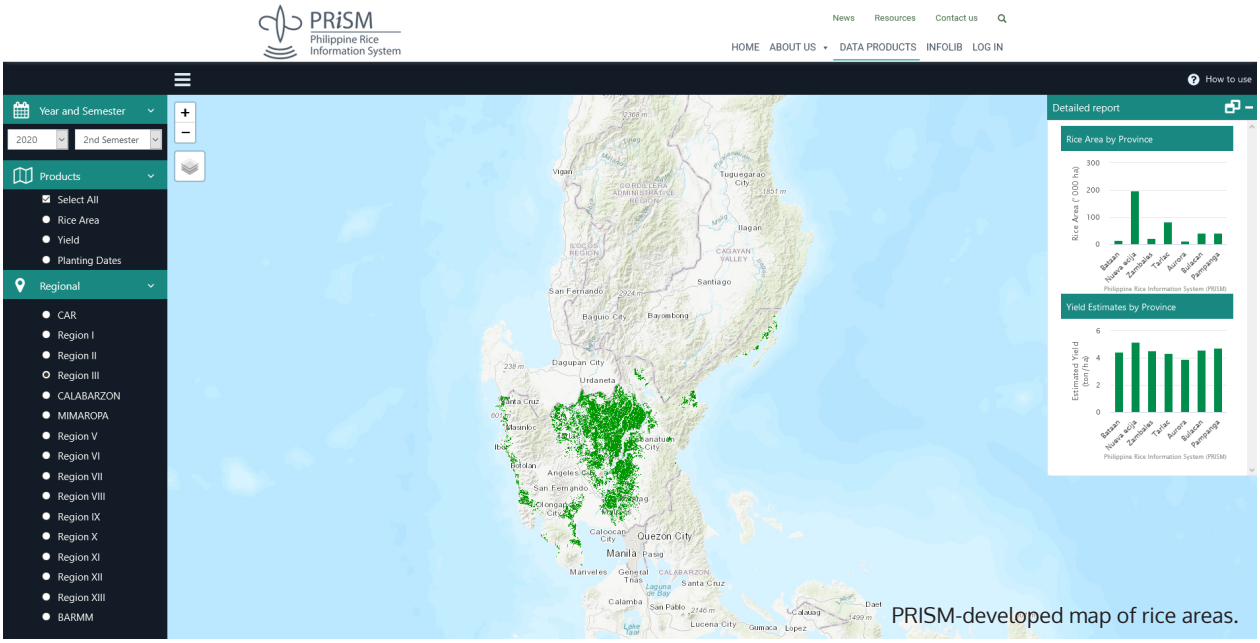
We also developed water quality monitoring and mapping systems that provide real-time measurements of temperature, pH, dissolved oxygen, and electric conductivity of ponded water.

Rice and rice-based agricultural information systems

To optimize processes, the development of the Rice Seed Information System is ongoing. The system will help address issues of seed production traceability, distribution monitoring, and seed demand forecasting. Characterizing provincial soils and web-based Management Information Systems had been proposed.



RSIS seed production progress planner and tracker.



PRISM-developed map of rice areas.

PRiSM - revolutionizing rice data gathering in Asia

The Philippine Rice Information System (PRiSM), a project developed in 2013-2018, now serves as a model in Asia on how satellite-based rice monitoring systems can boost agricultural progress.

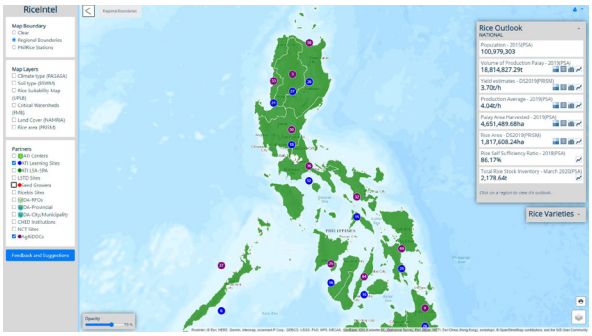
Developed jointly by DA-PhilRice and IRRI with funding support from DA, PRiSM monitors all the rice areas in the 16 regions of the Philippines. The PRiSM website gives the public an access to data on actual rice areas planted and when those areas are planted, yield and production estimates, and the rice areas affected by floods and drought.

After its R&D stage, PRISM became part of the regular operations of DA, DA-RFOs, and PhilRice. It is now able to provide timely data with at least 90% accuracy depending on the terrain. DA institutionalized the mainstreaming of PRiSM operations at DA-Central and the utilization of PRiSM data products in the National Rice Program under the Field Operations Service.

RiceIntel in PhilRice Intranet

RiceIntel is a digital platform that provides decision-makers with information about the country's rice situation, relevant research data, and ground partner directory.

In 2020, new features and datasets from DA-Agricultural Training Institute, Philippine Statistics Authority, and AgRiDOC database were added in the RiceIntel dashboard and the platform. There are now 24 tabular datasets, 6 map layers, and the regional, provincial, and city/municipality boundaries present. It is now accessible to the ManComm members through the DA-PhilRice Intranet portal.



National rice outlook data in RiceIntel

Its new features include chart download, user authorization and deployment to DA-PhilRice Intranet, and year and/or semester selection for PSA and PRISM data display.

PRIME test on tungro virus

Pest Risk Identification and Management (PRIME) is a system that tests pest outbreaks


PRIME field activity.

Gasifier powers a water pump.

that cause major crop losses. These are blast, bacterial leaf blight, tungro, and brown planthopper. In 2020, a test model capable of predicting risk factors of tungro spread was developed.

Cost-reducing rice hull gasifier

Research in 2020 yielded a prototype semi-automated rice hull gasifier engine-pump system with adjustment on the discharge timer. The gasifier can be used as an "alternative water harvesting method to provide water to those with limited access from grid water source for irrigation." The previous prototype had a continuous-type reactor that functioned on 8-hour electricity.

Rapid amylose-testing for field application

Amylose content, which defines the firmness and sticky qualities of rice, is often used in predicting the staple's tenderness when cooked.

New methods for rice and rice-based chemistry were developed including rapid amylose-testing for field operation. A fully documented protocol for microplate-based amylose-testing with 92% accuracy and reduced volume of reagents and analysis time is now available.

Novel genes/QTL discovery for important traits

DA-PhilRice's quantifiable target focused on a number of novel genes/QTL discovery for important traits (drought, submergence, herbicide resistance, soil problems such as phosphorus and zinc, iron toxicity), stay-green (one of the major characteristics of rice to sustain under abiotic stresses), long stigma, root plasticity (enables plants to adapt to various biotic and abiotic constraints that limit plant productivity), pest and diseases, high temperature, and yield-related genes.

In undertaking this research in 2020, the institute focused on 8 quantitative trait loci (QTL) associated with stay-green, lateral root development, tungro resistance, and rice grain crack resistance based on genotypic data. Mapping of root plasticity, stay-green, and deep-rooting QTLs is in progress.

NG sequencing genotypes

Next-generation sequencing (NGS) or high throughput sequencing are faster and cheaper technologies for sequencing Deoxyribonucleic acid (DNA) and Ribonucleic acid (RNA). We used NGS with 5 whole genome sequences based on an existing Crop Biotechnology Center (CBC) and Genetic Resources Division (GRD) study as target.

In 2019, we released the DNA fingerprints of 3 PhilRice-bred varieties (NSIC Rc 216, Rc 400, Rc402) based on whole genome sequenced data.

In 2020, two genotypes were sequenced using NGS –Tres Marias and NSIC 240– and results were made available with complete profile based on the reference genome.

Antiserum for RTBV.

Antisera to support breeding

The detection and identification of viruses used to be based on the development of symptoms on infected plants. Major methods have since been introduced in detecting and producing antisera against targeted rice viruses such as rice tungro spherical virus (RTSV) and bacilliform virus (RTBV) which affect almost all South and Southeast Asian countries.

PhilRice then did not produce its own antisera, but needed them to support its breeding objective for virus resistance. In 2020, our scientists successfully produced and developed antisera for RTSV and RTBV detection to test or assay 30,000 plant samples.

DNA fingerprinting.

Mariano Marcos State University President Shirley C. Agrupis (3rd from left) and DA-PhilRice acting Executive Director Sailila E. Abdula (center) after signing a Memorandum of Agreement.

OUTCOME 6

Enhanced Partnerships and Knowledge Management for Rice Research for Development (R4D)

As DA-PhilRice continues to leverage its portfolio in agricultural research, accomplishments led to renewed agreements with the Japan International Cooperation Agency (JICA) and the Korea Project on International Agriculture (KOPIA), and memoranda and letters of agreement signed with our international and national partners.

Our partnerships and dialogues with national regulatory institutions such as the National Economic and Development Authority (NEDA), Civil Service Commission (CSC), Government Service Insurance System (GSIS), and Office of the Government Corporate Counsel (OGCC), among others, have helped clarify policies and regulations that may realign the institute's initiatives as a government corporate entity.

Our knowledge management system continued to accelerate based on our partners' and clients' continued access to the institute's website and other internet-based platforms like Facebook. The pandemic has intensified the creation of an atmosphere for a technology-enabled knowledge sharing and learning. Blended learning approach allowed us to reach our diverse clients at different locations with utmost considerations on health safety.

The ubiquitous radio broadcasting continues to play a major part in our information dissemination initiatives. Throughout history, at times of major natural disasters and health emergencies, radio has played a leading role thanks to the fact that it is the most universal, simplest, and most accessible channel of media.

OUTCOME 6 AT A GLANCE

Enhanced partnerships and knowledge management for rice research for development (R4D).

WHAT WE ADDRESS

Declining rice R&D funding

Improving access to and management of rice knowledge

OUR STRATEGIES

Strengthen and intensify initiatives in all areas of rice science.

Institutionalize getting and acting on feedback from stakeholders.

Our part in the ONE DA REFORM AGENDA:

CONSOLIDATION

- Bayanihan Agri Clusters
- Province-led Agri & Fisheries Extension Systems
- Mobilization & Empowerment of Partners

PROFESSIONALIZATION

- Education and Training: Agribusiness Management

STRATEGIC COMMUNICATION

OUR PROGRESS:
PERCENT ACCOMPLISHED BASED ON PHILRICE'S STRATEGIC PLAN

WHAT WE CREATED

34 Training and KSL activities conducted.	**3** Proposals (ASAP Luzon, RISE Visayas, & DRIVE Mindanao) finalized and updated.	**540** Participants in Ugnay Palay: 32nd National Rice R4D e-Conference.	**451** LOAs for RCEF-Mechanized Techno Demo signed with farmers.
77 R4D projects implemented by R&D sectors (including branch stations).	**101,364** Followers of PhilRice's social media page (Facebook).	**23** New RiceBIS sites.	**2.2M** Recipients of KPs (RCEF).
7 Radio partners in 2020.	**86** Stories on PhilRice regular programs, RCEF Seed & Extension and in PhilRice's website with 83% client satisfaction.	**739** Media hits; news picked-up by online and print media.	**P 4.7B** In public relations value.
7,539 Stakeholders trained.	**149** Agreements signed with international, national, regional, and local partners.	**1** Revised guidelines for monitoring and evaluating customer and employee satisfaction.	**328** Knowledge product titles produced.

R4D programs and initiatives

Knowledge sharing is like putting back power in stakeholders' hands and making our R4D efforts authoritative and trustworthy. Hosting national and regional conferences and consultation workshops with partners and stakeholders is among our strategies that underscore the importance of such sharing.

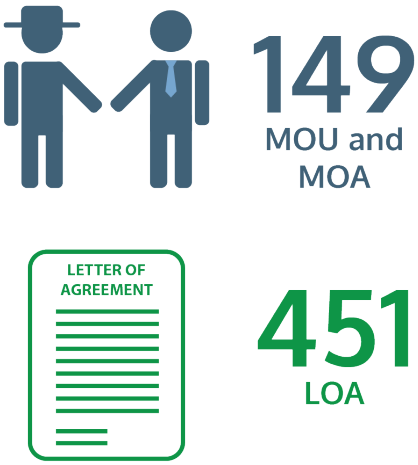
Ugnay-Palay 2020.

In 2020, DA-PhilRice conducted the Luzon Rice-Based Agriculture for Semi-arid and Adverse Places Program (ASAP Luzon) workshop. The proposals for Rice Intensification and Sustainability Enhancement in the Visayas (RISE Visayas) and Developing Rice-based Innovations in Vulnerable Environments in Mindanao (DRIVE Mindanao) were also updated. Thirty-four training and knowledge-sharing and learning activities were conducted.

DA-PhilRice likewise carried out the national Ugnay Palay e-conference on Nov. 4, 2020.

Agreements for research thrusts and capacity building

The long-term impact of our various capacity-building endeavors not only encourages partners and stakeholders to develop a sense of ownership and empowerment, but also strengthens their confidence, skills, knowledge, and resources.



We signed 149 agreements with international, national, regional, and local partners and 451 Letters of Agreement (LOAs) for the Rice Competitiveness Enhancement Fund (RCEF).

JICA and KOPIA agreements

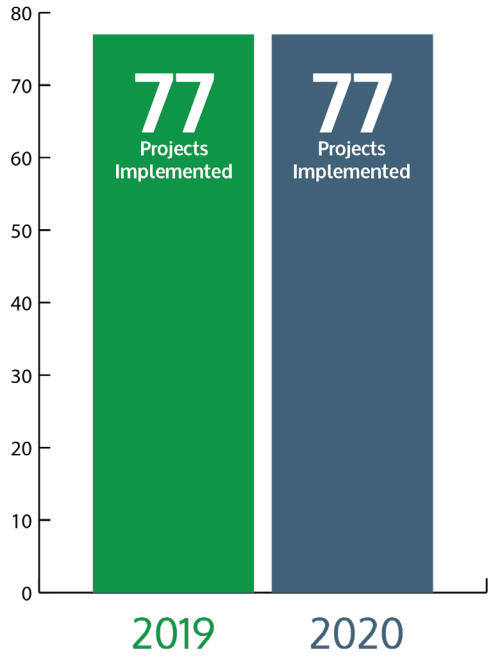
DA-PhilRice renewed its agreements with the Japan International Cooperation Agency (JICA) and the Korea Project on International Agriculture (KOPIA). Such agreements are expected to intensify our efforts in improving rice varieties and cultivation.

R&D sector projects

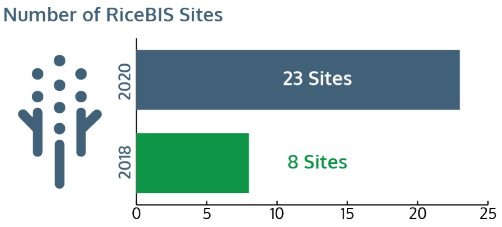
As we target new and continue projects and partnerships, 77 projects were implemented by our R&D sectors and branch stations in 2019 and 2020.

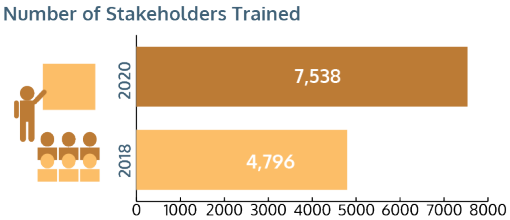
More knowledge allies

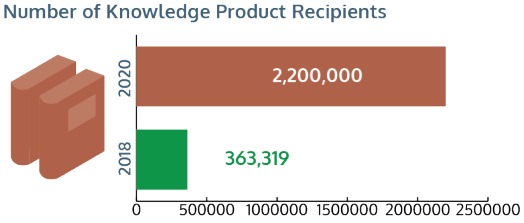
Four new knowledge products were developed to deliver information in an immersive and interactive format. These products were used in 68 established techno-demo sites nationwide with excellent rating.



RCEF implementation increased our presence in different R&D communities; RiceBIS sites grew from 8 in 2018 to 23 in 2020. Stakeholders trained also increased from 4,796 in 2018 to 7,539 in 2020. As DA-PhilRice engages with its knowledge allies, recipients of knowledge products increased exponentially from 363,319 in 2018 to 2.2M in 2020, while the DA-PhilRice Text Center hit >164,000 indicating the massive reach of RCEF programs.







RiceBIS Community

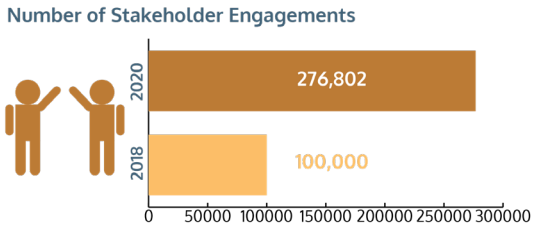
RiceBIS was designed as a two-phase program. The pilot phase (2017-2020) covered 8 rice-producing provinces nationwide and 15 new sites for Phase 2 (2020-2022). RiceBIS uses a market-driven approach in optimizing not only production, but also processing and marketing to ensure available and affordable rice in a resilient and sustainable manner through the deployment of yield-enhancing and cost-reducing technologies, and engagement of farmers into rice and rice-based enterprises.

RiceBIS communities were established through the assistance of 23 Site Working Group (SWGs) composed of government organizations, academe, private sector, business development providers, and farmers' organizations. The SWG provides the network of local support needed by smallholder farmers in implementing their rice-based agro-enterprises.

Social Media mileage

Facebook has become the largest social media platform as a consequence of the ongoing COVID-19 pandemic. Statistica.com indicates that 83 million Filipinos use Facebook as of January 21, 2021. PhilRice then uses this well-maintained media platform in reaching out to stakeholders, R&D allies, students, unique users, and the general public.

In 2019, FB page likes increased by 60% from 36,014 to 57,637. In 2020, we increased our engagement with stakeholders to 276,802, up from 100,000 in 2018.



Broadcast initiatives

Advances in technology and the emergence of a myriad of media outlets and platforms have enabled more people to access large amounts of information. In many areas, however, the radio still plays a key role in information sharing.

The coverage of our broadcast releases and radio segments on national and community

radio stations widened resulting from our regional and national partnerships with 7 radio stations in 2020, including Manila-based DZRH that has nationwide coverage.

7
Radio Stations

Knowledge products

From 2019 to 2020, DA-PhilRice was able to produce a total of 328 different knowledge product titles.

Public relations (PR) value

PR helps build relationships with DA-PhilRice's R4D allies, stakeholders, other government agencies, advocacy groups, supporters, and the general public. More importantly, PR demonstrates to our funding agencies how we achieve our goals as a bastion of R&D.

We therefore add PR value to our R&D activities through news releases on rice science, events, advocacies, policies, and even about our corporate social responsibility. In 2020, we achieved P4.7B PR value through such releases shared in our website, circulated among our media partners. Our 121 press releases in 2019 were picked up 905 times by different media platforms.

Consultation with farmers of Bantug, Science City of Muño, Nueva Ecija on the rice tariffication law.

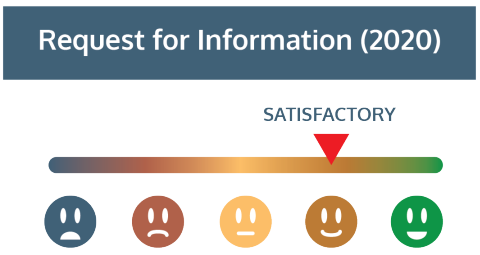
Partnerships, dialogues with regulatory institutions

Exit conferences and dialogues are periodically held among DA-PhilRice, government regulatory bodies, and regional development councils (RDCs). These dialogues help strengthen our partnership strategies or realign operations and initiatives as a government corporate entity. Our partner-agencies such as DA-Bureau of Agricultural Research (DA-BAR), DA-Rice Program, DOST-Philippine Council for Agriculture, Aquatic and Natural Resources R&D (DOST-PCAARRD), and other government institutions provide funds for rice R4D.

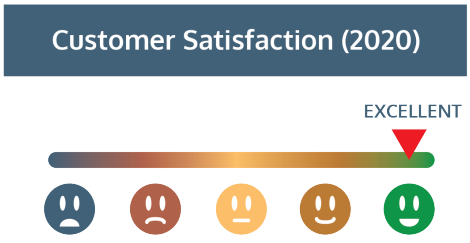
In 2020, we held a series of dialogues with the Civil Service Commission (CSC), Office of the Government Corporate Counsel (OGCC), Government Service Insurance System (GSIS), Maxicare, Bureau of Internal Revenue (BIR), and Philhealth to clarify policies and resolve issues.

Consolidated, integrated feedback system

The preponderance of online feedback platforms is a critical component of a successful management information initiative especially if its contents are comprehensively consolidated, integrated, and analyzed. Such a move unlocks change and innovation, and has become a continuum at PhilRice since 2017 because of its critical importance for those seeking updated information no matter what sector or industry they belong to.



In 2020, we acted upon requests for information ranging from seeds and data, analytical services, technical dispatch, and invitations, among other needs, with 100% satisfactory rating by our online requestors and information seekers.



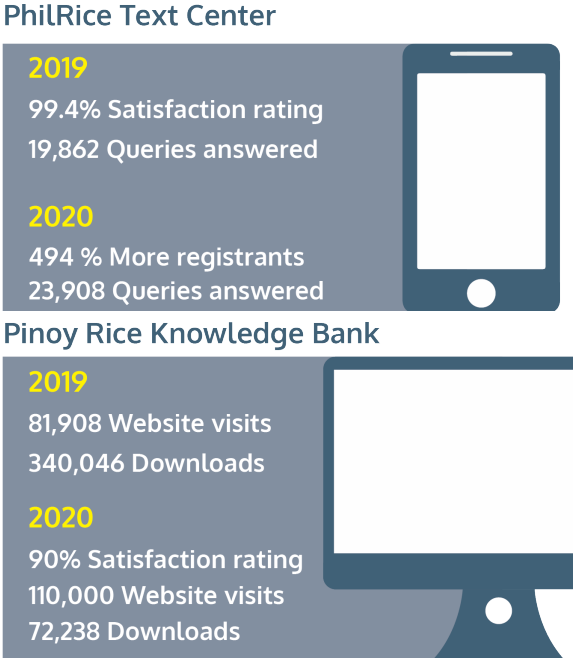
We were also rated as **excellent** in internal and external customer satisfaction in 2020. Our Integrated Management Systems and Services Office (IMSSO) distributed these feedbacks to concerned offices.

High context-specific KMS acceptance

Our context-specific Knowledge Management System (KMS) not only allows us to improve, organize, capture, and orchestrate our data, but also derive more value to our knowledge sharing system. This is evident in the website-based Pinoy Rice Knowledge Bank (PRKB), AgriNet, Text Center, Farmers' Information and Technology Services (FITS), K-AgriNet, Knowledge Sharing and Learning (KSL) mechanisms, RiceSolutions, Power-Talk, and infographics on innovative development interventions.

2019 statistics underscored the importance of these knowledge platforms showing that the DA-PhilRice Text Center received 99.4% satisfaction rating from clients after responding to 19,862 queries. PRKB registered 81,908 website visits and 340,046 content downloads of uploaded 34 knowledge products (KP), while 13 technological and vocational high schools printed KPs for display in their libraries' infomediary corners. DA-PhilRice and the DA-Agricultural Training Institute also agreed to establish a rice corner in FITS centers.

In 2020, our Text Center recorded 164,708 registrants, a high 494% increase from the previous year. The Center likewise received 23,908 text queries, of which 92% were responded to within an hour. Content-wise, 90% of PRKB clients expressed satisfaction.



CSR activities beyond calamities

Corporate Social Responsibility (CSR) not only connects PhilRice to the communities around in times of crisis, but also helps align our employees' strong connection to our corporate ethics and standards.

Beyond natural calamities like donation drives for typhoon victims in Cagayan, Isabela, and Bicol and Taal Volcano eruption in Batangas, we also initiated a feeding program during Nutrition Month in July, blood letting activity, and donation of bond paper to the Maligaya Elementary School in Science City of Muñoz, Nueva Ecija. Computer units were also donated to Muñoz National High School.

Typhoon victims relief operations.

On education, DA-PhilRice helps in preparing students to acquire job-ready skills by providing them year-round accommodation for on-the-job training, thesis/research support under the Student Training and Engagement Program (STEP), and work immersion and other engagements under our Special Program for the Employment of Students (SPES).

Rice Extension

To enhance the capabilities of farmer beneficiaries in rice and seed production, mechanization, and other relevant skills for improved competitiveness and income, the RCEF – Rice Extension Services Program (RCEF – RESP) provided strategic services.

With our partners, we multiplied our pool of rice experts and trainers who are knowledgeable in the latest rice production technologies to ensure sufficient support to farm schools nationwide. DA-PhilRice led the Rice Specialists' Training Course (RSTC); co-implemented the Training of Trainers (TOT) and Farmer Field Schools (FFS); and handled briefings and field days. Training curriculum and facilitators' guide for the farmer field schools were designed and were applied for TESDA accreditation.

Information, education and communication (IEC) materials were developed and distributed to the intended clients via trainings, technical briefings, and other knowledge sharing and learning (KSL) activities, either in-person or online. They were also made available and accessible at the Farmers' Information and Technology Services (FITS) centers, Farm Schools, and offices of the involved agencies. Moreover, the IEC materials were shared via existing strategic media platforms (e.g., social media, radio, SMS, print, and website) of the involved agencies and partners.

RCEF Training Programs and KSL Events Implemented in 2019-2020

Season-long Rice Specialists' Training Programs

94 Rice Specialists

4 Batches

Season-long Farmer Field Schools

371 Farmers

10 Batches

Training of Trainers

575 Trainers

25 Batches

Technical Briefings Conducted

100% of seed distribution activities 100%

301, 076 farmers briefed

until mid-March for face-to-face; selected seed distribution events after the lockdown

PalayAralan

2019:

16 Face-to-Face Sessions with Live Facebook Broadcast

355 Session Attendees

34,951 FB Broadcast Viewers

2020 (shifted to online due to pandemic)

17 Live Sessions

1,833 Total Live Views

94,900 Total Post Views

RCEF Communication Support Services
(2019 - 2020)

KNOWLEDGE PRODUCTS

55 videos
produced & distributed

101 audio materials
produced & distributed

51 print materials/collaterals
produced & distributed

Copies produced: 2,969,657
Copies distributed: 2,319,160*
*Distribution of IEC materials still on-going.

KNOWLEDGE SHARING AND LEARNING (KSL)

27
KSL Activities Conducted

419
Facebook posts

PhilRice Text Center
253 Queries answered
4 Text Blasts sent to 37,000 recipients

243
Radio Engagements

PhilRice Website
40 stories published

35
YouTube video uploads

Pinoy Rice Knowledge Bank
55 IEC materials uploaded with 36,523 downloads

9,534,111
Facebook reach

PAG-AHON PROJECT

Sa **P**alay at **G**ulay, may **A**ni, **H**anapbuhay, **O**portunidad, at **N**utrisyon

The Memorandum of Understanding among the local government of Lupao in Nueva Ecija, Lupao Vegetable Growers Association, East-West Seed Company, and PhilRice was signed on May 11, 2020 with the aim of boosting food production in the said municipality.

This project also served as a model for the Department of Agriculture's Nationwide Adopt-A-Town Massive Gulayan sa Barangay Project implemented by its various agencies.

50 key farmers trained through 10-module Farmers Field School on vegetable production following the Philippine Good Agricultural Practices (PhilGAP) protocols.

100 home gardeners trained through Subject Matter-Specific Training on Home Gardening: From Garden to Plate

1083 farmers participated in a series of technology field days on vegetable production technologies (peer-to-peer learning approach)

3
farmer-cooperators trained on Rice-vegetable Technology

31
extension workers trained through 3-day Training of Trainers on vegetable production.

507
households were provided with access to fresh vegetables, technical know-how and seedlings for garden setup

9.5 ha
managed by individual key farmers; showcased crop diversification; nurtured with sustainable farming practices.

30,859.7 kg

assorted vegetables were produced by the project, 16,874.6 kg of which were sold to Dizon Farms, 1,934.5 kg to Mimia C., and 2,444 kg to Zagana, while the rest were sold to local/online buyers.

Distributed **1,500** papaya seedlings, **4,347** pouches of various vegetable seeds, and **660** trays of various vegetable seedlings.

Provided linkage to key industry players (Dizon Farms, DOST-FNRI, input suppliers, online buyers, etc.).

Attained up to **5.60** t/ha (NSIC Rc216) estimated yield.


PhilRice

OUTCOME 7

Strengthened Institutional Capability of PhilRice and Partners

The Board of Trustees (BOT) continues to provide DA-PhilRice with sound guidance, strategic oversight, direction, and uphold the trusts of our stakeholders in the Institute's mission.

In 2019-2020, the Institute saw the creation of the Procurement Management Division (PMD) and the Rice Competitiveness Enhancement Fund-Program Management Office (RCEF-PMO), and the expansion of the Quality Management System (QMS) to the branch stations. We also passed the QMS and Environment Management System (EMS) transition audit. We took advantage of new information and communications technologies that made information management interactive and responsive to our research efforts and administrative operations.

By improving its human and physical resources, DA-PhilRice can achieve the outputs, strategies, and impacts indicated in the previous outcomes. A well-capacitated human resource base begins with its highest officials, the Board of Trustees, and the people on the ground.

Likewise, DA-PhilRice values and continually expands partnerships and collaborations that will enhance the institute's capacity to conduct meaningful research and development that greatly benefits and strengthens both the institute and our stakeholders. We combine resources and abilities to scale our shared vision for the rice industry.

OUTCOME 7 AT A GLANCE

Strengthened institutional capability of PhilRice (and partners).

WHAT WE ADDRESS

Restoration of PhilRice's institutional capacity

Support to branch stations' wider areas of responsibility

OUR STRATEGIES

Maintain a Board of Trustees with a balanced and active membership.

Strengthen organizational structure supported by a bigger workforce deployed in all its areas of operations.

Develop fast, efficient, and fully integrated administrative and financial support systems and processes.

Maintain our commitment to international management standards as reflected in our IMS Policy Statement.

Give the branch stations rein over their administrative and fiscal resources.

Our part in the ONE DA REFORM AGENDA:

PROFESSIONALIZATION

- Youth & Women Engagement
- Agriculture Career System
- Education and Training: Agribusiness Management

- Ease of Doing Business & Transparent Procurement

MODERNIZATION

- Technology & Innovation including Digital Agri

OUR PROGRESS:
PERCENT ACCOMPLISHED BASED ON PHILRICE'S STRATEGIC PLAN

WHAT WE CREATED

3
BOT meetings held.

27
New plantilla positions (1 renamed).

3
Branch stations passed the certification audit for ISO 9001:2015.

3
Core management information systems rolled out to branch stations.

P41.3M
Worth of infrastructure projects completed in 2019.

P38.3M
Worth of infrastructure projects completed in 2020.

101
Major equipment procured for project implementation.

12
Staff conferred with Scientist rank (3 Sci II, 9 Sci I).

75
Papers published in international and national ISI and non-ISI journals.

10
Technologies protected as Utility Models.

148
Staff provided with developmental interventions.

127
Technical personnel enjoying Magna Carta benefits.

99%
Budget utilized in 2019.

98%
Budget utilized in 2020.

13%
GAD attribution in 2020 budget.

Strengthening governance

The Board of Trustees (BOT), DA-PhilRice's highest policy-making body, ensures that the interests of the institute's stakeholders are upheld in all its management decisions. The BOT conducts meetings or caucuses to strengthen the institutional capability and governance of the Institute. Three BOT meetings were held, one in July 2019 and two in February and June 2020.

To expand and better facilitate the Institute's activities, the creation of our PMD and RCEF-PMO was approved by the DBM in 2019. PMD has 10 new and 1 renamed plantilla positions chargeable against corporate DA-PhilRice funds while RCEF-PMO has 43 contractual (co-terminous with RCEF program) and 16 plantilla positions.

27
Plantilla Positions

43
Contractual Staff

Plantilla Staff

Renamed Plantilla Position

Contractual Staff

Milestone leap to ISO 45001

DA-PhilRice passed a recertification audit conducted in 2019 for three standards with zero major non-conformities due in large measure to our migration to ISO 45001 (Occupational Health & Safety). DA-PhilRice branch stations in Midsayap, Agusan, and Bicol also passed the certification audit for ISO 9001:2015. This step further strengthened our support systems and processes toward improved administrative management.

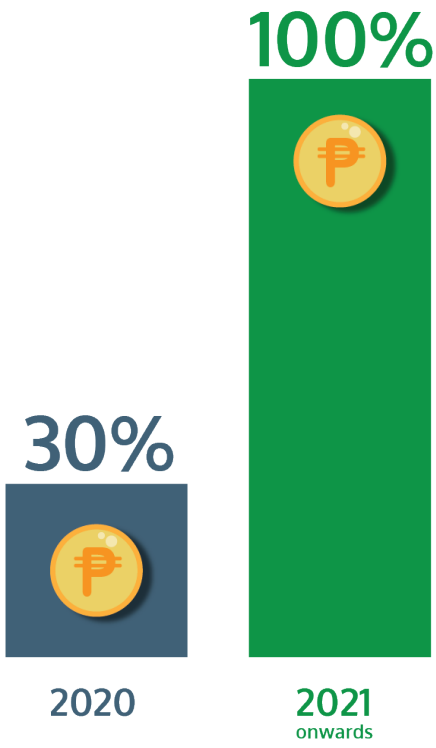
In 2020, we passed the transition audit for ISO 9001:2015 (QMS) and ISO 14001:2015 (EMS) and migration audit to ISO 45001 (OH&S).

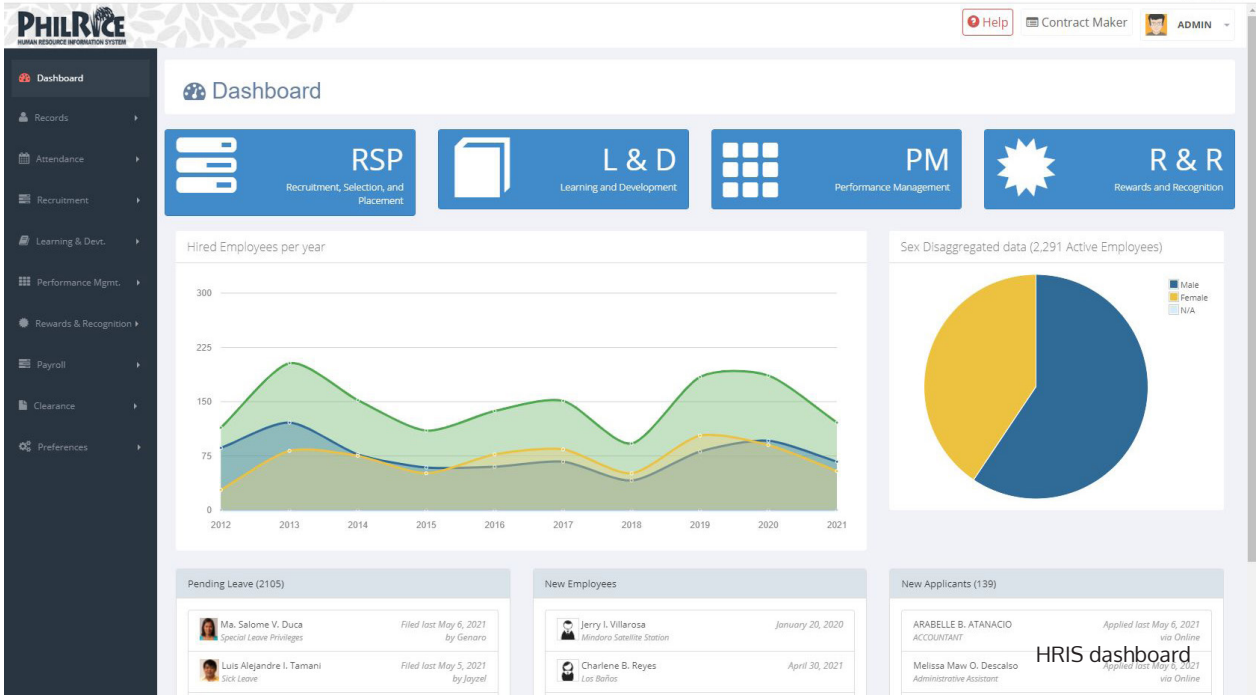
The migration is a positive step for our top management down the line in understanding how paramount safety, health, and environmental management is in creating a pleasant and hospitable workplace within and outside the epicenter of our R4D activities.

Fiscal autonomy of branch stations

Decentralizing authority and fiscal autonomy of all branch stations not only extends our management's process delegation, but also distributes functions, responsibilities, accountabilities, and matching authorities to them.

Until 2020, 30% of all income derived from seeds were retained by our 7 branch stations. Beginning in 2021, the stations shall retain 100% of their income.



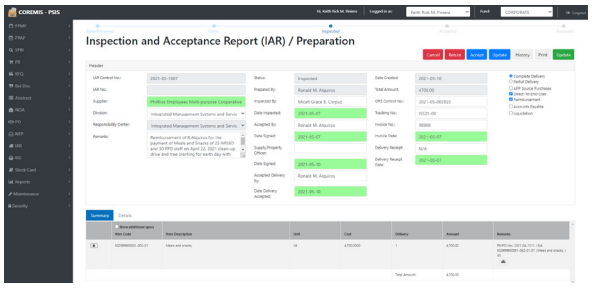


HRIS dashboard

ICT mix for integrated and unified information systems

We optimize information and communications technologies (ICT) to consolidate, streamline, integrate, and unify our operational systems. ICT is also utilized to create an interactive system of information management. This will assist key personnel in providing timely, reliable and useful information, and in making quick and informed decisions.

As early as 2017, DA-PhilRice rolled out and maintained the Core Management Information System (CoreMIS). Systems under CoreMIS such as the Financial Management Information System (FMIS), Procurement and Supplies Information System (PSIS), and Human Resource Information System (HRIS) were rolled out to the branch stations in 2020.



PSIS inspection and acceptance report preparation

The FMIS supports the automation and integration of financial management processes and offers potentials for transparency and accountability. The PSIS is a robust support system used in procurement decisions, while the HRIS is an interactive information management system that standardizes human resource tasks and processes while facilitating accurate record-keeping and reporting.

In 2020, we enhanced our administrative and finance-related information systems by incorporating new procedural or reportorial requirements from COA and DBM. The institute likewise integrated and updated its CoreMIS and other component information systems (IS). Now, databases are integrated as a single source of information thus preventing errors and data duplication. Likewise, the FMIS was also rolled out to all of PhilRice's branch stations.

Re-framing regional rice R&D into 3 programs

Three interlocking factors must be addressed in R&D to sustain agricultural productivity. These are semi-arid and adverse areas, vulnerable environments, and the need for intensified and sustainable enhancement programs.

We have re-framed these dilemmas by devising a "new exercise" composed of 3 regional R&D programs: ASAP Luzon; RISE Visayas; and DRIVE Mindanao.

Innovations in procurement

In 2019, the Procurement Management Division started the Coaching on Procurement Management and Preparation of PBB requirements to Branch Stations counterparts. The division conducted the 3rd Suppliers' Forum at CES in October and Updates on RA 9184 and

its IRR in September with participants from all branch stations. The division also initiated improvement of PMD Monitoring System by revising procurement forms.

In 2020, PMD also pushed through with the centralization of procurement at CES except for out-of-schedule Purchase Requests (PRs), Repairs and Maintenance of Office/Lab Equipment, Catering Services, and transactions unique to the concerned division.

Site development plans

In pursuing our national goal of attaining excellence and relevance in R4D, we have implemented 8 site development plans for our branch stations.

Improving the efficiency of our infrastructures and facilities is necessary to optimize everyone's productivity.

In 2019, 19 infra projects, including repair and maintenance, were completed amounting to P41.3M. Completed in 2020 amounted to P38.3M.

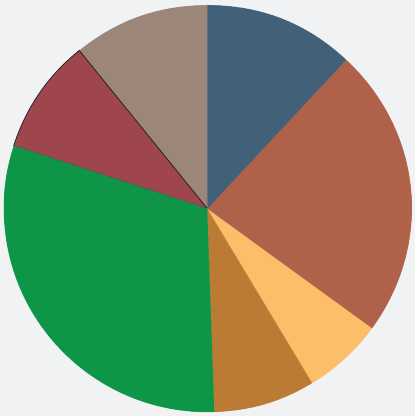
Included in these projects is the repair and improvement of staff houses, apartments, and guest houses in CES and branch stations like the completion of a two-storey 4-door apartment in Isabela. With this, we can house employees and visitors coming from other provinces.

Transport mobility increases opportunities in undertaking fundamental tasks in day-to-day operations such as general dispatch, waste management, emergency, operations, and vehicle service for officials. DA-PhilRice CES currently has 20 serviceable vehicles for such purposes.

In 2019, an authority to purchase (ATP) for 6 vehicles (3 vans, 3 pick-ups) was granted, and 2 units of pick-up trucks were delivered. In 2020, an ATP for 5 vehicles was granted.

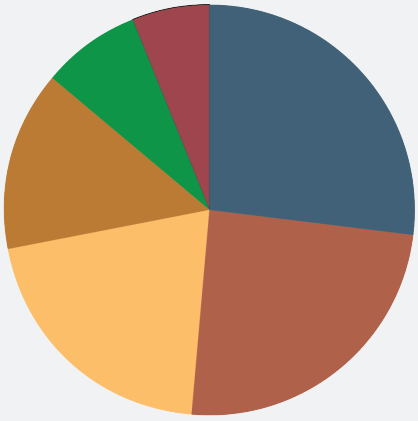
Major Infrastructure Projects

2019



- 4.1M — Rehabilitation and Upgrading of Electrical System from Mid terminal to North terminal at PhilRice CES.
- 8M — Construction of Buffer Stock Seed Warehouse and Site Development at PhilRice CES.
- 2.1M — Improvement of JICA Headhouse and Glasshouse and Crop Service Building at PhilRice CES.
- 2.8M — Construction of Screen House with head house at PhilRice Agusan.
- 10.5M — Supply, Delivery and Installation with testing and Commissioning of Brand New GenSet with Trailer House at PhilRice CES.
- 3.1M — Supply, Delivery, installation and Commissioning of three 333KVA Distribution Transformer for CBC at PhilRice CES.
- 3.7M — Improvement of BDD Office at PhilRice CES.

2020



- 8.99M — Improvement of Existing Administrative Building at PhilRice Isabela.
- 8.14M — Construction of Motorpool and FOM at PhilRice Midsayap.
- 6.92M — Improvement of Research Laboratories at PhilRice CES.
- 4.67M — Upgrading Electrical System at PhilRice Isabela.
- 2.6M — Repair & Improvement of Hybrid Building at PhilRice CES.
- 2M — Repair and Improvement of Farm Canal and Roads including Replacement of Road Signages at PhilRice CES.

Equipment and materials needed for implementing projects were also made available through government subsidy and externally funded projects.

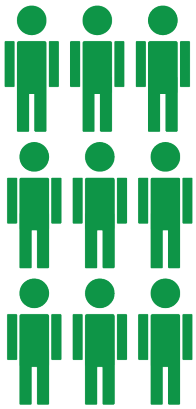
In 2019, 51 major equipment were procured, amounting to P61.8M, from all fund sources. In 2020, we procured 50 equipment amounting to P73.5M.

New and upgraded scientists and journal publications

Recognizing the important roles and achievements of researchers and scientists is a part of DA-PhilRice's institutional culture. Such recognition not only bestows personal satisfaction and confidence on those whose positions are upgraded, but also underscores a new growth path in their careers.

In 2019, four Scientist I were conferred; in 2020, two more Scientist I, and one was upgraded to Scientist II. In total, DA-PhilRice has three Scientist II and 9 Scientist I.

3
SCIENTIST II



9
SCIENTIST I

In 2019, our scientists and researchers published 40 papers in international and national ISI and non-ISI journals; 6 books and book chapters; and eight technologies were protected with patents and utility models in the same year.

In 2020, we published 35 papers in international, national and non-ISI journals, including 3 books and book chapters. These are an excellent metric of DA-PhilRice as an R&D organization. This accomplishment not only advanced the frontier of new knowledge and applications, but also

35
papers in international, national, and non-ISI journals. Including

3
books and book chapters

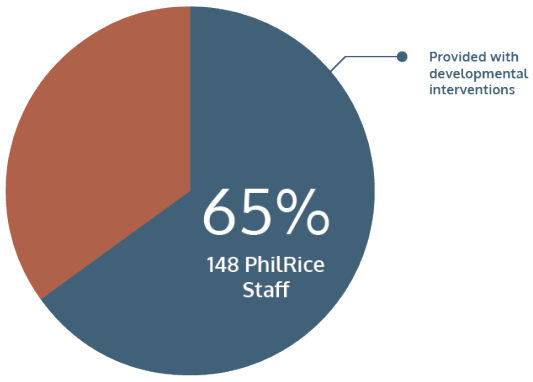
attested to the institute's ability to conduct scientifically grounded research that adheres to publication standards of scientific journals.

A pollen bank is essential in preserving valuable genetic resources for our rice breeding program. We have developed 2 new technologies– pollen banking for synchronized pollination and brown rice-ice cream sandwich– now protected as utility models in 2020.

Learning culture

We provide opportunities for our staff to advance in their chosen fields through scholarship grants or degree trainings. While these grants ensure loyalty and continuity of service to the Institute, they afford grantees opportunities to network with other people in the same field.

In 2020, three staff members earned their degrees (2 PhD, 1 Master's). Two others were accepted for degree trainings, with one ongoing DOST application.



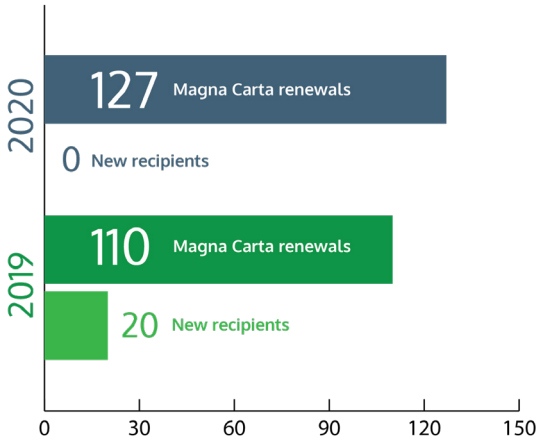
Also, 148 or 65% of our staffers attended various developmental interventions; 3 in-house trainings.

DA-PhilRice is accredited as a Continuing Professional Development (CPD) local provider for agriculture (RCEF Training of Trainors on Production of High-Quality Seeds and Farm Mechanization, and Ugnay Palay: R4D e-Conference).

In PRAISE of staff

In 2013, we implemented our revised guidelines on incentives and rewards system called DA-PhilRice Program on Awards and Incentive for Service Excellence (PhilPRAISE). Its guidelines were enhanced and repeatedly presented to the Board of Trustees for refinement. By so doing, PhilPRAISE further bolsters the Institute's recognition-rich culture.

Magna Carta accreditation



Magna Carta accreditation enables R&D staff who qualify to enjoy an array of benefits as stipulated under Republic Act 8439, otherwise known as A Magna Carta for Scientists, Engineers, Researchers and Other Science and Technology Personnel in Government.

As of 2020, 127 technical personnel are enjoying Magna Carta benefits compared to 2019's 110 renewals and 20 new accreditations.

Budget utilization

DA-PhilRice fund utilization amounted to 99% (out of P771.5M) in 2019, and 98% (P625.5M) in 2020.

For 2019-2020, we have earned gross incomes of about P27.93M and P30.03M, respectively. These were used for capital outlay (infrastructure and equipment) and operation expenses.

Human resource management

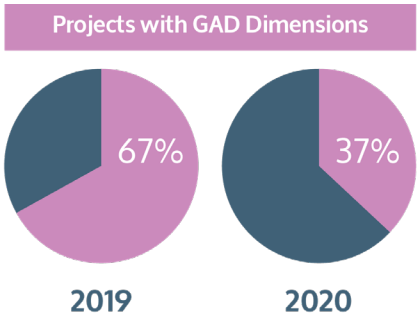
In 2019, the Civil Service Commission (CSC) granted the bronze award to the Institute's Human Resource and Management Office (HRMO) recognizing its excellence in management systems, practices, and competencies.

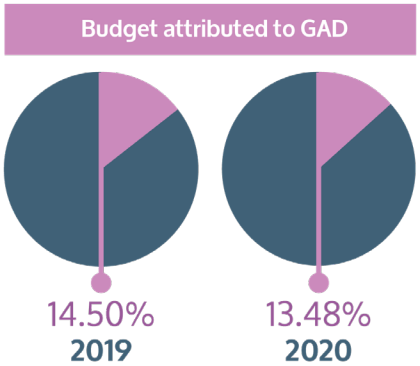
COA compliance

In 2020, our Financial Management Division reconciled and adjusted P185,936,063.15 of prior years' accounts (Accounts Payable, Cash Advances, Fund transfers). This is one of the perennial problems of the institute in terms of audit observations.

Gender and Development (GAD)

Gender mainstreaming efforts were integrated in 77 projects in 2019 and 2020. These are vital steps in ensuring gender equity and social inclusivity.

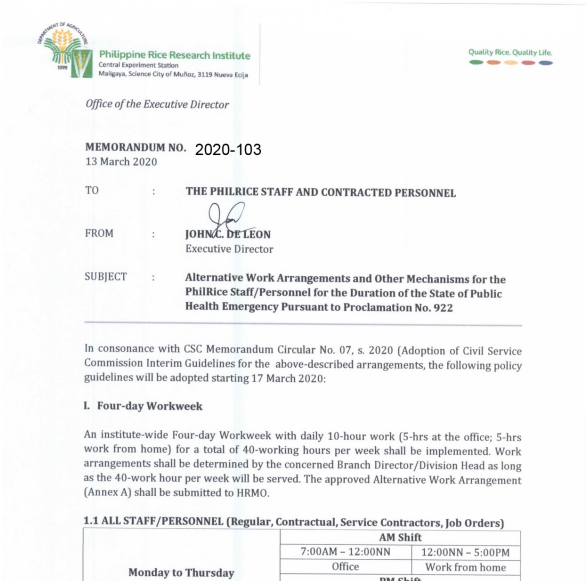




Managing COVID-19

At the onset of the COVID-19 pandemic, we immediately responded with pertinent guidelines, advisories, resources, and materials to ensure continued services and operations. On top of this is ensuring the wellness of our personnel, workers, and our clientele.

We also strengthened our 'connectivity' in terms of facility and relationship with our partners to deliver more despite limitations in mobility.



Philippine Rice Research Institute
Central Experiment Station
Maligaya, Science City of Muñoz, 3119 Nueva Ecija

Quality Rice. Quality Life.

Office of the Executive Director

MEMORANDUM NO. 2020-103
13 March 2020

TO : **THE PHILRICE STAFF AND CONTRACTED PERSONNEL**

FROM : **JOHN C. DE LEON**
Executive Director

SUBJECT : **Alternative Work Arrangements and Other Mechanisms for the PhilRice Staff/Personnel for the Duration of the State of Public Health Emergency Pursuant to Proclamation No. 922**

In consonance with CSC Memorandum Circular No. 07, s. 2020 (Adoption of Civil Service Commission Interim Guidelines for the above-described arrangements, the following policy guidelines will be adopted starting 17 March 2020:

I. Four-day Workweek

An institute-wide Four-day Workweek with daily 10-hour work (5-hrs at the office; 5-hrs work from home) for a total of 40-working hours per week shall be implemented. Work arrangements shall be determined by the concerned Branch Director/Division Head as long as the 40-work hour per week will be served. The approved Alternative Work Arrangement (Annex A) shall be submitted to HRMO.

1.1 ALL STAFF/PERSONNEL (Regular, Contractual, Service Contractors, Job Orders)

	AM Shift	
	7:00AM – 12:00NN	12:00NN – 5:00PM
Monday to Thursday	Office	Work from home

Alternative work arrangement memo.

Alternative work arrangements

We implemented institute-wide alternative work arrangements for the staff/personnel in line with Proclamation No. 922 which declared a State of Public Health Emergency throughout the Philippines and following the interim guidelines set by the Civil Service Commission Memorandum Circular No. 07, series of 2020.

Safety/health protocols

Institutional policies were disseminated thru memorandum orders to establish safety and health protocols in close coordination with the local IATF. We provided temporary quarters and facilities for staff requiring quarantine and health care in collaboration with the local rural health unit.

We minimized face-to-face group activities and mass gatherings. Instead, we used Facebook live, Zoom, Webex, and other tools for video conferencing, virtual tours, and recording for delayed streaming/sharing to staff.

Psychological first-aid and helpline launched

To help staff manage psycho-social distress caused by the Covid-19 pandemic and foster short- and long-term adaptive functioning and coping, we conducted mindfulness and debriefing sessions among 592 staff.

We also opened 24/7 'Kumusta, Ka-PhilRice' Helpline to offer ways of healthy coping in partnership with the United Registered Social Workers.

Statement of Financial Position

ASSETS (PhP)

	2019	2020
CURRENT ASSETS		
Cash and Cash Equivalents	1,558,289,964.89	1,509,077,442.32
Receivables	387,447,178.05	1,127,795,577.57
Inventories	299,977,646.76	350,498,957.49
Other Current Assets	1,210,479,219.41	777,441,487.98
Total Current Assets	**3,456,194,009.11**	**3,764,814,465.36**
NON-CURRENT ASSETS		
Property, Plant and Equipment	1,166,578,701.70	1,223,248,501.37
Biological Assets	93,340.00	92,740.00
Total Non-Current Assets	1,166,672,041.70	1,223,341,241.37
TOTAL ASSETS	**4,622,866,050.81**	**4,988,155,706.73**

LIABILITIES (PhP)

	2019	2020
CURRENT LIABILITIES		
Financial Liabilities	2,308,339,019.13	1,036,133,394.89
Inter-Agency Payables	452,138,100.73	464,434,837.61
Intra-Agency Payables	150,823,241.00	190,618,221.44
Trust liabilities	4,038,552.71	5,331,699.85
Deferred Credits	41,133,689.42	49,251,145.44
Provisions		125,748,091.69
Other Payables	346,844,167.99	370,363,326.37
Total Current liabilities	**3,303,316,770.98**	**2,241,880,717.29**
TOTAL LIABILITIES	**3,303,316,770.98**	**2,241,880,717.29**
TOTAL NET ASSETS (Total Assets less Liabilities)	**1,319,549,279.63**	**2,746,274,989.45**

NET ASSETS and EQUITY (PhP)

	2019	2020
EQUITY		
Government Equity	**1,319,549,279.63**	**2,746,274,989.45**
TOTAL NET ASSETS & EQUITY	**1,319,549,279.63**	**2,746,274,989.45**

Officials

BOARD OF TRUSTEES

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Secretary of Agriculture
Ex-Officio Chairperson

HON. EMMANUEL F. PIÑOL
(up to Aug. 4, 2019)

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Agribusiness Community

HERCULANO C. CO JR.
Grains Business Sector

FRANCISCO GIL N. GARCIA
Academic Community

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Consumer Sector

ROMEO S. VASQUEZ
Agribusiness Sector

LUIS REY I. VELASCO
Academic Community

CONSTANTE T. BRIONES
Board Secretary

PHILRICE MANAGEMENT COMMITTEE

JOHN C. DE LEON
Executive Director

SAILILA E. ABDULA
Acting Executive Director
(up to Sep. 15, 2019)

KAREN ELOISA T. BARROGA
Deputy Executive Director for Development

ABNER T. MONTECALVO
Deputy Executive Director for Administrative Services and Finance

EDUARDO JIMMY P. QUILANG
OIC, Office of the Deputy Executive Director for Research

FLORDELIZA H. BORDEY
Director, RCEF-PMO
Deputy Executive Director for Special Concerns

Branch Station Directors and Satellite Office Heads

CAESAR JOVENTINO M. TADO
Agusan

REYNALDO C. CASTRO
Batac

VICTORIA C. LAPITAN
Bicol

LEO C. JAVIER
Isabela

RHEMILYN R. SEVILLA
Los Baños

OMMAL H. ABDULKADIL
Midsayap
(Jan. 2019 - Sept.4, 2019)

SAILILA A. ABDULA
Midsayap

GERARDO F. ESTOY JR.
Negros

NOEL O. MABAYAG
CMU Field Office

ALBERT CHRISTIAN S. SUÑER
(until Aug. 30, 2020)

WILFREDO B. COLLADO
Mindoro Satellite Station

FERNANDO D. GARCIA
(until August 9, 2020)

JUNIOR A. SIENES
Samar Satellite Station

ROLANDO R. NARISMA
Zamboanga Satellite Station

Research Division Heads

JOVINO L. DE DIOS
Agronomy, Soils, and Plant Physiology

GENARO S. RILLON
Crop Protection

OLIVER E. MANANGKIL
Plant Breeding and Biotechnology

ROSALY V. MANAOIS
Rice Chemistry and Food Science

ARNOLD S. JULIANO
Rice Engineering and Mechanization

JONATHAN M. NIONES
Genetic Resources

JESUSA C. BELTRAN
Socioeconomics

ROEL R. SURALTA
DA-Crop Biotechnology Center

Development Division and Office Heads

RONAN G. ZAGADO
Development Communication

LEA D. ABAOAG
Technology Management and Services

DIADEM B. GONZALES-ESMERO
Community Relations Office

ROGER F. BARROGA (†)
(up to Sep. 23, 2019)

LUIS ALEJANDRE I. TAMANI
Information Systems

General Administrative Support Services Division and Office Heads

SOPHIA T. BORJA
Administrative Support Division

MARY GRACE D. CORPUZ
Financial Management

RENATO B. BAJIT
Physical Plant

FIDELA P. BONGAT
Business Development

JOSELITO A. KALAW
Corporate Services

GLENDA D. RAVELO
Procurement Management

HAZEL JANE M. ORGE
Integrated Management Systems and Services Office

AUREA C. COSIO
Internal Audit Unit

CONSTANTE T. BRIONES
Board Secretary

PhilRice Employees

BOARD OF TRUSTEES

Briones, Constante T.	Board Secretary IV

OFFICE OF THE EXECUTIVE DIRECTOR

De Leon, John C.	Executive Director
Abdula, Sailila E.	Acting Executive Director *(until Sept. 2019)*
Kalaw, Glendaline L.	Executive Assistant III
Alvarez, Rolando F.	Administrative Aide V

INTERNAL AUDIT UNIT

Cosio, Aurea C.	Internal Auditor IV
Santiago, Roy V.	Internal Auditor III *(until Feb. 2020)*

CORPORATE SERVICES DIVISION

Kalaw, Joselito A.	Development Management Officer (DMO) IV
Aquino, Recille G.	DMO III
Mandia, Laarnie L.	Planning Officer II

RICE COMPETITIVENESS ENHANCEMENT FUND - PROGRAM MANAGEMENT OFFICE

Bordey, Flordeliza H.	Deputy Executive Director IV
Briones, Teodora L.	Planning Officer V
Corales, Rizal G.	Chief Science Research Specialist
Dilla, Myline A.	Supervising AO
Padilla, Michelle C.	Administrative Officer (AO) III
Bagtilay, Pia Joy Sunshine J.	Administrative Assistant V
Quimson, Alejandro C.	Administrative Aide V
Alupay, Maribell B.	PDO III
Macadamia, Julian C.	PDO III
Credo, Rhey Mark S.	PDO III
Canilao, Jacqueline Lee O.	PDO III
Romarez, Gilbert V.	PDO III
Varquez, Frenciso L.	PDO III
Capiroso, Roseleen M.	Science Research Specialist (SRS) II
Nuñez, Gina C.	SRS II
Gandawali, Nasrudin S.	SRS I
Maristela, Julius C.	SRS I
Dela Cruz, Jhoemar B.	SRS I
Garcia, Magiting T.	SRS I
Marcelo, Paul Nathaniel M.	SRS I
Rivera, Jesusa M.	SRS I
Pungtilan, Bryan S.	SRS I
Valdez, Darwin G.	SRS I *(until Aug. 2020)*
Gamilla, Jayson P.	Information Systems Analyst (ISA) II

OFFICE OF THE DEPUTY EXECUTIVE DIRECTOR FOR ADMINISTRATIVE SERVICES AND FINANCE

Montecalvo, Abner T.	Deputy Executive Director IV
Duldulao, Joy Bartolome A.	Senior SRS
Conversion, Rosielyn P.	Executive Assistant III
Dela Cruz, Ronaldo J.	Administrative Aide IV

ADMINISTRATIVE SUPPORT DIVISION

Borja, Sophia T.	Chief AO
Gibe, Ma. Ethel P.	Supervising AO
Molina, Elizabeth P.	AO V
Clariz, Ma. Teresa R.	AO IV
Miranda, Guadalupe C.	AO IV

FINANCIAL MANAGEMENT DIVISION

Corpuz, Mary Grace D.	Chief Accountant
Salvador, Marychelle B.	Supervising AO
Padolina, Maria Romina F.	AO V
Ramos, Elizabeth C.	AO III
Requito, Jasmin G.	AO III
Agudia, Joy T.	Accountant III
Diaz, Erla Q.	Internal Auditor II

PHYSICAL PLANT DIVISION

Bajit, Renato B.	Chief AO
Alonzo, Fe G.	Supervising AO
Irang, Reynaldo E.	Farm Superintendent III
General, Daryl F.	Farm Superintendent I

INTEGRATED MANAGEMENT SYSTEMS AND SERVICES OFFICE

Orge, Hazel Jane M.	Supervising AO

BUSINESS DEVELOPMENT DIVISION

Bongat, Fidela P.	Division Chief III
Ramos, Mario R.	Chief SRS
Serapion, Jerry C.	Intellectual Property Rights Specialist IV
Narvadez, Chona Mae S.	Sales and Promotion Supervisor (SPS) IV
De Gracia, Irmina R.	Planning Assistant
Alfon, Hazel B.	SPS III
Capistrano, Maureen P.	SPS III
Orcino, Jose A.	SPS II
Cruz, Rodjason B.	Warehouseman II

PROCUREMENT MANAGEMENT DIVISION

Ravelo, Glenda D.	Chief AO
Villaroman, Grace S.	Supervising AO
Narca, Gina B.	AO V
Donayre, Abegail T.	AO V
Tibayan, Maria Cielo J.	AO V
Hibionada, Felylee B.	AO IV
Miguel, Marjorie T.	AO II
Musa, Christopher Dave B.	AO II

OFFICE OF THE DEPUTY EXECUTIVE DIRECTOR FOR RESEARCH

Quilang, Eduardo Jimmy P.	Chief SRS
Francia, Shereen R.	Executive Assistant III
Labay, Anna Liza P.	AA V
Salvador, Virginia P.	Librarian III
Bulaon, Irish D.	Librarian II
Santos, Arbie B.	Administrative Aide V

PLANT BREEDING AND BIOTECHNOLOGY DIVISION

Desamero, Nenita V.	Chief SRS
Manigbas, Norvie L.	Chief SRS (Scientist II)
Arocena, Emily C.	Supervising SRS
Manangkil, Oliver E.	Supervising SRS
Perez, Loida M.	Supervising SRS
Caguiat, Joanne D.	Senior SRS
Gramaje, Leonilo V.	Senior SRS
Pacada, Imeldalyn G.	Senior SRS

Rillon, Juliet P.	Senior SRS
Santiago, Errol V. †	Senior SRS *(until Oct. 2020)*
Waing, Frodie P.	Senior SRS
Barroga, Wilhelmina V.	SRS II
Cabusora, Christopher C.	SRS II
Pariñas, Julieta F.	SRS I

RICE CHEMISTRY AND FOOD SCIENCE DIVISION

Romero, Marissa V.	Chief SRS
Bandonill, Evelyn H.	Supervising SRS
Ramos, Riza A.	Supervising SRS
Corpuz, Henry M.	Senior SRS
Mamucod, Henry F.	Senior SRS
Manaois, Rosaly V.	Senior SRS
Bulatao, Rodel M.	SRS II
Morales, Amelia V.	SRS I

AGRONOMY, SOILS, AND PLANT PHYSIOLOGY DIVISION

De Dios, Jovino L.	Supervising SRS
Javier, Evelyn F.	Supervising SRS
Malabayabas, Myrna D.	Supervising SRS
Capistrano, Ailon Oliver V.	Senior SRS
Cruz, Jayvee A.	Senior SRS (Scientist I)
Cañete, Sandro D.	SRS II
Espiritu, Annie E.	SRS II
Grospe, Filomena S.	SRS I
Espiritu, Alex J.	SRS I

CROP PROTECTION DIVISION

Rillon, Genaro S.	Chief SRS
Dela Peña, Fe A.	Supervising SRS
Niones, Jennifer T.	Supervising SRS
Donayre, Dindo King M.	Senior SRS (Scientist I)
Martin, Edwin C.	Senior SRS (Scientist I)
Marquez, Leonardo V.	Senior SRS
Valdez, Evelyn M.	Senior SRS
Santiago, Gilely D.	Senior SRS
Avellanoza, Eleanor S.	SRS II
Duca, Ma. Salome V.	SRS II
Santiago, Salvacion E.	SRS I

RICE ENGINEERING AND MECHANIZATION DIVISION

Regalado, Manuel Jose C.	Chief SRS (Scientist I)
Bautista, Elmer G.	Supervising SRS (Scientist I)
Juliano, Arnold S.	Supervising SRS
Orge, Ricardo F.	Supervising SRS (Scientist II)
Ramos, Joel A.	Supervising SRS
Tallada, Jasper G.	Supervising SRS
Pascual, Kristine S.	Senior SRS
Ramos, Paulino S.	Senior SRS
Abon, John Eric O.	SRS II
Miano, Joey P.	SRS II
Villota, Katherine C.	SRS I

GENETIC RESOURCES DIVISION

Niones, Jonathan M.	Chief SRS (Scientist I)
Brena, Susan R.	Supervising SRS
Caguiat, Xavier Greg I.	Senior SRS
Ferrer, Marilyn C.	Senior SRS
Mananghaya, Teodora E.	SRS II
Newingham, Ma. Cristina V.	SRS I

DA-CROP BIOTECHNOLOGY CENTER

Suralta, Roel R.	Chief SRS (Scientist II)
Dela Cruz, Arlen A.	Senior SRS
Ordonio, Reynante L.	Senior SRS (Scientist I)

SOCIOECONOMICS DIVISION

Beltran, Jesusa C.	Chief SRS (Scientist I)
Manalo, Jaime A. IV	Supervising SRS
Mataia, Alice B.	Supervising SRS
Litonjua, Aileen C.	Senior SRS
Manalili, Rowena G.	Senior SRS
Arida, Imelda A.	Senior SRS
Baltazar, Marco Antonio M.	SRS II

OFFICE OF THE DEPUTY EXECUTIVE DIRECTOR FOR DEVELOPMENT

Barroga, Karen Eloisa T.	Deputy Executive Director IV
Lisondra, Joybeth N.	Executive Assistant III
Baldovino, Arlene S.	AA V
Gonzales, Roberto E.	Administrative Aide V

COMMUNITY RELATIONS OFFICE

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Lanuza, Andrei B.	Senior SRS

DEVELOPMENT COMMUNICATION DIVISION

Zagado, Ronan G.	Chief SRS
Antonio, Hazel V.	Senior SRS
Layaoen, Myriam G.	Senior SRS
Manalo, Hanah Hazel Mavi B.	Senior SRS
Dacumos, Carlo G.	Creative Arts Specialist II
Nidoy, Mary Grace M.	SRS I

TECHNOLOGY MANAGEMENT AND SERVICES DIVISION

Corales, Aurora M.	Chief SRS (Scientist I)
Abaoag, Lea D.	Supervising SRS
Angeles, Ev P.	Supervising SRS
Ilar, Glenn Y.	Supervising SRS
Pascual, Joel V.	Supervising SRS
Manalang, Marvin D.	Senior SRS
Pineda, Rowena A.	Senior SRS
Abando, Mark Angelo A.	Senior SRS
Del Castillo, Kremlin M.	SRS II

INFORMATION SYSTEMS DIVISION

Barroga, Roger F. †	Information Technology Officer (ITO) III *(until Sept. 2019)*
Tamani, Luis Alejandre I.	ITO II
Diaz, Consolacion D.	ITO I
Arocena, Arturo C. Jr.	ISA II

BRANCH STATIONS

AGUSAN

Tado, Caesar Joventino M.	Director I
Reyes, Jasmin J.	Chief SRS
Giray, Adelaida B.	Supervising AO
Bondad, Rochelle Marie P.	AO IV
Cadiz, Irma O.	Cashier II
Galvez, Kharen R.	AO II
Sarate, Jobelle O.	Accountant II
Nemeño, Genevive A.	Supervising SRS
Magahud, Jehru C.	Senior SRS
Bastasa, Dexter B.	SRS II
Tabudlong, Belen M.	SRS II
Yonson, Hilario A.	SRS II
Bequibel, Manny Caesar M.	SRS I

Gaquit, Evanny M.	SRS I
Rivas, Sharen T.	SRS I
Tape, Alona P.	SRS I
Villarina, Jerry C.	Farm Superintendent I
Abao, Nievalin B.	Warehouseman I

BATAC

Castro, Reynaldo C.	Director I
Baradi, Mary Ann U.	Chief SRS
Juliano, Leylani M.	Chief SRS
Abrogena, Nida Q.	Supervising SRS
Catudan, Bethzaida M.	Senior SRS
Maloom, Juanito M.	Senior SRS
Ganotisi, Rosana Sabella O.	AO III
Ordonia, Jovelyn P.	Accountant II
Penera, Mildred L.	AA II
James, Joel G.	Land Management Officer II
Alibuyog, Anielyn Y.	Senior SRS
Abad, Mae Rose M.	SRS II
Pajarillo, Benjamin A. Jr.	SRS II
Taguda, Lex C.	SRS II
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PhilRice

The Philippine Rice Research Institute (DA-PhilRIce) is a government corporate entity (Classification E) under the Department of Agriculture. We were created through Executive Order 1061 on 5 November 1985 (as amended) to help develop high-yielding and cost-reducing technologies so farmers can produce enough rice for all Filipinos. With our "Rice-secure Philippines" vision, we want the Filipino rice farmers and the Philippine rice industry to be competitive through research for development (R4D) work in our central and seven branch stations, including our satellite stations, coordinating with a network that comprises 60 agencies strategically located nationwide. We have the following certifications: ISO 9001:2015 (Quality Management), ISO 14001: 2015 (Environmental Management), and ISO 45001:2018 (Occupational Health and Safety).

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