



NOTABLE ACCOMPLISHMENTS January to December 2023

DA-PhilRice implemented 87 rice research for development (R4D) projects to strengthen national rice R4DE capabilities in generating information, technologies, and other products. Through close collaboration with partners and the use of online and offline media platforms, these information, varieties, machines, and crop management options are promoted through trainings, field days, exhibits, and knowledge products and materials.

Highlights of accomplishments are as follows:

Strategic Agenda 1: Boosting local production and raising farmers' and fisherfolk's income

PAP 1.1: Conduct of regional rice R4D programs for Luzon, Visayas, and Mindanao

Seed Production

1. Nucleus seeds were produced and made available: 800 panicles each for the four nationally recommended rice varieties, and 400 panicles each for the 13 regionally recommended and 20 other rice varieties.
2. Certified breeder seeds (230 kg to 315 kg) of four nationally recommended rice varieties (NSIC Rc 216, Rc 222, Rc 402, and Rc 480), and 50 kg to 340 kg of the 16 regionally recommended varieties were made available to target next-users. Likewise, registered seeds (190,718 kg or 9,535 20kg-bags) with 99.69% efficiency and 41,080 kg (4,108 10kg-bags) of foundation seeds with 90.93% efficiency were produced during the 2023 dry season and made available.
3. CES-produced foundation seeds of upland, *Sahod Ulan*, and *Salinas* rice varieties were provided to DA-PhilRice Bicol and LGU of Basey, Samar.
4. F1 hybrid seeds of DA-PhilRice-bred CMS-based NSIC 2022 Rc 714H (Mestiso 132) for Central Luzon recommendation were produced for technology demonstration trials.

Integrated Crop Management

5. No fall armyworm (FAW) was observed in all 23 monitoring sites in Gonzaga and Sta. Ana, Cagayan. However, FAW has been found in San Jose City and Maligaya, Science City of Muñoz, Nueva Ecija. Two versions (English and Tagalog) of *Pest Alert on FAW* flyer were available and uploaded as handout in *Pinoy RKB*.
6. Field evaluation of the efficiency of the DA-PhilRice-developed mechanical weeder showed promising results in suppressing major weeds and weedy rice in irrigated lowland rice.
7. A focus group discussion documented the weedy rice management practices, perceptions, and information sources of farmers from Sariaya, Quezon. Weedy rice samples were collected in Sariaya and Lucena City, Quezon.

Extension Support, Education, and Training Services (ESETS)

8. ICT and non-ICT-based knowledge-sharing and learning platforms were employed. PhilRice presence in the R&D communities is ensured year-round.
 - ✓ As of 29 December 2023, 8,180 users visited the 360 virtual tour (<https://360tour.philrice.gov.ph>). Visitor management received an Outstanding rating from 208 groups (2,731 males; 1,996 females), accommodated from January to December 2023.
 - ✓ Twenty-six RCEF *PalayAralan* sessions received an Outstanding rating. These featured rice production and management practices following the rice planting calendar to educate and empower farmers and help them with decision-making. Livestreamed via the DA-PhilRice Facebook page, these webinars on nutrient, water, insect pest, disease, and weed management had 2,475 live viewers, 124,897 post views, 33,675 engagements, and reached 176,960 individual social media users.
 - ✓ Two *Lakbay Palay* activities, one each season (March and September 2023), were attended by >2,200 farmers and partners from Regions 1 to 3, and recorded ≈68,000 total reach through our official DA-PhilRice Facebook page. The March 2023 DS activity was themed *RCEF, Ano na?* while the September 2023 WS activity highlighted *Bida ang Sama-sama!*
 - ✓ The DA-PhilRice Text Center registered 188,807 new users. Text blasts (30) sent out tips on rice production, management, and post-production; RCEF-related relevant information; and push messages on *PalayAralan* live webinars, *Lakbay Palay* WS 2023, and National Rice Awareness month online launching and culminating activities.
 - ✓ Seventy-nine (79) news and features and 73 radio segments on core activities and RCEF Seed and Extension Programs were uploaded on DA-PhilRice Online and broadcasted over 25 radio stations, respectively. The *Pinoy* Rice Knowledge Bank gained 92,082 unique visits and 96% customer satisfaction rating. The DA-PhilRice Facebook page uploaded 236 original posts, resulting in 5,916,047 reach.
 - ✓ More than 100 knowledge products have been produced this year. These are in the forms of magazines (English and Filipino versions), journals, calendar, posters, booklets, brochures, handouts, videos, and audio clips. These are designed deliberately for specific audiences using appropriate language, photo, design/layout, and format.
9. Trainings conducted within January to December 2023 (97 batches) received an Excellent rating. These focused on PalayCheck system, integrated pest and nutrient management, high-quality inbred rice seed production, farm mechanization, and Rice Specialists' Training Course (RSTC). The 4,621 participants posted an average gain-in-knowledge of 38% to 89%.
10. Thirty-seven (37) batches of trainings were accredited by the Professional Regulation Commission (PRC) and provided Continuing Professional Development (CPD) points to participants upon completion of the courses.
11. Training forms, collaterals, and materials were updated and disseminated to branch stations through a memorandum and a series of briefing and coaching sessions.
12. A new refresher course for graduates of the RCEF RSTC resulted from a training needs assessment (TNA). Two other TNA sessions were conducted for graduates of pilot batches of the Agricultural Development Officers of the Community (AgRiDOC) training program. Two online tracer surveys for the 2019-2021 RCEF RSTC and 2014-2015 AgRiDOC graduates gathered data on their

whereabouts and feedback on the most significant change brought by the training programs on their personal and professional growth.

Rice Business Innovations System (RiceBIS) Community Program

13. Twenty-three farmer-clusters were identified for sustainable agroenterprise development and linked with institutional markets (Zambales and Bicol RiceBIS Community to Kiwanis International; Mangatarem RiceBIS Community to MayaniPH; and Negros Occidental RiceBIS Community to CM & Sons Food Products Inc. [Merzci]). Isabela's new RiceBIS Community, the St. Vincent Parish Multipurpose Cooperative, delivered 150 tons of milled rice (>₱7.33M) to the Philippine Disaster Risk Reduction Network in November to December 2023.
14. Partnerships with RestoPH, Nueva Ecija and Bayambang LGUs were set in motion while other prospective institutional buyers such as the Baguio Country Club, Philippine Military Academy, and the Philippine Hospital Association (PHA) were established. Two PHA members in Agusan del Norte requested rice samples and planned to order from the RiceBIS communities.
15. The BPI Foundation provided ₱5.2M to a Negros Occidental-based RiceBIS Community to procure a hauling truck, a milling machine for both white and brown rice, and a seed money of ₱2.0 M.
16. In partnership with DA-BPI, 43 project implementers (26 females, 17 males) from eight DA-PhilRice branch stations were trained on Good Agricultural Practices and Product Standards in July 2023. A total of 520 RiceBIS farmers (190 females, 330 males) in various DA-PhilRice stations participated in 15 batches of PhilGAP training. Also, 603 farms were already identified for potential GAP certification.
17. Site Working Group workshops (22) were conducted in Nueva Ecija (CES), Negros, Isabela, Agusan, Midsayap, Pangasinan, Bicol, Batac, and Los Baños, participated by representatives of RiceBIS communities, and partner-organizations and agencies. Twelve cluster development plans (CDPs) were crafted together with SWG members as their pledge of support for the development of specific agroenterprise of farmer-clusters, particularly on helping provide farm machinery and facilities, necessary trainings and technical support, and financial support.
18. Farmer clusters (62) were assessed for appropriate agroenterprise. In partnership with Go Negosyo, a workshop on business plan development prepared and empowered project implementers in assisting farmer-clusters for the establishment and development of identified agroenterprise. Business plans and business model canvases (22 each) were developed for the identified farmer-cluster rice-based enterprises in 23 RiceBIS communities. Most farmer-clusters are engaged in milled rice, brown rice, and pigmented rice production and marketing. Others ventured in palay consolidation or trading.
19. Through a ceremonial signing, the BIDA RiceBIS campaign secured support and commitment from DA-PhilRice officials and various stakeholders from partner-cooperatives, government offices, private companies, and civic organizations. Different information materials (seven videos and four radio plugs) and collaterals (shirts) were produced and disseminated.
20. Rice food products (brown rice cookies, puffed rice, panderice, and gourmix) were introduced to women members of Isabela-based St. Vincent Multipurpose Cooperative in collaboration with DA-CVRC for potential agroenterprise during the International Day for Rural Women. Meanwhile, the rice *kropek* and rice crackers of Baclay Agrarian Reform Beneficiaries Cooperative, Milagros, Masbate (RiceBIS Bicol) were evaluated onsite for DTI and DOST product quality and process improvement. The program has partnered with DTI on labeling and packaging needs and with

DOST on equipment needs for consistent product quality; and variant or flavors to suit target markets.

21. A database consolidated business capacity assessment results for easier access of collected data.
22. A training-workshop helped implementers understand the policymaking process, systematically identify policy issues, and brainstorm on policy solutions. Workshop outputs include well-defined policy problems and goals, and policy options that may be undertaken by each RiceBIS implementing team in an effort to create a business-enabling policy environment in their respective areas of responsibility.

PAP 1.2: Location-specific rice R4D projects in support of the National Rice Program and in line with the National Agriculture and Fisheries R4D Agenda

Germplasm Conservation and Variety Development

23. Germplasm collections (530) regenerated in 2023 DS were harvested. Fifteen seed requests covering 166 seed packets were processed and attended to.
24. Two DA-PhilRice-bred varieties – NSIC 2023 Rc 730 SR and Rc 732, recommended in national irrigated and rainfed lowland areas, respectively – were approved for commercial release.
25. Breeding for rice adapted to complete submergence and flash floods identified 33 promising lines with 100% survival 21 days after de-submergence. These lines were completely submerged under low-quality water in field condition for 8 days. The lines will be evaluated for yield performance under non-stress and submergence stress conditions in 2024 DS.
26. Onsite evaluation of 10 promising breeding lines with combined tolerance to salinity and submergence in Tiwi, Albay (with salt intrusion at EC=34 dS/cm) identified two promising lines with ~90% rejuvenation.
27. Pre-NCT entries (522) were completely evaluated for milling recovery, physical attributes, amylose content (AC), and gelatinization temperature (GT). Meanwhile, 499 rice germplasms were completely assessed for milling recovery, physical attributes, and GT while 399 (80%) were evaluated for AC.
28. Six maintainer lines were completely evaluated for milling recovery, physical attributes, AC, GT, and sensory description. All samples had Premium to Grade 1 total milled rice and head rice recovery and chalky grains. Two maintainer lines had high while four had intermediate and low AC. One line was slightly aromatic and slightly tasty.
29. Elite and donor rice lines (2,491) were evaluated against major insect pests (brown planthopper, green leafhopper) and diseases (blast, bacterial leaf blight, sheath blight). Many rice lines were resistant to blast while all entries were susceptible to tungro and ShB. Intermediate reactions of rice lines were observed for resistance to BLB, GLH, and BPH.
30. Four (20%) irrigated lowland rice varieties – PSB Rc 10, NSIC Rc 358, Rc 436, and Rc 480 – were identified with combined tolerance to drought and submergence at seedling stage. Tolerance to drought and submergence at reproductive stage was also evaluated.
31. DUS testing of three promising lines with salinity tolerance applied for Plant Variety Protection was completed; awaiting issuance of certificates. Eight promising lines with drought tolerance were

nominated to NCT rainfed-drought prone rice ecosystem; one was approved (NSIC Rc 732). Two promising lines (one for special purpose, one for rainfed) were recommended as varieties by the Rice Technical Working Group to the Technical Secretariat.

32. Fifteen (15) elite breeding lines with multi-stress traits with 2-3 combinations, such as high temperature, salinity, drought, and submergence tolerance, are further evaluated in the Preliminary Yield Trial (PYT). More than 250 segregating lines were selected with multiple abiotic stress tolerance. More than 20 advanced breeding lines were selected with high temperature tolerance and with good yields under 36-38°C temperature.
33. Five newly released varieties subjected to five fertilizer treatments during the 2023DS have been evaluated for complete grain quality parameters and pasting properties. Evaluation of the effects of the treatments on these varieties for the 2023WS is underway.

Evaluation and Packaging Fertilizer Products for Balanced Nutrition of Irrigated Lowland Rice (Fertilizer Derby)

34. For DS 2023, 73 participants established field trials in seven DA-PhilRice stations. Average yield at CES was 6.81 t/ha at ₱9.51 average production cost per kilogram of palay; Isabela with 5.59 t/ha at ₱11.29/kg cost; Batac with 4.39 t/ha at ₱16.00/kg cost; Bicol with 3.93 t/ha at ₱12.44/kg cost; Negros with 4.90 t/ha at ₱10.44/kg cost; Midsayap with 2.4 t/ha at ₱24.04/kg cost (at 24.5% stemborer damage); and Agusan with 4.42 t/ha at ₱11.52/kg cost (very wet season).
35. For WS 2023, 89 participants registered in seven field evaluation sites. Nine new products were evaluated in addition to the 21 products. Average yield at CES was 4.98 t/ha at ₱9.83 average production cost; Isabela with 5.81 t/ha at ₱10.51/kg cost; Bicol with 3.03 t/ha at ₱13.49/kg cost; Negros with 6.09 t/ha at ₱8.85/kg cost; and Midsayap with 5.30 t/ha at ₱11.27/kg cost.
36. The DA-PhilRice nutrient management protocol and farmers' practice in each station remained as protocols for comparison.
37. Each field site was prominently featured during the *Lakbay Palay* program at respective locations.

Rice Business Innovations System (RiceBIS) Community Program

38. The RiceBIS Zaragoza (Nueva Ecija) farmers participated as *Kadiwa ng Pangulo* concessionaire during the DS 2023 *Lakbay Palay* of DA-PhilRice CES, selling RiceBIS products worth ₱14,395.50 in a day.
39. RiceBIS 2.0 communities in Region 2 partnered with the DA-F2C2 program to improve the quality of rice products.

Strategic Agenda 2: Ensuring accessibility to affordable, safe, and nutritious food that benefit all Filipinos

PAP 1.1: Conduct of regional rice R4D programs for Luzon, Visayas, and Mindanao

Safe and nutritious rice and rice-based food products

40. From a planting area of 47 ha in the 2023 DS, *Malusog* (Golden) rice (NSIC 2022 Rc 682GR2E) production has expanded to 157 ha in the 2023 wet cropping season in 10 regions across the country. The LGUs in the target areas bought back some of the produce for their respective nutrition programs. The increased area was due to the commercial production of 2nd district Representative Mark Cojuangco wherein the produce will be used for his *Ayuda Mark*, a rice relief program benefiting 120,000 families.

41. Milled *Malusog* rice (5kg/household) were distributed to 100 households per province in Quirino, Catanduanes, Antique, Samar, Agusan, and Midsayap. Results of a consumer sensory evaluation and acceptability survey showed that all respondents characterized *Malusog* rice as similar to ordinary white rice in terms of taste, cooking quality, and aroma. The color is appealing to children. All consumer-respondents are willing to buy *Malusog* rice at PhP25-50/kg, same as the rice they usually consume.
42. Starting 2024 DS, *Malusog* Rice will be integrated in the DA's Masagana Clustered Inbred Farms as one of the rice varieties to be cultivated and commercialized initially in seven provinces with high incidence of malnutrition, especially vitamin A deficiency. These provinces include Quirino, Catanduanes, Antique, Samar, Lanao del Norte, Agusan del Sur, and Maguindanao/South Cotabato. Concerned DA-PhilRice branch stations will coordinate with concerned DA-RFOs regarding the establishment of *Malusog* Rice Clustered Farms.

PAP 1.2: Location-specific rice R4D projects in support of the National Rice Program and in line with the National Agriculture and Fisheries R4D Agenda

Safe and nutritious rice and rice-based food products

43. In collaboration with the DA-Philippine Carabao Center-Central Luzon State University, buffalo milk-based yogurt products have been enriched with antioxidants and dietary fiber by co-fermentation of stabilized pigmented rice bran. Patent disclosure was available. Agreements for prototype/market testing and technology transfer of fermented rice bran (FRB) and FRB-based products were executed. Market readiness of the FRB yogurt prototype was tested with 400 consumers in Negros Occidental and Oriental.
44. Three rice cultivars – NSIC Rc 222, one red, and one black rice – were tested for their *in vivo* glycemic index (GI), in partnership with UP Diliman. Twelve rice varieties distributed by the RCEF Program were screened for their *in vitro* GI at DA-PhilRice. This is to provide consumers data and information on the GI of local rice that would guide them in managing and/or preventing weight gain and/or non-communicable diseases, particularly diabetes.
45. A patent for salt bread (*pandesal*) supplemented with FRB was filed at the IPOPhil. Protocol on the determination of GT of rice flour using rapid visco analyzer was validated using 50 rice lines (2022WS).

Technologies developed for coping with negative impacts of climate change

46. *Palayamanan* Plus components like rice-other crop production, Sorjan cropping system, integrated rice-duck-vegetable production system, mushroom production, and vertical hydroponic garden were maintained in DA-PhilRice CES.

The Sorjan cropping system generated a total gross margin of ₱77,823.00 with a net income of ₱88.85/m² from different components. More than half of the gross sale came from vegetables planted in raised beds, side bunds, and trellis (mustard, pak-choi, upland kangkong, tomato, finger pepper, eggplant, okra, bush sitao, hot chili, cucumber, bitter gourd, malunggay, bottle gourd, and papaya).

The rice+duck+vegetable component generated a gross sale of ₱80,637.00 from rice, culled ducks, duck eggs, and an assortment of vegetables including ridged gourd, bottle gourd, tomato, malunggay, finger pepper, eggplant, okra, and taro. To add value to harvested duck eggs, fresh eggs were priced according to size starting October. Two batches of eggs were incubated for *balut* and *penoy* production while another batch was incubated for hatching. High cost of feeds and low egg

yield, however, led to a negative gross margin of ₱1,537.00. Some of the adjustments to be done to address the concern are: supplementary feeding with kangkong, snails, old rice grains, and azolla at regular intervals to reduce dependence on commercial feeds, and rerouting of visitors when touring Palayamanan model farm so as to avoid stressing laying ducks from noise disturbance.

Since January 2023, the vertical hydroponic garden yielded 192.86 kg of several high-value vegetables (lettuce, sweet basil, celery, pechay, mustard, and pak-choi) and had a gross value of ₱48,209.00 from an area of 100m².

By the end of 2023, the mushroom laboratory maintains 64 bottles of pure cultures of the following mushrooms: white oyster (25), brown oyster (23), *Volvariella* (4), wood ear (3), Thai brown (2), and black pearl mushrooms (7). There are also spawn cultures of white oyster (49), brown oyster (41), wood ear (21), and black pearl mushrooms (27). In the mushroom growing house are 847 fruiting bags. To date, 155.68 kg fresh mushrooms have been harvested, generating a total sale of ₱25,587.20.

Technologies developed through the *Palayamanan* Plus were actively communicated to various audiences. The *Palayamanan* model farm was visited on 59 different occasions by groups and individuals both from the private and government sectors, as well as staff and students of various schools/universities since January 2023. *Palayamanan* technologies have also been featured in 17 radio program interviews across the country and in one Facebook live interview. *Palayamanan* Plus is also active on social media. The Facebook page DA-PhilRice *Palayamanan* Model Farm was reactivated this October, and has 405 likes and 507 followers. A brochure-type briefer of *Palayamanan* was also made for the benefit of *Palayamanan* visitors. Aside from brief descriptions about the *Palayamanan* technology and its components, the brochure also features a few QR codes wherein visitors can download free *Palayamanan*-related literature, access the DA-PhilRice 360 Virtual Tour, as well as provide feedback on their tour experience at *Palayamanan* via an online assessment form.

47. The improved *MakiSiG* (*Makina para sa pabago-bagong Klima at Sari-saring Gawain sa bukid*) can travel and maneuver in wet fields. In addition to being a typical power tiller, *MaKiSiG* can drill shallow tube wells and make canals to help farmers better respond to climate change-related challenges. An improved pilot test unit of the riding-type boat tiller with reverse mechanism, leveler attachment, and bigger wheel axle of 1.5" diameter (for longer operation) is available.

Strategic Agenda 3: Developing strong, modernized, and climate-resilient value chains through the delivery of quality services

PAP 1.2: Location-specific rice R4D projects in support of the National Rice Program and in line with the National Agriculture and Fisheries R4D Agenda

Machines and Mechanization

48. Field test results of a gear transmission power tiller with plastic drum seeder attachment showed acceptable performance. **Other crop establishment attachments such as improved 4-row rice transplanter and multi-purpose seeder attachment for dry field conditions were completed.** Improved design of the microtiller for wet and dry cultivation is available.
49. The riding-type paddy seeder prototype used pre-germinated seeds of inbred rice variety at 20 to 40 kg/ha seeding rate. It achieved an actual field capacity of 2.5 ha/day with notable field mobility and consistency of seeding quality without breakdown and malfunctioning parts.

50. Field testing and demonstration of the multicrop, reduced-till planter (MC RTP) were conducted in Balincaguig, San Felipe, Zambales at 0.25-ha farmer's field. Results showed that the 4-wheel tractor-drawn MC RTP could dry direct-seed 3.5 ha in a day, with a seeding rate of 54 kg palay seeds per ha. A letter of agreement was signed between DA-PhilRice and the Balincaguig Farmers Association for the pilot testing of the MC RTP until the end of 2024. Meanwhile, a farm machinery manufacturer based in Cauayan, Isabela (ACT Corp.) has formally signified its intention to be licensed to commercially manufacture the MC RTP. The first Fairness Opinion Board meeting has been conducted.
51. Field test run of rice stripper combine showed improved field mobility, maneuverability, and actual field capacity of 2.6 ha/day.
52. Drying performance test of the combined conduction, convection, and far-infrared radiation (CCFIR) dryer installed at a farmers' cooperative in Butuan City was conducted using 1,288 kg paddy rice with initial moisture content (MC) of 21%. Total drying time was 4.7 h and final grain MC was 14.2%. Moisture content reduction rate was 2.3%/h and grain throughput was 437 kg/h. Rice husk fuel consumption was 135 kg/h. Two workers of the cooperative were trained in the operation of the dryer. The fabrication, assembly, and site installation of another pilot test unit of the CCFIR dryer at a farmers' cooperative in San Jose, Occidental Mindoro have been completed. A local manufacturer in San Jose was trained to fabricate the dryer. All the main components, such as rice husk gasifier, rotary drum dryer, gran cooler, and far infrared dryer, have been tested and found functional.
53. The first prototype of the infrared heating system for stabilizing brown rice was tested for heat treatment of 81 1.5-kg NSIC Rc 160 brown rice samples. Results showed that the setting with highest grain throughput of 72.5 kg/h, maximum drying efficiency of 47.6%, and mean MC reduction rate of 2.1 percentage points per minute was found at an infrared heater temperature of 250°C; conveyor belt linear speed of 0.26 m/s; and distance between infrared heater and conveyor belt of 12.5 cm. A storage experiment was set up to evaluate the effects of infrared heat treatment on the physicochemical, sensory, and shelf-life characteristics of brown rice.
54. A mobile solar pump irrigation system was tested. The system is equipped with storage design for batteries providing continuous power during low sunlight and cloudy days, and power outlets for small electric pumps, and lighting.

Smarter Crop Management including Digital Agriculture

55. The Philippine Rice Information System (<https://prism.philrice.gov.ph/>) consistently provided accurate and timely information to our stakeholders. PRISM provided nationwide monthly updates on the rice production situation (rice area planted, rice harvested, & production estimates) to the DA-National Rice Program, DA-Regional Field Offices (DA-RFOs), and other partners.

PRiSM duly responded to 186 data requests: rice area (91), yield estimation (33), damage assessment (23), and planting dates (39). To reach out to the public, the PRiSM Facebook page (<https://www.facebook.com/PRiSMphilrice>) serves as a consistent source of updates regarding national rice-related information, including details on rice areas at risk due to flood or drought, as well as updates on area planted, yield and production. As of date, it has 3,000 followers and has 2,600 page likes.

PRISM-led capacity-building activities had 1,840 participants. These included trainings on field protocols (35), damage assessment (9), remote sensing (6), and ICT-related data management (10).

PRISM participated in one institutional training and four national workshops held in Butuan City (May 31 to June 3), Legazpi City (June 6 to 8), Iloilo (June 12 & 13), and Davao City (June 20 to 22).

56. A PalayCheck App operationalizes an integrated system that houses and links all existing and upcoming rice farming apps for a more optimized digitally-assisted rice farming. It provides farmers with easier access to comprehensive location-specific rice production information and guides them in every step of rice production toward higher yield and income. Launched to the public on October 23-24 in Los Baños, Laguna, it can now be downloaded at palaycheckapp.philrice.gov.ph. As of 29 December 2023, it has 482 users.
57. New functions and enhancements improved user experience in accessing and navigating the web-based RiceLytics dashboard (www.philrice.gov.ph/ricelytics). The maps were migrated to a better functioning interactive map library. As of 23 October 2023, it had 145,455 page views from 31,648 unique users since January 1, 2023. Datasets from PSA and DA-FPA were updated to complement the story of the current status of the rice industry.
58. From January to June 2023, 18 soil series in Mindanao were validated in the field, and uploaded to the DA-PhilRice Soil Information System database. Taxonomic classification of 67 soil series including horizon designation from Agusan del Norte, Agusan del Sur, Bukidnon, Davao, Ifugao, Laguna, and Quezon were conducted.
59. The use of the modules and apps of the Rice Seed Information System (RSIS) is mandatory starting 2023 WS. Branch stations were able to input their 2023 1st and 2nd semester production plans, while CES, CMU, Isabela, and Midsayap have partial plans for the 2024 1st semester cropping. In 2023, the system documented 758.64 ha planted area from all stations (367.35 ha 1st sem; 391.30 ha 2nd sem).
60. From January to December 2023, 65,966 farmers were added to the Rice Crop Manager Advisory Service (RCMAS) (<https://rcm.da.gov.ph>) database with 79,277.46 ha of verified farms. The dashboard has been updated and integrated with Google Analytics. RCMAS has generated 276,805 recommendations; responded to 2,687 queries from the website's Contact Us page; and sent 840,569 SMS advisories.

Strategic Agenda 4: Institutionalizing policy reforms and strengthening institutions to enhance efficiency and accelerate the modernization of the sector

PAP 1.1: Conduct of regional rice R4D programs for Luzon, Visayas, and Mindanao

Socioeconomics and Policy Research and Advocacy

61. Updated rice-related statistics, policy briefs, position papers, and policy memos on emerging issues were provided to DA and other research institutions. Requested position papers, policy notes, and infographics were crafted and submitted to DA for policy and technical support.

Some 100 statistical tables from the PSA and other local (FNRI, FPA, and NIA) and international agencies (FAO and World Bank) are being monitored, maintained, and updated regularly with the latest data available in rice production, area, and yield as well as imports and exports, prices, and supply and demand. These statistics are made available through the *PalayStat* information system (<https://palaystat.philrice.gov.ph/>). *PalayStat* has been viewed 23,714 times and accessed by 4,517 unique users from January to October 23, 2023. On average, a session lasts 2 minutes and 27 seconds.

62. The policy paper on *Adoption and Performance of Direct-seeded Rice (DSR) Technology in the Philippines* has been published in the Philippine Journal of Science. Policy briefs (Rice Science for Decision-makers, RS4DM) were published: (a) *Enabling the shift from transplanted to direct-seeded rice system in the Philippines* (published and disseminated); and (b) *What does our balanced fertilization study say?*
63. Requested position papers, policy notes, and infographics were crafted and submitted to DA for policy and technical support: (a) proposed agricultural and credit governance reform, with collated status of/updates on DA rice-specific and other relevant programs; (b) potential project for public-private partnership with Cargill, in preparation for the DA's meeting with the US-ASEAN Business Council; (c) rice supply and utilization projection for 2023-2028 and sources of 2022 production growth/decline; (d) inputs on the prices of agricultural inputs for the State of the Nation Address (SONA); and (e) Philippine Ecosystem and Natural Capital Accounting System (PENCAS)-related bills.
64. Policy/research papers have been submitted to journals for publication: (a) *What happened to DA-PhilRice's laboy tiller?*; (b) *What are the aspirations of the Filipino rice farmers?*; (c) *Affordances in crop diversification: Three cases from the Philippines*; (d) *Identifying ways to strengthen Filipino family farmers*; and (e) *Exploring mental health issues amongst rice farmers in relation to climate change impacts*.
65. Results of an online survey with key officials from relevant agencies and organizations, and stakeholders identified priority rice-related issues and topics for generation of science-based information and policy recommendations.
66. Policy brokering was conducted in five provinces (Aurora, Zambales, Pampanga, Iloilo, and Capiz) and three municipalities (Talavera, Science City of Muñoz, and Bongabon, in Nueva Ecija). Policy recommendations contained in the issues of the RS4DM were presented to local executives for possible adoption into a local ordinance.
67. The results and some policy recommendations from the crop diversification study were presented to the Municipal Agriculturist, Sangguniang Bayan members, and other local executives in Moncada, Tarlac; Talavera, Nueva Ecija; and Bacarra, Ilocos Norte.

PAP 2.1: General Administration and Support Services / Support to Operations

Human Resources

68. Twenty-nine staffers were appointed to plantilla positions; 234 permanent employees were sent to various trainings conducted by different accredited institutes. Five permanent staff availed of the Institute's study grant. Thirteen R&D personnel are DOST/CSC career scientists (9 Scientist I, 2 Scientist II, and 2 Scientist III), four of whom are women. More than 130 personnel enjoy Magna Carta benefits. Fifty-three in-house trainings, workshops, and knowledge sharing and learning activities (31 face-to-face, 22 online) were conducted.

Physical Resources

69. Completed were 4 infrastructure (construction) and 27 repair and maintenance projects amounting to about ₱47.3 million. The most significant of which are the construction of seed warehouses (DA-PhilRice Midsayap-USM seed farm and DA-PhilRice Batac), and head house and screenhouse (DA-PhilRice CES).

70. A groundbreaking ceremony for the *Site Development and Construction of the Seed Processing Facility (₱27.92 million) and Seed Warehouse with Cold Storage (₱20.44 million)* took place on 26 September 2023. This was funded by the Korea Rural Community Corporation through the Global Agricultural Policy Institute and Nature E&T Inc. Construction is ongoing.

Subsidy Utilization

71. Obligation rate is at 98% as of December 2023. The Institute implemented austerity measures to save government funds in response to inflation.

Awards and Recognition

72. DA-PhilRice received external accolades: 11 institutional and 6 individual awards.
73. The Bureau of Soils and Water Management recognized the Agronomy, Soils, and Plant Physiology Laboratory as a Laboratory of Excellence for achieving 100% acceptable data on soil fertility parameters during the Philippine National Soil Laboratory Network (Phil NASOLAN) Proficiency Testing Scheme Cycle 2022. DA-PhilRice participated and provided inputs in the crafting of the five-year National Strategic Development Plan for DA Laboratories.

Partnerships

74. We have continuing close collaborations with other rice industry players and stakeholders such as other government and non-government agencies, state universities and colleges, and other private academic institutions. About 200 agreements were forged and executed in 2023.
75. A collaborative undertaking has recently been established with the Manila Water Foundation in the use of the DA-PhilRice-developed continuous-type rich hull (CtRH) carbonizer to help solve the water hyacinth pollution problem in Laguna Lake. The CtRH carbonizer can successfully carbonize chopped and dried water hyacinth. Hence, the MWF plans to create livelihoods in the affected fishing communities through the production of charcoal briquettes from the carbonized water hyacinth.

Corporate Social Responsibility

76. An outreach activity was conducted for around 80 underweight children aged 5-11 years old at Brgy. Curva, Science City of Muñoz, Nueva Ecija. Conducted in close coordination with the LGU and the Barangay Council, the activity served *Malusog* Rice-caldo to the beneficiaries, provided them with food packs and vegetable seeds and seedlings, and promoted DA-PhilRice nutrition-related technologies and healthy consumption.