

A trainee holds sea cucumber at a sea ranching site in Sagay, Negros Occidental, during their sampling activity, which is part of a practical session of the Training Course on Sandfish (*Holothuria scabra*) Seed Production, Nursery, and Management, held from April 29 to 14 May 2024. Photo by EV Antolino



May–June 2024

aqd matters

Newsletter of the SEAFDEC Aquaculture Department, Tigbauan, Iloilo, Philippines

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Seizing the El Niño advantage in aquaculture

● NYRA ARMADA



Milkfish harvested from the Dumangas Brackishwater Station of the Southeast Asian Fisheries Development Center Aquaculture Department on 22 February 2024. Photo by DEVCOM

WHILE the El Niño phenomenon brings about a cascade of environmental changes, such as extreme heat and below-normal rainfall, the Southeast Asian Fisheries Development Center Aquaculture Department (SEAFDEC/AQD) says it also presents an opportunity for milkfish production.

SEAFDEC/AQD Chief Dan Baliao recognized that while fish farmers relying on freshwater species, such as tilapia and catfish

farms, will be especially challenged by El Niño, those farming brackish and marine species should seize the opportunity the dry and warm season brings.

MILKFISH THRIVING IN THE EL NIÑO HEAT

Baliao shared that the milkfish breeders at the research center's Tigbauan Main Station are now spawning daily, and their hatcheries are mostly filled with larvae. He said the heat exacerbated by the El Niño

→ SEIZING THE EL NIÑO, PAGE 2

Agreement inked for multi-species marine hatchery in Davao Occidental



SEAFDEC/AQD, CBLUE Aquafarm Ventures, Incorporated, and BFAR-XI are collaborating to provide technical assistance, training, and services for a multi-species marine hatchery in Lacaron, Malita, Davao Occidental, funded by CBLUE Aquafarm Ventures. Photo courtesy of CBLUE Aquafarm Ventures, Incorporated

● NYRA ARMADA

MALITA, Davao Occidental – SEAFDEC/AQD Chief Dan Baliao, representatives from CBLUE Aquafarm Ventures, Incorporated, and Bureau of Fisheries and Aquatic Resources XI officer-in-charge Regional Director Relly Garcia signed a Tripartite Memorandum of Agreement (MOA) on 14 May 2024 regarding the proposed multi-species marine hatchery in Lacaron, Malita town.

The collaboration aims to provide technical assistance, training, and services to CBLUE Aquafarm Ventures, the main project proponent and primary funder for the construction, installation, and operation of the said marine hatchery for breeding high-value fish species.

According to the MOA, SEAFDEC will conduct on-the-job and on-site training for CBLUE personnel and collaborate on research projects to establish data on the breeding and propagation of various species cultured at

its Aquaculture Department in Iloilo.

These aim to achieve sustainable breeding, protection, conservation, and management of the target species.

Additionally, SEAFDEC will offer technical advice and assistance in various aspects of the project's operation and recommend measures to develop the technical capabilities of staff and enhance fish breeding and production processes.

SEAFDEC will also establish linkages among public and private stakeholders in the aquaculture industry to promote best practices; facilitate networking with government and international agencies for access to industry experts and funding; and foster partnerships with academic and research institutions for research and internship programs.

Rep. Claude P. Bautista of the lone district of Davao Occidental witnessed the signing of the agreement. **a**

→ SEIZING THE EL NIÑO, FROM PAGE 1

provides an advantage for breeders, as the relatively high water temperatures stimulate milkfish metabolism, leading to spawning and ample egg and larvae production.

On the other hand, during cold months between November and February, SEAFDEC/AQD has to invest in industrial water heaters to keep the breeders active at a water temperature between 29 to 30 degrees Centigrade and ensure a continuous supply of eggs for hatcheries.

TRADITIONAL METHODS PREVAIL

During El Niño, the absence of heavy rainfall is also a boon for milkfish ponds with natural food production. The lack of rainfall encourages better pond preparation for the growth of natural food sources such as “lab-lab,” a naturally occurring mat of benthic algae that thrives in brackishwater fishponds but dissipates when exposed to rain.

Baliao said that fishpond operators can save on supplemental feeding if they take advantage of good lab-lab growth during dry spells because lab-lab itself is a robust source of fish nutrition.

However, he also suggested good water management during the tidal cycle and warned that farmers should take extra care by maintaining desirable pond water levels and stocking densities because extreme heat followed by a sudden rainfall can cause fish kills.

“Farmers ought to stock only the recommended density of 2,500 to 3,000 milkfish fingerlings per hectare. Stocking beyond what is recommended would necessitate additional investment on artificial feeds and life support systems,” he added.

SETTING THE STAGE FOR RAINY SEASON

While El Niño prevails, Baliao encouraged farmers to engage in proactive pond management to prepare for the eventual return of the rainy season. Activities such as pond preparation, application of organic fertilizers, and liming are prioritized during this favorable weather period, setting the stage for successful runs when rainfall resumes.

Baliao emphasized the importance of utilizing the dry and warm months to grow more brackish and marine species, such as milkfish, because it's not just about the weather; it's about harmonizing with nature to farm smarter. **a**

56th SEAFDEC Council Meeting highlights key fisheries management initiatives

● NYRA ARMADA



Delegates of the 56th SEAFDEC Council Meeting at the inaugural ceremony on 6 May 2024, in Tagaytay City, hosted by the Philippines through the DA-BFAR. Photo by RT Bautista

TAGAYTAY CITY, Philippines—This year's 56th Southeast Asian Fisheries Development Center (SEAFDEC) Council Meeting, which ran from 6–9 May 2024, gathered Council Directors and delegates from the 11 SEAFDEC Member Countries.

Chief Dan Baliao and the rest of the Executive Committee led the SEAFDEC/AQD delegation that reported on the progress and plans of the department.

The inaugural ceremony on the 6th, led by the Philippines through the Department of Agriculture (DA) - Bureau of Fisheries and Aquatic Resources (BFAR), was presided by DA Undersecretary

Pompano sampling at NFRDI-FFRDC

● NYRA ARMADA

SEAFDEC staff Mr. Edgar Somblingo and Ms. Janice Genilza-Tambirao evaluated samples of snubnose pompano that were being cultured at the National Fisheries Research and Development Institute (NFRDI) - Freshwater Fisheries Research and Development Center (FFRDC) in Brgy. Butong, Taal, Batangas, on 8 May 2024.

The activity involved collecting biological data, such as body length and weight.

SEAFDEC/AQD and NFRDI-FFRDC are currently engaged in a joint project on the “Grow-out culture of snubnose pompano (*Trachinotus blochii*) in brackish water ponds.”

The project aims to determine pompano production in brackish water ponds using recommended techniques; evaluate growth, survival, and production rates; assess the economic feasibility



of pompano cultivation; and subsequently package and share the verified technology to stakeholders. **a**

for Fisheries and Council Director for the Philippines, Ms. Drusila Esther Bayate.

This year's agenda covered policy discussions on critical fisheries management issues, international fisheries-related concerns, and post-harvest technology in fisheries. The Council acknowledged significant regional initiatives by SEAFDEC to combat illegal, unreported, and unregulated (IUU) fishing, including the Regional Fishing Vessels Record (RFVR) Database, electronic ASEAN Catch Documentation Scheme (eACDS), and enhancement of national capacities in Port State Measures (PSM) implementation.

SEAFDEC was commended for the preliminary results of stock and risk assessments of Indo-Pacific king mackerel (*Scomberomorus guttatus*) and narrow-barred Spanish mackerel (*Scomberomorus commerson*) in Southeast Asian waters.

The “Regional Framework for Fishery Statistics of Southeast Asia (2024 Edition)” was approved for further submission and endorsement under the ASEAN mechanism. From 2024 onwards, SEAFDEC will use this framework to compile regional fishery statistics data.

The Council also recognized the ongoing support from the Government of Japan through the Japanese Trust Fund (JTF) for projects and activities promoting sustainable fisheries and aquaculture development in Southeast Asia.

Finally, the Council reviewed the progress and achievements of SEAFDEC programs in 2023 and approved the proposed activities for 2024. **a**



Graduates of the 4th Manpower Development Program of SEAFDEC/AQD, along with members of the Executive Committee and graduates from the previous three batches. Photo by JF Aldon

Five fisheries graduates complete intensive aquaculture training course

● NYRA ARMADA

AFTER three months, five fisheries graduates completed an intensive training course on aquaculture technologies on 31 May 2024, as part of SEAFDEC/AQD's initiative to build a pool of highly skilled aquaculturists.

The trainees—Joshua Abras, Rolan Bernal, Donita Gwen Gulmatico, Philip Palma, and Anaiah Rhima Palomata—hurdled the final stage of the training which included individual oral reporting and oral examinations on hatchery and grow-out procedures, evaluated by a panel of experts.

“One factor limiting aquaculture expansion is the lack of capable manpower. This led me to develop the Manpower Development program to provide our host country with aquaculturists who are young, dedicated, and skilled,” remarked Chief Dan Baliao.

This fourth session of the Aquaculture Technologies for Manpower Development (ManDev) program, started on 19 Feb. 2024 and seeks to equip graduates from state universities and colleges with enhanced knowledge and proficiency in various aquaculture technologies.

Their training covered the culture of shrimp, marine fish, mangrove crab, giant freshwater prawn, and seaweed, as well as marine cage and brackishwater pond aquaculture.

Throughout the program, the trainees sat in dozens of lectures and engaged in numerous practical sessions at SEAFDEC/AQD facilities in Tigbauan and Dumangas in Iloilo, as well as Nueva Valencia in Guimaras.

During the closing ceremony, Gulmatico shared her reasons for joining the fourth batch of the

training course: “As someone who spent almost two years of college through online learning, I knew I had a lot to learn in the field, especially with hands-on practice in aquaculture technologies and fisheries.”

Abras, meanwhile, stated, “During the three months of the training course, it was tough, but I survived and am very fortunate. Thank you SEAFDEC/AQD for accepting me as a trainee in ManDev 4.”

Chief Baliao congratulated the trainees for completing the course and expressed his hope that they have gained substantial knowledge from the training.

This year's ManDev graduates follow three other batches trained in 2018, 2021, and 2022–2023. **a**

SEAFDEC-NFRDI project collab nets 4.3 tons of whiteleg shrimp

● NYRA ARMADA

TAAL, Batangas – The collaborative project between SEAFDEC/AQD and the National Fisheries Research and Development Institute (NFRDI) successfully harvested 4.3 tons of whiteleg shrimp (*Litopenaeus vannamei*) during the harvests conducted from 7–9 May 2024 at the NFRDI-Freshwater Fisheries Research and Development Center (FRDC) located in Brgy. Butong.

A total of 160,000 shrimp were stocked on 5 February in a 4,000 square meter pond at a density of 40 pieces per square meter. Using an environment-friendly culture method that lasted over 91 days, the shrimp reached an average body weight of 29.5 grams per piece.

According to Mr. Edgar Somblingo of SEAFDEC/AQD, the harvest, conducted at NFRDI's Freshwater Fisheries Research and Development Center in Butong, Taal, Batangas, marks the third successful run of whiteleg shrimp grow-out culture.

The collaboration between SEAFDEC/AQD and NFRDI commenced in March 2023 as part of the Joint Mission for Accelerated Nationwide Techno-Transfer Program (JMANTTP). This program, which is a priority under the administration of Chief Dan Baliao, aims to help uplift the state of aquaculture in the Philippines, the research center's host country.

“The shrimp harvest in Batangas is a testament to AQD's dedication to sharing and disseminating mature technologies developed by our researchers and scientists to government agencies and stakeholders nationwide,” said Chief Dan Baliao.

SEAFDEC's contributions include financial support, technical expertise, and equipment for the research project which aims to promote economically sustainable, environmentally friendly, and socially equitable aquaculture technologies.

56TH SEAFDEC COUNCIL MEETING DELEGATES WITNESS THE HARVEST

The partial harvest, conducted on 9 May 2024, coincided with the tour of the delegates from SEAFDEC's 11 member countries to the NFRDI – FRDC.

The NFRDI-FFRDC was one of the locations visited by delegates who were attending the 56th SEAFDEC Council Meeting that was held in Tagaytay City.

They were warmly welcomed by FFRDC Chief Dr. Maria Theresa Mutia and were presented with the agency's research and development projects to improve the country's fisheries industry

The delegation, headed by SEAFDEC Secretary General Dr. Suttinee Limthammahisorn, included the SEAFDEC/AQD group which was in turn headed by Chief Dan Baliao. **a**



The “Oplan Balik Sugpo” program aims to revive and boost black tiger shrimp farming by producing high-quality postlarvae in biosecure hatcheries and promoting environmentally friendly practices for grow-out culture in ponds. *Photo by NYRA Armada*



SEAFDEC/AQD stocks black tiger shrimp fry

● NYRA ARMADA

AS PART of the “Oplan Balik Sugpo” program, SEAFDEC/AQD transported 360,000 black tiger shrimp (*Penaeus monodon*) fry from its Tigbauan Main Station to one of the ponds at its Dumangas Brackishwater Station (DBS) last 13 May 2024.

The fry, harvested from four tanks at SEAFDEC/AQD’s Shrimp Hatchery, came from 10 spawners sourced from Masbate province. The fry were collected using a harvesting net positioned in a harvesting pit. Thereafter, the fry were placed in oxygenated bags before being transported to DBS in Dumangas, Iloilo.

Upon arrival at DBS’s Pond 1, the shrimp were acclimatized to allow the fry to adjust the pond’s temperature, salinity, and water conditions, minimizing stress and promoting their health and well-being. The shrimp were then gradually released into their new culture environment.

The “Oplan Balik Sugpo” program, launched by SEAFDEC/AQD during the tenure of Chief Dan Baliao, aims to revive and boost black tiger shrimp farming. [a](#)



Dr. Leobert de la Peña lectures on “Biosecurity Practices at SEAFDEC/AQD’s Hatchery and Pond Facilities” on the second day of the event, 23 May 2024. *Photo by JF Aldon*

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biosecurity plan and program. “One solution to economic losses in aquaculture is the strict implementation of a biosecurity program,” he said.

He detailed the biosecurity practices used by SEAFDEC/AQD in hatchery operations and grow-out culture to increase productivity, reduce the use of expensive medicines and chemicals, lower production costs, and prevent antimicrobial resistance.

Meanwhile in the Aquaculture Conference held as part of the event, Dr. Roger Edward Mamauag discussed the “Utilization of Alternative Ingredients to Promote Cost-Effective Feeds for Sustainable Aquaculture,” highlighting the development of cost-efficient feeds using byproducts from corn, poultry abattoirs, and coconut-fermented copra meal. These alternative ingredients partially substitute fish meal, an expensive protein source in feeds.

Dr. Mamauag shared results from a 2020 study at SEAFDEC/AQD’s Dumangas Brackishwater Station, showing that the SEAFDEC-formulated diet outperformed commercial feeds.

Additionally, Mr. Marwin Dela Cruz presented “SEAFDEC/AQD’s Recent Developments on Giant Freshwater Prawn (GFP) Grow-out Technology.” He explained that GFP is a high-value species that can be cultured in slightly saline environments, is profitable, and can be co-cultured with other fresh or brackishwater species.

Mr. Dela Cruz noted that tilapia and milkfish farmers could integrate freshwater prawns into their systems for a more profitable setup, though they should consider the additional costs of prawn post-larvae, aeration, and labor. The milkfish-prawn system is recommended for milkfish farmers whose areas have access to slightly saline water and to those who are not willing to venture to tilapia-prawn polyculture but are already into milkfish farming.

In addition to the seminars, SEAFDEC/AQD showcased live giant freshwater prawns (“ulang”) and silver therapons (“ayungin”) from its Binangonan Freshwater Station in an exhibition held alongside the event. These commodities are the subjects of ongoing research at SEAFDEC/AQD.

A mobile bookstore was also set up at the exhibit to disseminate SEAFDEC/AQD’s aquaculture manuals to shrimp farmers, government personnel, and other stakeholders attending the congress.

Dr. de la Peña, Dr. Mamauag, Mr. Dela Cruz, and other technical and information staff actively engaged with exhibition attendees, providing further information and answering questions. [a](#)

Experts share insights at Livestock and Aquaculture PH 2024

● NYRA ARMADA



Dr. Roger Edward Mamauag engages with exhibition attendees, providing additional information and answering their questions about aquaculture. *Photo by JF Aldon*

PASAY City, Philippines— Three SEAFDEC/AQD experts who shared their expertise in seminars and conferences that were attended by visitors to the Livestock Philippines

and Aquaculture Philippines 2024 event, held from May 22 to 24 at the World Trade Center.

On the event’s second day, Dr. Leobert de la Peña delivered a

lecture on “Biosecurity Practices at SEAFDEC/AQD’s Hatchery and Pond Facilities” at the Biosecurity Asia Forum. Dr. de la Peña discussed how to design and implement a



At the Aquaculture Conference, Dr. Roger Edward Mamauag shared results from a 2020 study conducted at SEAFDEC/AQD’s Dumangas Brackishwater Station, demonstrating that the SEAFDEC-formulated diet outperformed commercial feeds. *Photo courtesy of Aquaculture PH’s organizer*



During his presentation on “SEAFDEC/AQD’s Recent Developments on Giant Freshwater Prawn (GFP) Grow-out Technology,” Mr. Marwin Dela Cruz explained that GFP can be cultured in slightly saline environments, is profitable, and can be co-cultured with other freshwater or brackishwater species. *Photo by MV Dosada*

→ EXPERTS SHARE, PAGE 7

Multi-species hatchery taking shape in Agusan Del Norte

● NYRA ARMADA

SEAFDEC/AQD staff Engr. John Aldrin Tugo and Mr. Emilio Mirasol, with assistance from the Bureau of Fisheries and Aquatic Resources-CARAGA, worked on the plumbing system of the multi-species marine hatchery being constructed in Brgy. Ata-Atahon, Nasipit, Agusan Del Norte, from 1–10 May 2024.

The establishment of the hatchery in Nasipit was mandated by Republic Act No. 10858, with SEAFDEC/AQD being responsible for conducting the feasibility study and supervising the construction process.

The hatchery is currently 80 percent complete. 📸



SEAFDEC/AQD's contributions include conducting a feasibility study and supervising the construction of the multi-species marine hatchery in Bgy. Ata-Atahon, Nasipit, Agusan Del Norte. Photo by JA Tugo

On-site eye examination for SEAFDEC/AQD employees, dependents

● NYRA ARMADA

AS a way of promoting eye health among its workforce, SEAFDEC/AQD organized a free on-site eye examination at the Multi-Purpose Hall of Tigbauan Main Station on 23 May 2024, which was participated by 48 employees and their dependents.

The activity was in collaboration with Galvez Optical Clinic facilitated by Dr. Divina Hernandez and Dr. Aline Salomon. The former lectured on eye health awareness, which emphasized the importance of regular eye check-ups and proper eye care practices. 📸



A SEAFDEC/AQD employee undergoes an eye check-up during a free on-site eye examination at the Multi-Purpose Hall of Tigbauan Main Station on 23 May 2024. Photo by DEVCOM



SEAFDEC/AQD hosts Regional Sea Cucumber Roadshow

● NYRA ARMADA

THE Southeast Asian Fisheries and Development Center Aquaculture Department (SEAFDEC/AQD) hosted the Regional Sea Cucumber Roadshow 2024 West Visayas Session on 13–14 June 2024 at Tigbauan Main Station.

The two-day event, supported by the Australian Centre for International Agriculture Research (ACIAR), featured the latest developments in sea cucumber fisheries and management, with participation from various academic institutions, regional government agencies, and local government units.

Attendees – who hailed not only from Western Visayas but also from Cebu, Marinduque, Palawan, and Misamis Oriental – explored new sea cucumber culture methods, developed best practices for sea cucumber aquaculture and ocean rearing, and discussed partnerships with various agencies and organizations to expand sandfish farming to new localities.

This was the second leg of the roadshow, following the first session held in Bolinao, Pangasinan, from 8 to 11 May 2024.

SEAFDEC/AQD Chief Dan Baliao highlighted the significance of the event, stating, “This is a good opportunity to raise awareness about sea cucumbers among Filipinos and how to sustainably farm them, given their potential in international markets.”

Key lectures included topics such as “Overview of Sea Cucumber Ecology, Fisheries, and Trade,” “Current Knowledge & Practices – Hatchery, Nursery, Grow-out of Sandfish,” “Integrated Systems, Cluster Production and Linkages (Luzon Highlights),” “Community-friendly Approaches (East Visayas Highlights),” and “NICER Program on Sea Cucumbers (Mindanao Highlights).”

The second day featured workshops aimed at identifying sea cucumber status (resources, research, and projects) by area, identifying

gaps and needs (technical, funding, permits, partners), and exploring potential collaborations, projects, assistance, etc. Open forums allowed participants to ask questions, share thoughts, and engage in discussions.

The event is part of an ACIAR-funded project on community-based sea cucumber production that aims to enhance the skills of sea cucumber farmers in aquaculture and resource management through research and community development in the Philippines.

By adopting practical sea cucumber culture methods, coastal communities can generate new income opportunities and diversified livelihoods, particularly for women. By advancing sandfish culture technologies to support expansion to new sites and ensure stable market accessibility, the project aims to achieve significant ecological, economic, and social impacts across the Philippines. 📸



The two Japanese visitors tour the Feed Mill facility to gain insights into SEAFDEC/AQD's aquaculture feed production. Photo by NG Armada

Japanese experts visit AQD to discuss fish disease mgm't, aquaculture feed market

● NYRA ARMADA

SEAFDEC/AQD's Tigbauan Main Station welcomed two Japanese visitors, Mr. Kaoru Hirabayashi, President of Strout Incorporated, and Dr. Watanabe from Hayashikane Sangyo Co., Ltd.'s Aqua Medical Laboratory last 14 May 2024.

The visitors met and discussed with SEAFDEC/AQD experts regarding fish disease management and the aquaculture feed market.

Dr. Edgar Amar, head of the Training and Information Division,

and Dr. Roger Edward Mamauag, head of the Technology Verification and Extension Division, along with a Fish Health Laboratory staff, received them.

In fish disease management, the visitors aimed to understand the primary fish diseases currently affecting the Southeast Asian region and the anticipated trends in these diseases. The conversation included a comparison of disease management practices, particularly the use of antibiotics in Southeast

Asia, Japan, and the European Union.

In the aquaculture feed market, the visit sought to understand the establishment of supply chains for aquaculture feed and seed procurement in Southeast Asia.

In addition to these discussions, the visitors toured SEAFDEC/AQD's Feed Mill facility and Crab Hatchery, gaining insights into the practical aspects of aquaculture operations and feed production. [a](#)

Training course on seaweed micropropagation and nursery culture held for BARMM participants

● NYRA ARMADA

SEAFDEC/AQD organized a nine-day training program on micropropagation and nursery culture of the *Kappaphycus* seaweed for four participants from the Ministry of Agriculture, Fisheries, and Agrarian Reform (MAFAR) of the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM).

The training course, held from 27 May to 5 June 2024, included lectures on micropropagation and hatchery operations; seaweed culture methods; health problems;

economic analysis of seaweed hatchery, nursery and grow-out culture; and sea-based nursery cage culture of *Kappaphycus*.

Participants engaged in hands-on activities such as stocking, monitoring, and sampling of *Kappaphycus*; identifying different species of seaweed; and counting, checking, cleaning, and packing seaweed propagules for transport.

A seaweed value-adding session also taught them the potential of seaweed as ingredients in a variety of culinary creations. [a](#)



The trainees during their practical sessions at Dumangas Brackishwater Station. Photo by KD Abrogueña



as this also highlights the significant time and resources dedicated by AQD for mangrove research and development," said Dr. Sheryll Santander-Avanceña, AQD expert and one of the resource speakers during the closing program. [a](#)

BFAR staff acquire skills in mangrove crab culture

● NYRA ARMADA

NINE trainees from the different regional offices of the Bureau of Fisheries and Aquatic Resources completed the 10-day Mangrove Crab Nursery and Grow-out Operations training course at the SEAFDEC/AQD Tigbauan Main Station (TMS) in Iloilo.

The training, which ran from 17 to 26 June 2024, provided them with the skills needed in the implementation of their crab grow-out projects in their respective areas.

The participants were immersed in activities such as biology and identification of mangrove crab *Scylla* spp., mangrove crab hatchery operations, disease diagnostics of crab, and acclimation and stocking of crab instars in hapa nets and shelters.

In TMS, they learned feed preparation. They also harvested crab instars from hatchery tanks, and counted, sampled, packed, and transported them to Dumangas Brackishwater Station (DBS) for stocking.

Furthermore, the trainees went to DBS to acquire knowledge on site assessment, selection and pond preparation as well as water and soil quality management in ponds.

"Our department, the Aquaculture Department of SEAFDEC, and BFAR have long been partners in improving the Philippine aquaculture, and your training on Mangrove Crab Nursery and Grow-out Operations is an added testimony of this long-time partnership. The training such



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During the training, SEAFDEC/AQD experts share basic principles on fish nutrition and techniques for formulating, preparing, and evaluating cost-efficient fish diets. Photo by EV Antolino

12 complete training on fish nutrition and feed development

● NYRA ARMADA & RD DIANALA

TWELVE participants from six Southeast Asian countries completed the Training Course on Fish Nutrition and Feed Development, held from 20 to 27 May 2024.

The Government of Japan-Trust Fund funded the participation of eight trainees – one each from Cambodia, Lao PDR, Singapore, Thailand, and four from the Philippines. Another four participants, two each from Brunei Darussalam and the Philippines, were privately funded.

During the training, SEAFDEC/AQD experts shared basic principles on fish nutrition and techniques for formulating, preparing, and evaluating cost-efficient fish diets.

Through practical sessions, trainees engaged in feed preparation and pilot feed milling. They also gained experience in feed evaluation, processing and use of alternative feed ingredients, and economic analysis of feed production.

When asked about their takeaways, Man Yin Teo, a trainee from the Singapore Food Agency, remarked how the training not only taught them feed mill operations, but also emphasized the need for quality assurance of the raw materials and the feeds produced.

Grace Abdala, a trainee from the Philippines who works as an aquaculturist of the Bureau of Fisheries and Aquatic Resources (BFAR), also remarked that the special focus on alternative feed ingredients is timely due to the “increasing

fish production effort from aquaculture and the declining supply of fish meal.”

“To make aquaculture sustainable in the long run, we should focus on nutrition as feeds are considered the highest recurrent cost in aquaculture, often ranging from 30 to 60 percent depending on the intensity of the operation,” said SEAFDEC/AQD Chief Dan Baliao during the training course’s closing ceremony.

Hoping that the trainees have gained substantial knowledge, Chief Baliao added that the training is a step in the right direction towards solving problems in aquaculture feeds and nutrition. [a](#)



Through practical sessions, trainees engage in feed preparation and pilot feed milling, feed evaluation, processing and use of alternative feed ingredients, and economic analysis of feed production. Photo by EV Antolino