2024 ANNUAL REPORT

Innovating Research for Resilient Agri-Fisheries

about the cover

The cover explores a layered design that embodies the bureau's diverse roles and functions, reflecting its extensive and innovative approach to research for development. Each layer shows a core function that represents DA-BAR while the logo is at center and placed at the innermost layer, symbolizing its wholeness. It represents a cohesive environment where technology, research integration, farmers and fisherfolk, innovation, and sustainability work in harmony.

2024 DA-BAR Annual Report

Innovating Research for Resilient Agri-Fisheries

DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL RESEARCH

2024 DA-BAR Annual Report
Innovating Research for Resilient Agri-Fisheries

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A&F	Agriculture and fisheries
ACEF	Agricultural Competitiveness Enhancement Fund
ACIAR	Australian Centre for International Agricultural Research
AFACI	Asian Food and Agriculture Cooperation Initiative
AFRREDN	Agriculture and Fisheries Resources, Research and Extension for Development Network
AI	Artificial intelligence
ARIA	Advocates of Research and Innovation in Agriculture
ASEAN	Association of Southeast Asian Nations
ASF	African swine fever
BFAR	Bureau of Fisheries and Aquatic Resources
BI	Business intelligence
BIOTECH	National Institute of Molecular Biology and Biotechnology
BPSU	Bataan Peninsula State University
BSFLM	Black soldier fly larvae meal
CABI	Center for Agriculture and Bioscience International
CADRE	Consortium for Agricultural Development, Research, and Extension in Southeast Asia
CALABARZON	Cavite, Laguna, Batangas, Rizal, Quezon
CavSU	Cavite State University
CGIAR	Consortium of International Agricultural Research Centers
CGUARD	Corn Germplasm Utilization through Advanced Research and Development
CLSU	Central Luzon State University
CNSC	Camarines Norte State College
CRAFT	Climate-Resilient Agriculture and Fisheries Technologies
CSU	Cagayan State University
D4AgPH	Digital Agriculture for the Philippines
DA	Department of Agriculture
DATS	Digital Agriculture Tools and Services
DNA	Deoxyribonucleic acid
DOST	Department of Science and Technology
DSP	Degree Scholarship Program
FAW	Fall armyworm
FY	Fiscal year
GAD	Gender and development
HHCO	The Helping Hands Community Organization
HRD	Human Resource Development
HRMP	Human Resource Management Practitioners
HVCDP	High Value Crops Development Program
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICTPH	International Training Center on Pig Husbandry
IEC	Information, education, and communication
iFARM	Integrated Farm Attribution for Risk and Resource Monitoring
IFSU	Ifugao State University
IP	Intellectual property
IRRI	International Rice Research Institute

ISU	Isabela State University
LGU	Local government unit
MACOFED	Macabatug Cooperative Federation of Davao City
MarSU	Marinduque State University
MERF	Marine Environment and Resources Foundation, Inc.
MS	Master of Science
NaRDSAF	National Research and Development System in Agriculture and Fisheries
NAST	National Academy of Science and Technology
NFRDI	National Fisheries Research and Development Institute
NFTC	National Fisheries Technology Center
NOAP	National Organic Agriculture Program
NPK	Nitrogen, phosphorus, potassium
NRS	National Research Symposium
NVSU	Nueva Vizcaya State University
PCC	Philippine Carabao Center
PCW	Philippine Commission on Women
PhD	Doctor of Philosophy
PNS	Philippine National Standards
POTs	Packages of technology
PRMSU	President Ramon Magsaysay State University
PROSPECT	Participatory Research Outreach Services Towards R4D Project Execution and Community Transformation
PSAU	Pampanga State Agricultural University
PVAC	Pangkaunlaran Venture Agriculture Cooperative
R&D	Research and development
R4DE	Research for Development and Extension
R4D	Research for development
RAC	Return above cost
RFO	Regional field office
ROI	Return on investment
S&T	Science and technology
SCALE UP	Sustainable Community-based Action R4DE for Livelihood Enhancement, Upliftment, and Prosperity
SCA	Sustainable Challenge Award
SCEC	Scientific Career Evaluation Committee
SEARCA	Southeast Asian Regional Center for Graduate Study and Research in Agriculture
SKSU	Sultan Kudarat State University
SUCs	State universities and colleges
TDSP	Thesis and Dissertation Support Program
TRL	Technology readiness level
UPLBFI	University of the Philippines Los Baños Foundation, Inc.
UP	University of the Philippines
WVC	World Vegetable Center

Climate volatility, economic uncertainty, and rising global food insecurity define our times. Against this backdrop, agriculture and fisheries research for development remains vital.

The Department of Agriculture-Bureau of Agricultural Research operates within this reality. In 2024, we have worked to embed science and innovation deeper into the fabric of our sector. This report documents our efforts to strengthen R4D systems, connect knowledge with practice, and ensure that our innovations shape policy, guide investment decisions, and reach our beneficiaries.

The path forward requires us to think beyond individual projects toward integrated systems. R4D initiatives must drive programming decisions, while technologies must prove their worth in real market conditions. Capacity-building must continue to empower and strengthen institutions. This calls for scientific excellence paired with strategic thinking and sustained multistakeholder collaborations.

We are grateful to our partners, both from national and regional agencies, research institutions, academe, and international organizations. Their engagement validates the principle that agricultural transformation requires collective effort and shared accountability.

Above all, we remain accountable to the farmers and fisherfolk whose lives and livelihoods depend on our work. Their daily challenges must continue to inform our R4D priorities. Their perseverance inspires our commitment, and the bureau shall ensure that prosperity remains its ultimate measure of success.

This Annual Report serves as both documentation and declaration. A record of what we have accomplished and an affirmation of our resolve moving forward. Our mandate is clear: research for development must serve the public interest, and innovations must continue to increase, and reach those whom we serve.

Junel B. Soriano, PhD

FY 2024 financial overview

101 R4D
projects

PhP 936,821,442.27
total amount received from 2024 General Appropriations Act in support to the bureau's operation, and programs, activities, and projects

personnel services + overhead
PhP 174, 177, 293.75

programs
PhP 762,644,148.52

obligations
PhP 905,424,607.47
incurred and commited to be paid by the bureau from the total fund allotment

personnel services + overhead
PhP 147,403,527.06

programs
PhP 758, 021, 080.41

disbursed
PhP 879,572,682.88
released by the bureau as payment for obligated fund allotment

personnel services + overhead
PhP 139,509,010.31

programs
PhP 740,063,672.57

fund distribution

alloted obligated disbursed

National Rice R4D Program
Includes basic and applied researches, related IEC materials and activities

PhP 214.456 M
12 projects (11.9%)
- PhP 214,487,000.00
- PhP 214,455,512.00
- PhP 211,755,512.00

PhP 110.935 M
10 projects (9.9%)
- PhP 110,935,000.00
- PhP 110,935,000.00
- PhP 110,191,757.76

National Corn R4D Program
Includes corn, cassava, and sorghum basic and applied researches

AFMA Various R4D Program
Includes alloted funds under DA-BAR's AFMA funds for RFDG, livestock and poultry, fisheries and aquaculture, climate change, R4D policy esearches, and scholarship grant

PhP 239.124 M
36 projects (35.6%)
- PhP 242,485,000.00
- PhP 239,123,518.44
- PhP 233,821,990.15

PhP 70.018 M
15 projects (14.9%)
- PhP 70,018,000.00
- PhP 70,018,000.00
- PhP 70,018,000.00

High Value Crops R4D Program
Includes basic and applied researches and high value crops-based researches

Livestock R4D Program
Includes applied research and support to technology commercialization projects

PhP 49.914 M
5 projects (4.9%)
- PhP 50,000,000.00
- PhP 49,913,544.31
- PhP 49,913,544.31

PhP 50.060 M
11 projects (10.9%)
- PhP 51,217,000.00
- PhP 50,060,027.47
- PhP 49,796,364.18

National Organic Agriculture R4D Program
Includes basic and applied researches, organic agriculture-based researches, research facilities and equipment, and related IEC materials

Biotechnology R4D Program
Includes alloted funds under DA-BAR's AFMA funds for basic researches on biotechnology

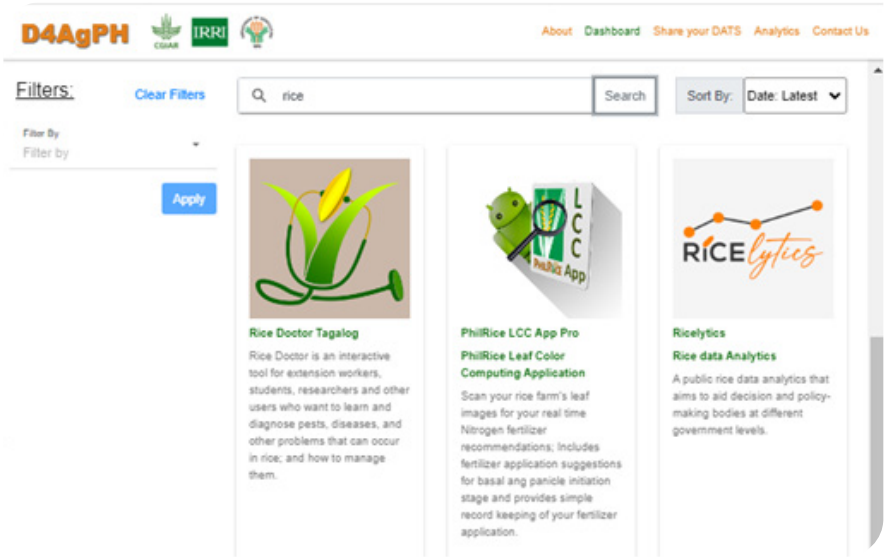
PhP 111.259 M
12 projects (11.9%)
- PhP 135,000,000.00
- PhP 111,258,746.85
- PhP 92,276,712.67

Geared toward enhancing the resiliency and competitiveness of Filipino rice farmers while ensuring the country's access to safe and nutritious rice, the DA-National Rice Program is among the banner programs of the DA.

Aligned with the Masagana Rice Industry Development Program four core strategies: MAtatag (climate change adaptation or resiliency), SAma-sama (clustering and consolidation of farms), GAnado (motivated farmers in the rice value chain), and NApapanahon (digital transformation to improve farming practices and program implementation), the NRP prioritizes the development and introduction of improved and state-of-the-art farming technologies and innovations on rice and rice-based farming systems.

The DA-BAR leads the strategic management and coordination of various rice R4D programs, activities, and projects. Implementing these R4D initiatives are DA national and regional offices, state universities and colleges, and other research institutions.

Digital Agriculture for the Philippines (D4AgPH)



The D4AgPH project promotes evidence-based policymaking and local extension efficiency through a consolidated digital platform. From the 204 Digital Agriculture Tools and Services (DATS) identified from various sources, 67 were validated and found actively used, primarily in crop production, especially rice and marketing. Most tools serve as advisory platforms supporting input and production decisions.

The D4AgPH database features analytics, search functions, user reviews, and data entry options, serving as a national reference for digitalization. It empowers local government units (LGUs), farmers, and policymakers to access and apply relevant tools, strengthening agricultural and fisheries productivity and digital integration across the value chain.

In the Philippines, corn or maize (*Zea mays*) is next to rice as the most important crop, hence the creation of its own banner program under DA. White corn is grown for food, while yellow corn is mainly used for animal feed. Likewise, in view of their importance in the production of food and animal feeds, cassava, soybean, and sorghum became under the umbrella of the National Corn Program.

The program aims to transform farmers cultivating corn, cassava, soybean, and sorghum to productive, competitive, resilient, and profitable agripreneurs by providing science-based interventions and support services.

The DA-BAR is continuously coordinating and providing support to partner R4D institutions and stakeholders in generating appropriate technologies on varietal development and improvement, soil and nutrient management, integrated pest management, crop-based farming systems, mechanization, digitalization, and product and market development to ensure a productive and profitable industry.

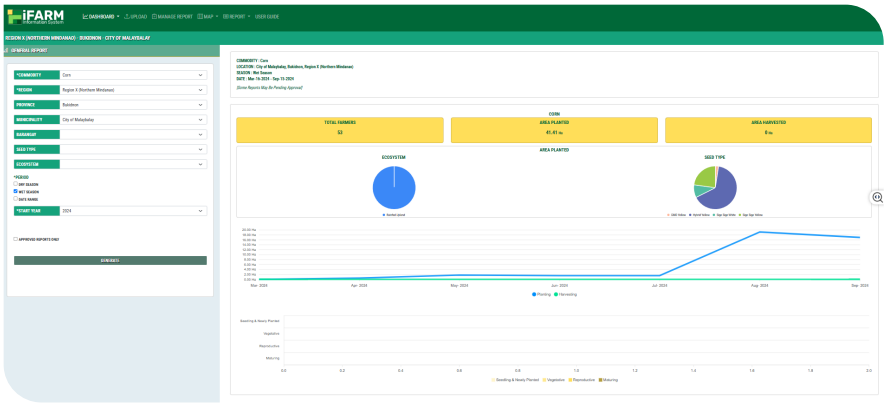
Integrated Pest Management for Fall Armyworm (FAW)

Deployed in Ilagan City, Isabela, this strategy combines application of biological controls like earwigs (*E. annual/ annulipes*), parasitic wasps (*Trichogramma chilonis*), and the fungus *Metarhizium rileyi* with targeted insecticide use. Fifty farmers implemented the technology in 2024 with trials recording a 56% reduction in FAW damage for yellow corn and 31% for white corn. Farmers follow a phased approach, releasing 10,000 earwigs per hectare early, followed by fungal sprays and monitored insecticide applications. Adding to this arsenal, *Metarhizium rileyi*, a lethal fungus for FAW larvae achieved 70–100% mortality in lab tests, offering a sustainable alternative to chemicals.


PHOTOS: DA-RCPC2

Integrated Farm Attribution for Risk and Resource Monitoring (iFARM)

The iFARM system is a digital platform developed to support real-time monitoring of corn production activities, pest outbreaks, and weather-related losses. The system is now operational in Cagayan Valley, MIMAROPA, Bicol Region, and Western Visayas, fully digitizing crop reporting. This system tracks planting, pests, and losses in real time, enabling swift government response. Plans to expand iFARM nationwide by 2026 are underway, promising streamlined aid delivery amid climate uncertainties.



Biofertilizers for Enhanced Nutrient Uptake

Two registered biofertilizer products were introduced to improve soil nutrient availability and reduce chemical input costs. K-SolB, a potassium-enhancing microbial inoculant, boosted yields by 42% in trials, translating to an income spike of PhP 15,954/ha. Similarly, Maizinc, a zinc solubilizer paired with half-dose chemical fertilizers, raised yields by 10–20% and saved farmers PhP 5,700/ha. Both products, registered with the the DA-Fertilizer and Pesticide Authority, require just five packs per hectare and are available at DA-Biotech and can be purchased through this link: tinyurl.com/yk8zpc7r.

Nixtamalization Process for Corn Food Products

To enhance the nutritional value and marketability of corn for human consumption, DA-BAR supported the development and promotion of nixtamalization, a traditional alkaline cooking process. The method improves calcium bioavailability, product shelf life, and flavor profiles of corn-based foods.

Applications include nixtamalized loaf bread and fermented corn beverages. These product innovations aim to revive consumer interest in corn as a staple while addressing food security and postharvest utilization challenges.

CGUARD White Corn Varieties

As an output of DA-BAR under the CGUARD program, the DA-Bureau of Plant Industry released two white corn varieties designed for climate-resilient performance and regional suitability. Deko 2, an early-maturing variety, yielded 4.49 tons/ha in Region 2 trials. Munaw, selected for drought tolerance, produced 4.13 tons/ha in upland areas. These varieties are now available in Cagayan Valley and are now being distributed by the region upon requests, supporting stable production in marginal environments and providing farmers with reliable alternatives amid changing weather patterns and soil conditions.

The varieties will undergo sensory evaluation and will be introduced to neighboring municipalities through the help of the Municipal Agricultural Office of Cagayan Valley as part of its roll out.

HVCDP is one of the banner programs of the DA created through RA 7900 or the High Value Crops Development Act of 1995. It aims to deliver appropriate services, promote access to local and international markets, and ensure proactive management actions on the demand and supply situation. The program is mandated to contribute to the attainment of food self-sufficiency, economic growth, and enhancement of consumer's health and welfare.

Through the support and guidance of the HVCDP, DA-BAR leads the strategic management, coordination, and development of breakthroughs in high value crops research for development programs and activities. The bureau coordinates with DA national and regional offices, state universities and colleges, and other research institutions in developing and promoting packages of technologies for various priority high value crop commodities.

Queen Pineapple-based Farming System

Double-row planting (100 cm x 50 cm x 30 cm) and intercropping with peanut, corn, taro have been introduced by DA-Bicol Region in Basud, Labo, and San Lorenzo Ruiz, Camarines Norte to boost queen pineapple production and farmer income. The results show an overall ROI of 74%, driven by profits from queen pineapple and intercrops. Queen pineapple ROI ranged from 83-111%, while peanut, corn, and taro ROIs were 28%, 67%, and 82%, respectively. Farmers reported significant improvements, citing increased yields and income due to the new technologies and improved practices like proper fertilizer application based on soil analysis results. Clustering in the planting schedules was also introduced to stabilize market prices. The project will be transferred to LGUs, with established linkages to cooperatives and trading centers to ensure market access for farmers' produce.

Cardaba Banana Flour

Cardaba banana flour, a value-added product for banana growers, has been developed by the DA-Davao Region from rejected harvests. It is a gluten-free, high-fiber, and low-glycemic index alternative to wheat flour. Feasibility studies project a 123.3% return on investment, based on a PhP 250 per kilogram suggested retail price and a PhP 188.04 production cost. MACOFED, a 2,251-member federation of 15 farmers' associations, will adopt the technology, receiving training and equipment for all stages of production and marketing. This innovation is expected to increase farmer incomes and meet growing consumer demand for nutritious flour alternatives.

Veggie Chips

Veggie Chips, a healthier snack alternative made from processed vegetables—six variants include carrot, squash, tomato, *malunggay*, *ampalaya,* and *okra*—were refined by DA-Bicol Region to reduce spoilage and create economic opportunity. Available in 50g (PhP 35), 100g (PhP 65), and 250g (PhP 100) packs, market assessment confirmed high potential, with significant estimated weekly demand from outlets (approximately 96.25 kg). Currently produced by Jireh Food Products targeting markets outside Camarines Norte, the technology will now be adopted by the Helping Hands Community Organization (HHCO) to supply the local Camarines Norte market. They received comprehensive training and processing equipment. This initiative provides HHCO members with new business opportunities and increases local vegetable demand, boosting farmer incomes.

Forage Legume and Pellet Feed Technology Transfer

The Central Luzon State University (CLSU) has successfully transferred the technology in forage legume and forage-based pelleted feed production for goats in Central Luzon, addressing the perennial problem in feed scarcity during dry season and escalating price of concentrate feeds. This initiative promotes the use of locally-available and high-protein forage legumes like *Leucaena leucocephala* and *Indigofera zollingeriana*, which are processed into nutrient-rich and cost-efficient pellet feeds.

It was implemented across five provinces: Bulacan, Bataan, Nueva Ecija, Tarlac, and Aurora. Each cooperator was capacitated and received processing equipment for the production of the said feed product. During the first harvest, a single site yielded 1.2 tons of high-quality leaf meal, contributing toward the project's overall goal of producing 15 tons of forage-based pelletized feed. This sustainable, locally driven approach not only enhances feed security but also strengthens the region's small ruminant sector through adoption of innovative feed product.

The following cooperatives adopted the technology:

1. Bayabas Farmers Association
2. Balsik Agrarian Reform Beneficiaries Association
3. Padre Pio's Best Practice in Sustainability, Inc.
4. Fabros Integrated Training Assessment Center
5. Titan Bio-organic Corporation
6. Mapalad Integrated Farm
7. KD Integrated Farm

Under the DA-National Livestock Program, the DA-BAR prioritized research initiatives that cover areas such as animal disease management and diagnostics; animal nutrition; animal breeding, selection and genetics; animal production; and product development and by-product utilization.

Cattle and Goat Semen Cryopreservation

The DA-Philippine Carabao Center (PCC) has optimized cattle and goat semen cryopreservation protocols to enhance animal genetic resource conservation. Addressing challenges in post-thaw survival and cryobank diversity, the refined semen extender combined with programmable freezing significantly improves sperm viability. This offers a cost-effective, locally produced alternative, estimated at a minimum of PhP 700 per 0.5mL straw compared to PhP 4,500 per 0.25mL for imported semen, directly benefiting Filipino farmers and national breeding programs. This optimized protocol ensures superior sperm quality preservation; manual freezing provides a practical alternative when needed.

Swine Semen Cryopreservation Optimization

To strengthen swine genetic conservation amidst threats like the African swine fever (ASF), the DA-PCC has optimized cryopreservation protocols for boar semen. Acknowledging its freezing sensitivity and the minimal national cryobank inventory, the project refined techniques through in-depth sperm analysis, biomarker evaluation (HSP90, FN1), and thorough testing of semen extenders and freezing methods. The resulting recommendation includes an optimized semen extender for transport, a 12-hour holding period prior to downstream analysis, and using programmable freezing, with manual freezing as an alternative. This improved protocol enhances post-thaw semen quality, secures valuable genetic resources, aids industry recovery, and provides Filipino farmers with a cost-effective, locally produced semen option, estimated at a minimum of PhP 352 per straw.

PHOTOS: ALFRED COSTALES/DA-PCC

The Philippines is one of the top fish producing countries in the world thus highlighting the important role of the aquaculture and fisheries sector in ensuring food security and reducing poverty of the population. It plays a significant contribution to the economy as source of food, livelihood, and employment.

The Aquaculture and Fisheries R4D program prioritizes demand-driven and outcome-based R4D initiatives that seek to develop knowledge, tools, models, or other products that bring about needed changes and improvements to the fisheries sector.

Consistent to and supportive of national priorities and programs, the program likewise considers cross-cutting concerns, such as, climate change; gender and development; biotechnology; organic aquaculture; inclusivity; infrastructure; and mechanization.

Co-culture and Multitrophic Systems for Sandfish Mariculture

MERF's initiative on co-culture systems for sandfish *(Holothuria scabra)* focuses on sustainable mariculture models suitable for coastal communities. Trials were conducted across multiple sites to assess growth performance when co-cultured with sea urchins, siganids, and bivalves.

Findings confirmed that sandfish can be cultured without adverse effects in integrated multitrophic systems. These models offer environmental benefits and provide supplemental income to small-scale fisherfolk. Site-specific variables such as sediment grain size, chlorophyll content, and organic matter influenced performance, highlighting the need for localized system designs. Community-managed operations demonstrated the feasibility of these systems as alternative livelihoods.

Circular HDPE Cage System

To enhance seaweed productivity in deeper waters, the Bureau of Fisheries and Aquatic Resources (BFAR) Region 9 pilot-tested a circular high-density polyethylene cage farming system in Zamboanga City and Zamboanga Sibugay. The system features a 20-meter diameter double-floater design with durable mooring, suitable for severe weather and strong currents.

Results showed that, with proper management, each cage could yield 8,800 kg of fresh seaweed and 1,257 kg of dried seaweed per cycle, with up to five cropping cycles annually. Despite challenges such as grazing and ice-ice disease, the system proved technically viable. Economic analysis reported a 55.27% return on investment and demonstrated its potential to increase fisherfolk income from offshore seaweed farming.

Pickled Sea Purslane Standardization

The DA-NFRDI implemented a market assessment study toward product refinement for pickled sea purslane (Atcharang Dampalit) in Sasmuan, Pampanga. This initiative aimed to enhance product quality, ensure compliance with standards, and boost marketability. Dampalit, known for being rich in nutrients and bioactive compounds, is traditionally pickled but needs market-standard packaging and labeling.

Product enhancement efforts focused on meeting market requirements. Through comprehensive surveys and consumer tests, the product showed high market acceptability concerning its sensory attributes. Additionally, physico-chemical and microbiological analyses confirmed its compliance with quality and safety standards. Consumer tests also highlighted strong acceptance at a price range of PhP 80-120 for a 220g bottle in both Pampanga and Zambales. These results strongly indicate the significant market potential for Atcharang Dampalit as a value-added product that could augment fisherfolks' income.

Automation System for Intensive Tilapia Fry Production

An automation-based hatchery system for *Oreochromis niloticus* was developed by NFRDI and BFAR-NFTC to improve fry production efficiency. The system integrates water quality sensors, IoT-enabled monitoring, and automated controls for temperature, aeration, and water exchange. A solar-powered floating wetland bio-reactor enhances water quality while minimizing energy costs.

The system also features an improved artificial incubator with integrated heating to accelerate egg development. Phase 2 implementation recorded a 42% production increase using the improved Modified Intensive Tilapia Hatchery compared to the original design. Cost and return analysis affirmed its potential to provide year-round supply of high-quality fingerlings with improved profitability.

NOAP is one of the banner programs of the DA created through Republic Act No. 10068 or the Organic Agriculture Act of 2010. The program envisions the organic agriculture sector to contribute to the country's overall agricultural growth and development, in terms of sustainability, competitiveness, and food security.

In accordance with the NOAP, the DA-BAR leads the strategic management, coordination, and development of breakthroughs in organic agriculture R4D programs and activities. DA-BAR coordinates with DA national and regional offices, state universities and colleges, and other research institutions in developing and promoting packages of technologies for organic agriculture.

Antibiotic-Free Chicken Manure for Organic Fertilizer Production

CLSU developed a composting protocol to eliminate antibiotic residues, specifically tylosin and oxytetracycline—using *Aspergillus niger*. Laboratory trials determined that rice bran and mungbean are effective substrates for cultivating *A. niger* at 25°C. An optimized inoculation ratio of 4:1:0.5 (based on NPK, organic matter, carbon-nitrogen ratio, and moisture content) was established.

The resulting compost complies with PNS for organic fertilizers. A mechanized biomass shredder and mixer was also introduced to improve operational efficiency and field adoption. The technology provides organic producers with a sustainable and compliant nutrient source, supporting the expansion of organic crop production systems.

Black Soldier Fly Larvae Meal as Poultry Feed Supplement

Two projects implemented by CLSU and PSAU evaluated the potential of BSFLM as an alternative feed for organic poultry systems. At CLSU, 180 Darag chickens fed with BSFLM exhibited growth and meat quality comparable to those given commercial feed, with improved income-over-feed cost ratios.

PSAU formulated a natural pelletized feed using BSF larvae mixed with napier grass, sweet potato, sorghum, mulberry, madre de agua, azolla, and coconut residue. One formulation showed faster weight gain after eight weeks and comparable growth to commercial feeds, while yielding a higher return on investment.

The Climate Change R4D Program of the DA-BAR covers specific measures that address challenges and threats posed by the changing weather patterns affecting the livelihood of rural communities and the country's food security. The R4D program is in support to Republic Act 9729 or the Climate Change Act of 2009 which mandates the mainstreaming of climate change in policy formulation. It follows the policy thrust of the DA Climate Change Program which is anchored on two pillars: mitigation and adaptation, with adaptation as the anchor strategy and mitigation measures as a function of adaptation.

CRAFT R4D Medium Term Plan (2024-2028)

The Climate-Resilient Agriculture and Fisheries Technologies through Transformative R4D (CRAFT R4D) Medium Term Plan (2024–2028) was developed through multi-stakeholder consultations and launched in June 2024 to guide national climate-resilient research priorities. The plan emphasizes science-based technologies, enabling policies, and institutional capacity-building to strengthen climate adaptation across the agri-fisheries sector.

The plan was developed with technical assistance from the Asian Development Bank under TA 10009 PHI, in partnership with NIRAS, Agence Française de Développement, and CIRAD. It integrates insights from researchers, policymakers, industry representatives, and local and international collaborators.

In 2024, over 70 projects aligned with the CRAFT R4D framework were implemented, focusing on validation, scaling, and digitalization of climate-adaptive innovations to ensure long-term productivity and sustainability.

The DA-Biotechnology Program aims to help create an enabling environment for the development and better use of agricultural biotechnology as one of the technology options for food security, sector competitiveness, and resilience to climate change.

Pursuant to the Agriculture and Fisheries Modernization Act of 1997 (RA 8435), the Program was created to help the agriculture sector move from resource-based to technology-based through development of a wide range of biotechnology techniques. The Program also aligns with the national policy statement on modern biotechnology emphasizing on the safe and responsible use of modern biotechnology and its products.

Advanced Breeding and Farming Technologies for Aquaculture

The NFRDI implemented Phase II of the program on breeding and farming technologies for commercially important freshwater fish. Hatchery facilities in Iloilo, Guimaras, and Negros Occidental were rehabilitated and upgraded to support increased aquaculture productivity.

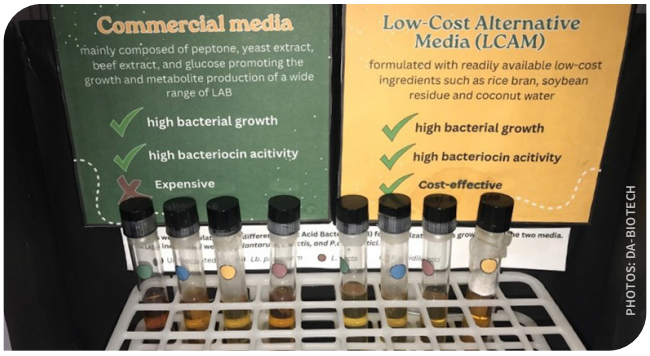
A total of 785,325 fry and 606,950 fingerlings, including mudfish, catfish, and tilapia were produced and distributed to fish farmers. Technical training was also conducted for local producers and private hatchery operators on improved breeding and grow-out systems. The intervention contributed to a more stable supply of quality seed stocks in Western Visayas and supported the revitalization of the region's freshwater aquaculture industry.


PHOTOS: DA-BIOTECH

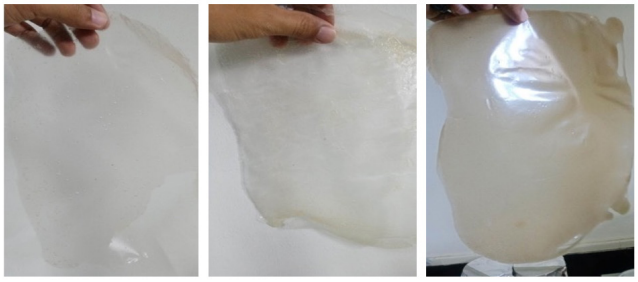
Biodegradable and Antimicrobial Food Packaging

BIOTECH–UPLB developed biodegradable and antimicrobial food packaging to improve food safety while reducing plastic waste. The project produced packaging materials using starch derived from giant swamp taro, intoxicating yam, and buri palm, and formulated a low-cost culture medium from agro-industrial waste to produce bacteriocins.

The resulting packaging materials demonstrated potential for shelf-life extension and microbial protection in minimally processed foods. This innovation offers a sustainable alternative to conventional packaging and responds to the dual challenges of food safety and environmental degradation. The initiative highlights the role of applied research in advancing eco-friendly packaging systems in the food industry.



Fabricated bioplastic sheets using the extracted starch from three different obscure plants



Giant swamp taro *(Cyrtosperma merkusii)*

Intoxicating yam *(Dioscorea hispida)*

Buri palm *(Corypha utan)*

Nanobiosensor for On-Site Detection of Salbutamol in Pork

The UPLBFI in collaboration with the Institute of Animal Science and the Institute of Crop Science, developed a nanobiosensor to detect salbutamol, a banned feed additive in pig carcass, entrails, and feed.

The sensor uses magnetic nanoparticles tagged with antibodies and gold particles to indicate the presence of salbutamol through a visible color change. The device detects concentrations as low as 0.1 parts per billion. A field-ready kit capable of 50 tests was also developed, priced at PhP 75,296.25. The technology supports on-site meat safety testing and offers a cost-effective tool for food monitoring systems.

Fish Protein Hydrolysates from Tuna Viscera

The Institute of Fish Processing Technology, College of Fisheries and Ocean Sciences, UP Visayas, developed fish protein hydrolysates from tuna viscera as part of a sustainable food use initiative. Using enzyme and microbial hydrolysis, the project applied Response Surface Methodology to optimize yield and protein content.

The scale-up phase evaluated bioreactor performance using commercial and fabricated units, and conducted assessments on process variability, risk management, and product improvements. The study demonstrates potential for waste valorization in the fish processing industry, contributing to circular food systems and the development of protein-based ingredients from underutilized resources.

Scaling R4D deals with the processes of replicating and refining A&F technologies with validated effectiveness and efficiency through a program delivery structure to achieve the large scale of coverage and equitable access to agricultural innovations and realization of improved social, economic, and environmental benefits.

ACEF-support to Technology Commercialization

In 2024, 15 ACEF-funded projects in support of technology commercialization, on various commodities implemented by state universities and colleges, were completed.

Commercialization of Sugarcane-based Products in Isabela

ISU collaborated with the Pangkaunlaran Venture Agriculture Cooperative (PVAC) to support the production and marketing of muscovado sugar and its by-products. Through capacity-building, hands-on training, and exposure visits, PVAC members were equipped to process sugarcane into muscovado, wine, vinegar, and molasses.

Products were marketed through local outlets, Kadiwa stores, and online platforms such as Facebook. A 0.8-hectare sugarcane farm yielded a net income of PhP 6,825.75 and a return above cost (RAC) of 23.40%. Processed products earned a combined net income of PhP 87,560.83 with a 94.72% RAC, demonstrating the enterprise potential of sugarcane value-adding initiatives.

Swine Production Using Green Pig Management Technologies

Seven state universities and colleges—CSU, NVSU, BPSU, PRMSU, CavSU, CNSC, and SKSU implemented swine projects using the Green Pig Management technology package developed by ITCPH. The approach integrates recommended practices in breeding, feeding, health care, and biosecurity.

Multiplier farms were also upgraded to ensure quality breeder stock availability, while training sessions enhanced the capacity of farmer-beneficiaries. The project contributed to sustained swine meat supply and improved farm income. By emphasizing biosecurity and herd health, the projects also supported resilience in swine production systems, addressing ongoing industry recovery challenges following African Swine Fever outbreaks.

Free-Range Chicken Enterprise Development

Several SUCs implemented free-range chicken projects using six standardized POTs covering housing, breeding, brooding, ranging, feeding, and health management.

NVSU established a breeding station and model farm, distributing over 10,000 inasal-type and layer chicks. PSAU dispersed starter stocks to 30 farmers from 11 associations, and provided continuous mentoring. ISU distributed chickens to 19 farmers under sustainability agreements. IFSU adopted natural raising methods using local materials and climate-resilient breeds, enhancing employment and local food availability. BASC and TAU supported technology transfer and product development through training and stock distribution. Continued support is recommended to sustain adoption and improve outcomes.

Advancing Farming Communities through Sustainable Agriculture

The SCALE UP program was implemented to improve farming livelihoods through sustainable agriculture practices, technology adoption, and community capacity building. It features four components: policy and program management, productivity and resource management, capability enhancement, and enterprise development.

In 2024, DA-CALABARZON and DA-Eastern Visayas completed their respective projects, focusing on participatory soil health management, farmer profiling, technology dissemination, and local enterprise support. Both regional offices adopted localized implementation strategies to address soil degradation, optimize fertilizer use, and link communities to market-driven livelihood opportunities in coordination with local government units and farmer cooperatives.

DA-CALABARZON

DA-CALABARZON coordinated with provincial and local government units and conducted participatory rural appraisals in Quezon. Soil nutrient analysis was endorsed for targeted interventions. The office distributed 2,413 certificates of analysis, produced 13 soil fertility maps, and created soil analysis and farmer databases. DA-CALABARZON also identified and modified fertilizer recommendations within various POTs, and distributed hybrid and vegetable seeds, fertilizer, wood vinegar, and foliar fertilizer to farmers. Furthermore, DA-CALABARZON promoted beneficial microorganisms and organic practices, offered training and technical support, and encouraged crop insurance applications. Farmer profiles were collected for clustering, and livelihood interventions like mushroom and cacao processing were identified. Two cacao farmer cooperative associations were endorsed for further development.

DA-Eastern Visayas

DA-Eastern Visayas conducted stratified soil sampling and analysis across several provinces, benefiting over 4,000 farmers. The office also produced and distributed 3,500 Soil Health Cards with test results and fertilizer recommendations. Additionally, soil fertility maps were generated for 10 LGUs. Seventy-four lead farmers and farmer beneficiaries participated in more than 15 specialized training programs covering farming technologies, entrepreneurship, and business skills, including an entrepreneurial bootcamp. Furthermore, DA-Eastern Visayas encouraged crop diversification such as sweet corn, cassava, and mushrooms while strengthening partnerships with large-scale buyers and local markets. Barangay resolutions were also developed to formalize soil management strategies and promote the 4R (right timing, right placement, right amount, and right source) of fertilizer application.

PHOTO BY DA-EASTERN VISAYAS

The Human Resource Development (HRD) Program supports the professional advancement of agriculture and fisheries researchers by providing graduate study grants, capacity-building assistance, and institutional recognition mechanisms. It also serves as the bureau's framework for enhancing R4D efficiency through human capital investment, scientific career advancement, and Magna Carta implementation.

Degree Scholarship Program (DSP) and Thesis and Dissertation Support Program (TDSP)

In 2024, five new scholars (four MS and one PhD) joined the DSP, adding to 15 continuing scholars (10 MS and five PhD). Since its inception, the DSP has supported 197 personnel from the NaRDSAF member-institutions: 106 for Master's and 91 for Doctorate degrees.

The TDSP was reintroduced in 2024, supporting six theses and two dissertations grantees. Cumulatively, the TDSP has provided support to 105 scholars (39 theses and 66 dissertations), reinforcing the bureau's commitment to advancing postgraduate research across DA institutions.

Scholar Orientation and Monitoring

In partnership with the UPLBFI, DA-BAR conducted an orientation for the DA-BAR DSP in Los Baños, Laguna. The event introduced new MS and PhD scholars, as well as thesis and dissertation support grantees to program guidelines, financial assistance, and monitoring procedures, ensuring that scholars fully understood their responsibilities and the available program support mechanisms.

Monitoring progress and experiences

An orientation program for new DA-BAR scholars was conducted in partnership with the UPLBFI in Los Baños, Laguna. The session provided guidance on program policies, monitoring mechanisms, and financial assistance procedures.

Monitoring activities were conducted through onsite visits to assess academic progress and scholar welfare. Engagements included consultations with academic advisers and university administrators. Institutions visited in 2024 were:

- University of the Philippines Visayas - March 24
- Central Mindanao University - July 30- August 1
- Central Luzon State University - August 15-16
- University of Southern Mindanao - November 20-22

Year-End Assessment and Strategic Planning

To evaluate and recalibrate program implementation, a Year-End Assessment and Planning Workshop was held on December 16-17, 2024 in Quezon City. The activity reviewed program milestones and gathered inputs for future improvements in the implementation of the DSP and TDSP. Discussions emphasized the need to adapt to emerging challenges and reinforce the relevance and responsiveness of human resource support mechanisms.

Scientific Career System

In 2024, the DA Scientific Career Evaluation Committee (SCEC), where the bureau serves as Secretariat, facilitated the review of eight candidates—five for admission and three for rank upgrading. All qualified applicants were endorsed to the NAST for further evaluation.

The Scientific Career System is a government-wide system administered by the Civil Service Commission through the Scientific Career Council, jointly established with the DOST. It provides a merit-based structure for career progression and recognition of scientists in the public service.

Magna Carta for DA S&T Workers

The bureau, as the designated Secretariat of the DA Screening Committee under Special Order No. 342 (series of 2021), processed 2,995 applications for Magna Carta eligibility in 2024. Of these, 798 were new applicants and 2,197 were for renewal. A total of 2,903 were approved and issued Certificates of Eligibility.

In line with Republic Act No. 11312 and DA Administrative Order No. 14 (series of 2021), the DA Secretary is authorized to certify non-DOST S&T personnel within DA. The Screening Committee, chaired by the DA-BAR director, convenes quarterly to evaluate applicants from across DA agencies, ensuring fair and consistent implementation of the Magna Carta benefits system.

DA-BAR recognizes the need for modern and functional R4D facilities and equipment that could allow and provide Filipino scientists and researchers with the necessary tools and boost their capabilities to help address the problems that the agriculture and fisheries sector is facing.

Through the Research Facilities Development Grant program, the bureau envisions that the majority of the R4D facilities across strategic hubs and networks in the country will be modernized to best serve the priority needs of the agriculture and fisheries community. Likewise, the program aims to be more responsive to the needs of the farmers and fisherfolk, being the main beneficiaries of the facilities. In 2023, a total of four upgraded facilities were accomplished through the DA-Agricultural Competitiveness Enhancement Fund's R4D Grant program while one facility was inaugurated with funding support from the bureau's regular fund.

Herbal R&D Facility Enhancement for Malunggay and Turmeric Growers

The One-Health Product Development Research and Development Facility at Isabela State University was upgraded to support the expanding demand for malunggay and turmeric-based products in the health and wellness sector. Now equipped with essential processing equipment—including washer, cutter, pulverizer, and tray dryer—the facility enables smallholders to develop quality herbal materials aligned with industry standards.

The improved infrastructure facilitates product development and connects growers to institutional buyers in search of high-value herbal extracts. It also provides faculty, students, and partner institutions with a platform for research-based herbal innovations, further advancing the region's capacity for science-based herbal production and commercialization.

Rehabilitating Vermicomposting Facilities for Enhanced Technology Transfer and Production

In response to rising input costs and the growing interest in sustainable nutrient sources, the Bureau of Plant Industry-Los Baños National Crop Research Development and Production Support Center rehabilitated its vermicomposting facility. Upgrades included roofing, concrete and mesh wall repairs, a wash area, canal system, signage, and the installation of misters to maintain optimal conditions for earthworm activity. Equipment support such as a hand tractor and lawn mower was also provided.

These improvements resulted in a 33% to 67% increase in vermicompost production, with each worm bin yielding approximately 1,500 kg per cycle. The facility reported a 61.29% return on investment, highlighting the economic viability of scaled vermicomposting.

In parallel, the DA-Bureau of Soils and Water Management established a new vermicomposting facility under the National Soil and Water Resources Research and Development Center for the Hillyland Pedo-ecological Zone. Thirty vermi-beds with protective sheds, stock rooms, and operational plans were developed, supporting community-based production and broader technology adoption. These efforts reinforce the role of organic soil amendments in promoting resilient, cost-effective, and ecologically sound farming practices.

Upgraded Tissue Culture Laboratory for Abaca and Bamboo Propagation

Partido State University enhanced its tissue culture laboratory to strengthen the production of quality, disease-free planting materials for abaca and bamboo, two economically significant commodities in the Bicol region. The upgraded facility, 12% bigger than the previous structure, is now capable of producing up to 1,000 plantlets, benefitting around 200 growers in the fourth district of Camarines Sur.

Beyond propagation, the facility provides a platform for researchers, extension workers, faculty, and students to pursue studies in plant breeding, biotechnology, and sustainable agriculture. With long-term preservation protocols in place, it also supports the conservation of threatened plant species through tissue culture techniques and applied research.

Upgraded Crop Protection Laboratory

Marinduque State University (MarSU) upgraded its Crop Protection Laboratory to strengthen research and extension services focused on sustainable pest management. Supported through the Agricultural Competitiveness Enhancement Fund (ACEF) under the Research for Development (R4D) Component, the facility now features enhanced infrastructure and specialized rooms for specimen processing, rearing of arthropod biological control agents, and microbial isolation and inoculation.

The laboratory's production capacity was expanded with the acquisition of new equipment for developing crop protection inputs such as vermicompost, wood vinegar, predatory mites and bugs, lacewings, *Beauveria bassiana, Metarhizium anisopliae, Trichoderma harzianum,* and Coccinellid beetles.

These upgrades enable broader farmer access to biological pest control technologies and contribute to reduced reliance on chemical pesticides through localized, science-based interventions.

Trademark Registration Support

In line with its mandate to strengthen Intellectual Property (IP) portfolio of agriculture and fisheries R4D, the bureau provided technical assistance in filing and securing trademark registrations for DA-developed brands.

- Dunaan: the official mark for Batuan-based products developed by DA RFO 6, was filed on June 10, 2024 and registered on February 3, 2025. The trademark covers a range of food products including Batuan jam, jelly, vinegar, and pastillas under Classes 29 and 30. The term “Dunaan,” meaning “inherent,” captures the cultural and regional identity embedded in the product line.

- TBI DOSE: The flagship mark of DA RFO 12, was registered on October 14, 2024 under Classes 16, 41, and 44. The registration covers IEC materials, agricultural services, and education-focused events such as workshops, training, and exhibitions. The mark reinforces the office’s Technology Business Incubation services which include knowledge-sharing and technology promotion initiatives in Region XII.

Initiatives on DA's National Intellectual Property and Technology Transfer Policy

As Secretariat of the DA-NIPTTC, the bureau continued its coordinating role in institutionalizing IP awareness and compliance across the department. Key activities in 2024 included:

- Serving as resource person for the orientation on the DA IP Policy and Technology Transfer Protocol for the Bureau of Plant Industry and DA RFO 3.
- Providing issuances including special orders, memoranda, and agency reports related to IP filings and registrations to the Office of the Assistant Secretary for Intellectual Property.

types of published content

- R4D-related reposts
- Other R4D-related videos

1 photo releases

225 total no. of posts

Adlay, an indigenous crop increases its market value for its nutrients vs. white rice.

19,679 RCS

top content

After publishing various content for its target audiences throughout 2024, these three types of content emerged with the most number of reactions, comments, and shares (RCS) across all social media platforms in 2024:

2 testimonials

78 total no. of posts

Rhiena De Guzman, farmer-partner from Cagayan Valley shares how vacuum frying of vegetables diversified her income.

12,770 RCS

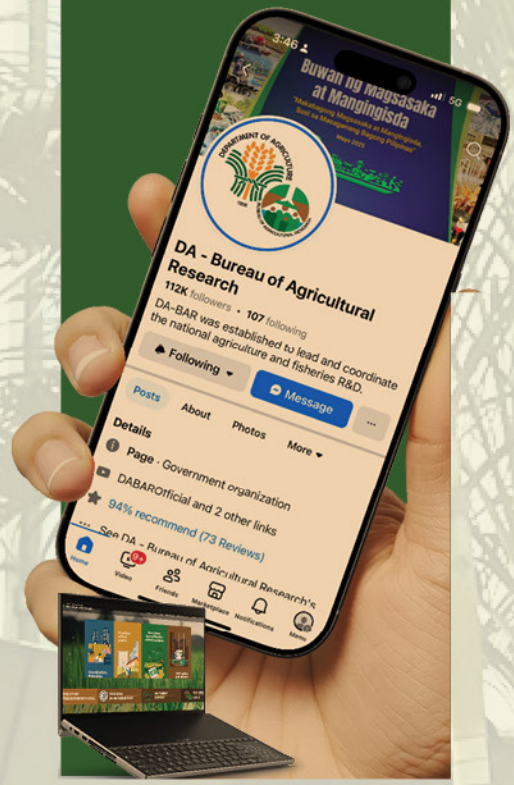
3 online seminar

41 total no. of posts

Dr. Carlos Pascual and Marnelie Subong talk about Climate Resilient Agriculture through Transformative R4D.

14,015 RCS

2024



facilitated R4D knowledge exchange

Relaunched innovation hub

12 seminars

5 Research Talks

knowledge management and information systems

97
disseminated technologies through various tools, platforms, and materials

digital reach performance

99.1K
Followers
(0.9% increase from 2023)

58.9K
Subscribers
(0.9% increase from 2023)

329
content interaction (100% increase from 2023)

43K
active users

information systems

5
developed

3
in progress

2
documentations

2
user manual packaged

publications

To disseminate the R4D projects, programs, and technologies of the bureau, BAR has three (3) publications namely BAR Chronicles (released quarterly), BAR Digest (released fortnightly), and BAR Annual Report (released annually). Here's the bureau's publication performance in 2024:

- 13 infographics shared
- 221 articles published
- 2,580 publications mailed
- 30 publications packaged

scientific literature system

- 386 digitized knowledge products
- 56 *Libreng Libro sa BAR* distributed

Local R4D Partnerships

Bayer Crop Science, Inc.

A memorandum of understanding was signed with Bayer Crop Science, Inc. to promote sustainable farming systems, efficient input use, and innovation-sharing in agriculture. The partnership supports the introduction of science-based solutions across farming communities, reinforcing the role of private sector participation in agricultural development.

Advocates of Research and Innovation in Agriculture (ARIA), Inc.

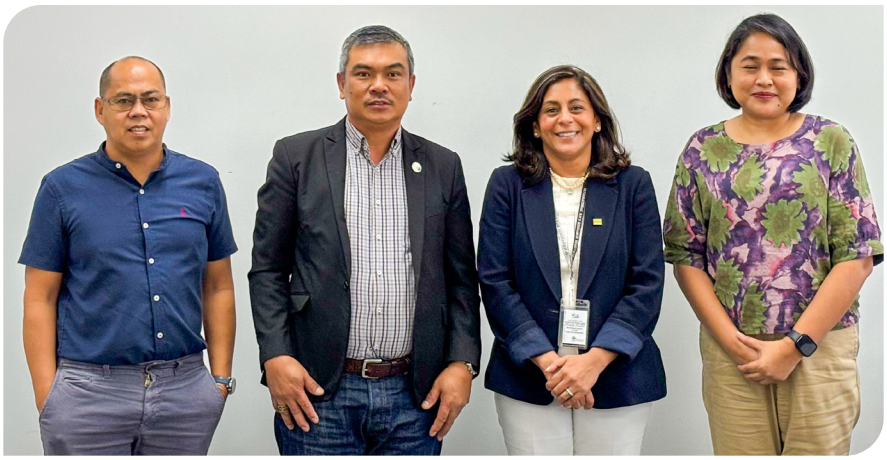
A formal collaboration with ARIA, Inc. strengthens joint efforts in research, extension, and policy development. The engagement focuses on farming systems research, capacity-building activities, and the development of knowledge products aligned with emerging needs in the sector.

ARIA Inc. is a non-profit organization registered with the Securities and Exchange Commission of the Republic of the Philippines, dedicated to promoting agricultural research and innovation for a sustainable, food-secure, and climate-resilient Philippines.

International R4D Partnerships

Center for Agriculture and Bioscience International (CABI)

Discussions advanced with CABI on biological alternatives to synthetic pesticides, including the use of the CABI BioProtection Portal. Emphasis was placed on nature-based solutions for value chain improvement and transboundary pest management.



International Rice Research Institute (IRRI)

Collaboration with IRRI remained central to rice research and development. Activities focused on climate-resilient varieties, precision agriculture technologies, and farmer capacity-building. Preparatory dialogues were also conducted for the Symposium on International Partnership for Agriculture-Fisheries Research for Development 2025.

Asian Food and Agriculture Cooperation Initiative (AFACI)

Participation in AFACI's 15th anniversary gathering reaffirmed shared commitments to regional cooperation. The event highlighted the role of joint research, knowledge exchange, and institutional linkages across Asian countries.

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

A partnership agreement was formalized with ICRISAT to support varietal development for sorghum, pigeonpea, and peanut. The collaboration also covers regenerative agriculture and technical advisory support for sustainable field practices.

World Vegetable Center (WVC)

Engagements with WVC focused on scaling mungbean and soybean technologies in support of local legume industries. Discussions align with varietal improvement programs and seed system development at the national level.

Canadian Embassy

Initial dialogues explored shared priorities in science-based agriculture and future bilateral cooperation. The engagement aims to identify potential areas for collaborative research and development initiatives.

Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA)

The bureau participated in the SEARCA-led Regional Stakeholders Consultation Workshop for the establishment of the Consortium for Agricultural Development, Research, and Extension in Southeast Asia (CADRE). The initiative gathered insights from 11 countries, with the bureau contributing to the formulation of the consortium's operational framework.

Australian Centre for International Agricultural Research (ACIAR) and Griffith University

Exploratory discussions with ACIAR and Griffith University were initiated to identify collaboration opportunities on soil health and sustainable agriculture. These engagements signal future alignment in thematic areas relevant to the bureau's R4D thrusts.

National Women's Month Celebration

The bureau observed National Women's Month with a series of activities, commencing on March 8, 2024, with a Gender-fair Communication Orientation led by Atty. Judie Rose Tugado Dimayuga, a member of the PCW's National Gender and Development Resource Pool. The session focused on integrating gender perspectives into media and communication practices, referencing relevant policies and the Gender-Fair Media Guidebook.

Following this, on March 11, the Women's Month Photo Exhibit was launched, showcasing 14 staff interpretations of the 2024 sub-theme, Lipunang Patas sa Bagong Pilipinas: Kakayahan ng Kababaihan, Patutunayan! The winning entries visually represented themes of balancing responsibilities, women's empowerment, and leadership in agricul-ture. Furthermore, the critically acclaimed film "Paglipay" was screened on March 15, raising awareness on indigenous communities and gender biases.

As part of the month-long activities, a seminar on Queen pineapple farming was held on March 21, 2024. Led by Jasmin M. Dacillo of the DA-Bicol Region, the seminar highlighted the systematic process and economic potential of Queen pineapple production.

GAD agenda formulation for gender mainstreaming

To further institutionalize gender-responsive governance, a two-day GAD Agenda Formulation Workshop was conducted on November 6-7, 2024. Led by Atty. Judie Rose T. Dimayuga, a member of the PCW's National Gender and Development Resource Pool, and attended by key bureau personnel, the workshop produced an initial draft of the bureau's GAD agenda, with the final version expected in the first quarter of 2025.

The workshop emphasized key themes such as achieving gender-responsive governance through gender mainstreaming, the importance of a participatory and inclusive development process, alignment with the bureau's mandate and national priorities, and the establishment of a monitoring and evaluation framework. The significance and methodology of gender analysis were also discussed to inform the formulation of the GAD agenda.

Technical Training

In support of professional development across technical disciplines, a total of 23 technical training programs were completed in 2024. These interventions enhanced staff competencies in project and program development, data analytics, monitoring and evaluation, cybersecurity, cooperative auditing, and organic agriculture systems.

Key training highlights:

- Results-based project management, financial analysis for agri-fishery R4D projects, and basics of project management enhanced planning and evaluation capacity within the bureau's technical workforce.
- Using R and NVIVO software, data visualization, and qualitative and quantitative methodologies reinforced applied research capabilities.
- Specialized courses on AI for research writing, cybersecurity proficiency, and power BI dashboarding aligned with the bureau's growing emphasis on digital transformation and data governance.

Non-technical Training

Complementing its technical programs, the bureau also supported 22 non-technical learning interventions to advance personal effectiveness, workplace wellness, and leadership development.

Key training highlights:

- Promoting self-care in the workplace, mastering work-life balance, and webinar on total wellness, which nurtured mental health and well-being.
- Coaching and mentoring skills, developing a policy agenda in government, and building essential leadership skills equipped staff to navigate evolving institutional demands.
- Administrative skills were bolstered through sessions on records management, public accountability, and standard bidding procedures.
- Additional focus was placed on digital literacy with training on AI, online safety, and harnessing AI for digital tools.

Workshops

A total of 17 workshops were conducted in 2024, serving as intensive platforms for skills application, technical upskilling, and strategic planning.

Key training highlights:

- Training-workshop on competency mapping and job analysis, which supported ongoing HR reforms.
- Training-workshop on qualitative and quantitative research methodologies and general principles of qualitative research and design analysis, which provided foundational research design skills.
- Ladderized training on project development for agriculture and fisheries, delivered in multi-session format, guided teams through project structuring, financial modeling, and implementation.
- Capacity building workshop on mainstreaming competition impact assessment emphasized the integration of competition policy into agricultural development planning.

Conferences

Staff participation in six major local and international conferences supported continuing professional exchange and exposure to global trends.

Key training highlights:

- 35th Philippine Agricultural Engineering Week, 11th Philippine Agriculturists' Summit, and 31st National Fruit Symposium, which updated staff on emerging issues in agricultural systems and engineering.
- 2024 Leaders and Human Resource Symposium, Regional HRMP Congress, and Philippine Institute of Environmental Planners 33rd National Convention expanded perspectives on human capital strategy, organizational development, and environmental planning.
- International participation in the AFACI Communication Fellowship Program, Climate Resilient Development Workshop in Southeast Asia, and ASEAN-Türkiye Exchange on Climate Adaptation fostered cross-country knowledge sharing and institutional visibility.

2nd National Agriculture and Fisheries Technology Exhibition (NAFTE)

Held on June 4–6, 2024, at The Atrium, Limketkai Center in Cagayan de Oro City, the second NAFTE brought research and innovation to the heart of farming and fishing communities. Guided by the theme “Makabago at Angkop na Teknolohiya: Tulong sa Patuloy na Pag-unlad ng Magsasaka at Mangingisda para sa Bagong Pilipinas,” the event connected over 40 institutions across sectors to showcase technologies, share knowledge, and celebrate regional innovations.

Highlights included the launch of the Northern Mindanao R4DE logo, the CRAFT R4D Medium-Term Plan, and several new agri-technologies such as Pili Milk, Soyfeed, and Pure Grace Nutri Mix Plus. The DA-BAR Town Hall Meeting offered a direct avenue to inform stakeholders of available programs and services.

Voices from the field including Governor Santiago B. Cane Jr. of Agusan del Sur and leaders from Hineleban Foundation and Bauertek shared powerful stories of success, resilience, and innovation. Seminars and demos spotlighted diverse technologies, from nixtamalized corn to biosensors and chocolate processing.

Recognitions were awarded to standout food and non-food innovations and the Best Booth. A symbolic turnover formally passed the 2025 hosting to DA-Central Visayas, reinforcing the bureau’s commitment to making agricultural R4D visible and accessible across the country.

37th Founding Anniversary

The DA-BAR celebrated its 37th anniversary on August 9, 2024, with a gathering that reflected both institutional progress and the people who made it possible. Held at the Luxent Hotel in Quezon City, the event was graced by Assistant Secretary Philip C. Young and National Scientist Dr. Emil Q. Javier, whose presence reminded attendees of the enduring value of science in agriculture.

Director Junel B. Soriano reported notable accomplishments, including a strong 82% obligation rate and 97% disbursement rate for FY 2023. Key milestones included the bureau's organizational restructuring proposal, the launch of its Strategic Communication Plan, and the continued enhancement of learning and development programs.

Recognition was given to loyal and outstanding staff whose service—spanning up to three decades—embodied the bureau's core values. The ceremony also featured the launch of the bureau's new website and e-Library, the unveiling of the DA-BAR corporate video, and the introduction of the PROSPECT Approach for participatory research outreach. An ecumenical service, traditional games, and a Zumba session reflected the camaraderie that continues to define the DA-BAR workforce.

National Research Symposium (NRS)

NRS returned on October 8–9, 2024, after a four-year pause due to the COVID-19 pandemic. Held in Quezon City, the event showcased outstanding research outputs and honored top-performing R4D initiatives in agriculture and fisheries.

Awards were conferred in three categories for Best R&D Papers and one for Best R&D Poster. Gold distinctions were awarded to the DA-PCC for two projects: "Development of Climate-Smart Interventions to Enhance Water Buffalo Reproduction in Heat-Stressed Conditions" (Technology Generation) and "The Economic Viability of Dairy Buffalo Farming Businesses: An *Ex-Ante* Analysis" (Policy and Socio-Economics), which also won Best Poster. NFRDI received gold for "Technology Verification on the Nursery Production of the Mangrove Crab, *Scylla serrata*" under the Technology Adaptation and Verification category.

The symposium served as a national platform for knowledge dissemination, scientific exchange, and institutional recognition of contributions to agricultural and fisheries research.

2nd National AFRREDN Meeting

The second National Agriculture and Fisheries Resources, Research and Extension for Development Network (AFRREDN) Meeting was convened on December 4-5, 2024, in Diliman, Quezon City. The event gathered representatives from DA attached agencies, bureaus, banner programs, academic institutions, LGUs, private organizations, and farmer groups, signaling the shared commitment to unify R4D and extension efforts across the sector.

Plenary sessions led by DA-BAR and DA-ATI officials tackled institutional tools such as the TRL Assessment Tool and the Philippine-ASEAN Sustainable Agriculture Initiative. Regional presentations from Cagayan Valley, Eastern Visayas, and Zamboanga Peninsula highlighted locally-driven strategies that emphasized coordination, resource efficiency, and inclusive engagement.

The meeting marked a milestone with the formal presentation of DA Memorandum Circular No. 2, series of 2024, institutionalizing AFRREDN as a permanent platform. It represents a maturing network that values continuity, community, and a shared responsibility to deliver relevant R4D services to Filipino farmers and fishers.

Sustainable Challenge Awards (SCA)

SCA recognized three exemplary research for development (R4D) initiatives during the awarding ceremony held on December 6, 2024, in Quezon City. The awards honor projects that demonstrated innovation, sustainability, and tangible community impact through the application of science-based solutions in agriculture and fisheries.

First place was awarded to DA-Northern Mindanao for its “Amazing Adlay” project, followed by DA-Cagayan Valley for “Corn Double Row,” and DA-National Fisheries Research and Development Institute (NFRDI) for “Oyster Aquaculture Using Bamboo Raft Technology.” Each winning institution received a plaque of recognition, cash incentives, and a PhP 3 million research grant to support further development and scaling.

director	JUNEL B. SORIANO, PhD
assistant director	JOELL H. LALES
division heads	RAYMOND PATRICK L. CABRERA Program Development
	ANTHONY B. OBLIGADO, PhD Program Monitoring, Evaluation and Linkaging
	SALVACION M. RITUAL Knowledge Management and Information Systems
	JUDE RAY P. LAGUNA Administrative and Finance

production team

EDITOR
Daryl Lou A. Battad

MANAGING EDITOR
Lara Abegail S. Espiritu

WRITERS
Ma. Eloisa H. Aquino
Lea Bañares-Calmada
Daryl Lou A. Battad
Kristina S. Estrada
Lara Abegail S. Espiritu
Maria Elena M. Garces
Rena S. Hermoso
Angelo N. Padura
Jimwell Kenneth R. Tanay

INFOGRAPHICS
Ricardo G. Bernardo
Jimwell Kenneth R. Tanay

PHOTOS
DA-BAR

COVER
Ronan Gabriel A. Pido

LAYOUT
Rena S. Hermoso

EDITORAL ADVISERS
Junel B. Soriano, PhD
Joell H. Lales
Salvacion M. Ritual

DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL RESEARCH
RDMIC Bldg., Elliptical Road corner Visayas Avenue,
Diliman, Quezon City 1104
www.bar.gov.ph

DABAROfficial