

Tilapia harvested in August from lake cages at SEAFDEC/AQD's Binangonan Freshwater Station, which are the products of an ongoing study on tilapia and prawn polyculture in tanks and lake-based cages. [PHOTO BY M RUTAQUIO]



aqdmatters

July-August 2021

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

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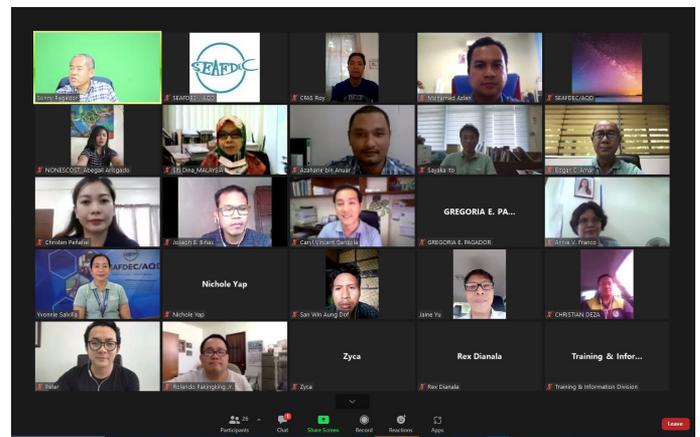
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Successful Marfish online training offers 2nd session

DUE to the success and the positive feedback from trainees of the first online offering of the Marine Fish Hatchery training course last June, SEAFDEC/AQD conducted another session from 19 July to 3 Aug. 2021.

The second session of the training course had 13 participants from SEAFDEC member countries, namely: Brunei Darussalam, Cambodia, Malaysia, Myanmar, and the Philippines. The Government of Japan (GOJ) Trust Fund sponsored 11 of the participants coming from these countries.

The 16-day online training course used an interactive online learning platform that enabled the participants to access pre-recorded lecture videos on broodstock management, larval rearing, hatchery design and construction, natural



A screenshot of the participants and AQD resource persons of the second session of the Marine Fish Hatchery Online Training Course

food culture, nutrition, and health management, among others. Through this platform, the trainees were also able to interact with SEAFDEC/AQD resource persons and fellow participants through the discussion board.

"We have designed the modules such that what we deliver during face-to-face

training is what you also get in the online training course," said Dr. Edgar Amar, head of Training and Information Division.

Dr. Amar also added that the Training Section prepared the practical videos so that the participants will have a feel of the live face-to-face practical sessions.

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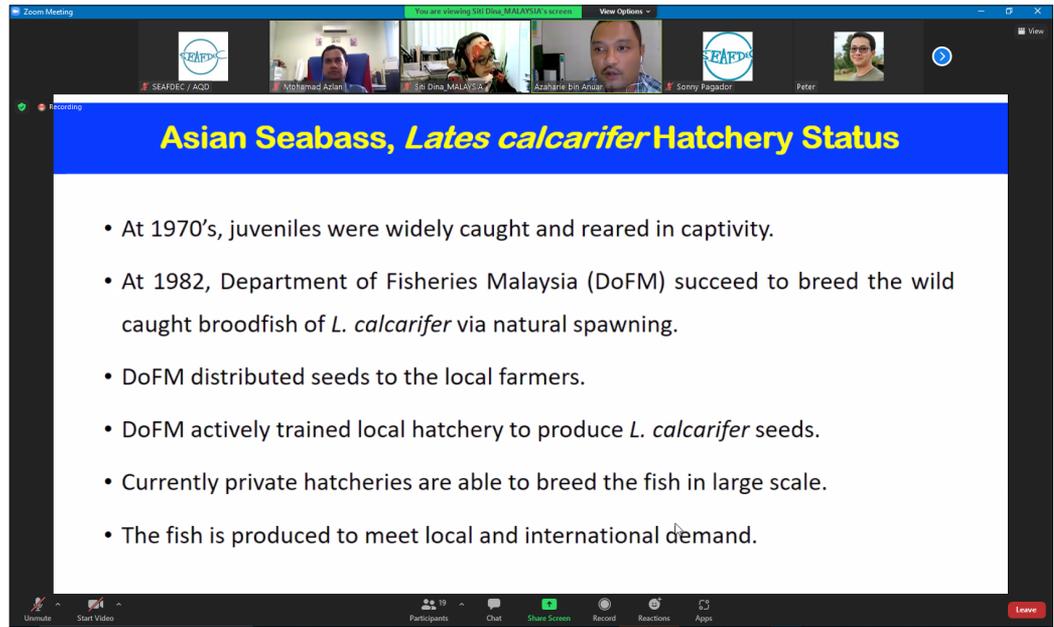
www.seafdec.org.ph

"I really enjoyed this Marine Fish Hatchery Online Training Course. It was well planned and laid out in terms of the accessibility of viewing the videos, learning materials, suggested references using Canvas," said a trainee from the Philippines (who requested to keep her name and affiliation private) during the closing program on 3 Aug. 2021.

On the other hand, San Win Aung, an assistant fishery officer and a trainee from Myanmar, said that he has gained knowledge and new techniques from the training, which he will then share to his colleagues for the improvement of their hatchery operations.

In his message to the trainees during the Closing Program, Chief Dan Baliao said that SEAFDEC/AQD felt a sense of fulfillment in catering to the thirst for aquaculture knowledge of the participants.

"This training course is being conducted as part of our techno-transfer effort where various aquaculture



A screenshot of a group report of the trainees on the marine fish hatchery status in Malaysia

entrepreneurs like fisherfolk and aquaculture technicians are enticed to learn and discuss different topics about running aquaculture business here and abroad," said Chief Baliao.

He also explained that the training courses also served as a venue where stakeholders can listen to lectures regarding aquaculture innovations.

Through these training courses, the participants also get the chance to consult and share with SEAFDEC/AQD researchers and scientists involved in various disciplines and economically viable aquaculture commodities.

The Chief also thanked the Government of Japan for its continued support to the training course.

"Let us acknowledge the financial support of the Government of Japan that made this training feasible despite the pandemic. In the past 48 years of SEAFDEC/AQD's existence, the support of GOJ through its trust fund had been very rewarding and gratifying," he said.

— RH LEDESMA

AQD, BFAR discuss WWF project on seaweeds

SEAFDEC/AQD met with the Bureau of Fisheries and Aquatic Resources to discuss the ongoing project with World Wildlife Fund "Blue Horizon: Ocean Relief through Seaweed Aquaculture" last 22 July 2021.

Scientists Dr. Edgar Amar and Dr. Leobert de la Peña, SEAFDEC/AQD's focal persons for this project, attended the meeting with the institution's seaweed team. Since the project is still in its early stage, the meeting participants discussed the project design, which will be carried out by mid to late 2022.



Photo by JF Aldon

The project aims to strengthen and develop seaweed value chains that can drive environmental sustainability, poverty alleviation, livelihood resiliency, and shared

prosperity to people living in coastal areas of the Philippines.

The shortlisted target sites in the Philippines include Balabac in Southern Palawan, Malampaya and Taytay in

Northeastern Palawan, and Zamboanga in Mindanao

A similar study under the project is also being conducted in Viet Nam.

— JM DE LA CRUZ/
RH LEDESMA

Researcher wins 3rd place in photo contest



Ms. Irene Legaspi with the giant white marlin caught by fishers in Antique, Philippines, on 22 June 2021. Photo by E Garibay

MS. IRENE LEGASPI, an associate researcher of SEAFDEC/AQD, won third place in the photo contest “Research despite COVID” during the 44th Larval Fish Conference held virtually on 24–25 June 2021.

Ms. Legaspi’s winning capture, which bested 19 other entries, is her photo with a giant white marlin that she and her team encountered while conducting their research monitoring for a tuna study in Antique, Philippines.

The giant white marlin was trapped in the *otoshi-ami* (a set-net, a kind of stationary fishing gear) of a fishers’ cooperative in Antique, which is also the target source of the live tuna samples of Ms. Legaspi’s research study.

Three other SEAFDEC/AQD researchers, namely Ms. Annie Franco, Ms. Mary Anne Mandario, and Mr. Peter Palma, also attended the conference, an annual event sponsored by the Early Life History Section of the American Fisheries Society.

Sessions this year included topics such as climate change, commercial and ornamental aquaculture, form, function and development, larval assemblages, and recruitment processes. **a**

— RH LEDESMA

FishWorld, Nat'l Museum dissect ocean sunfish



Photo by HS Pitogo

SEAFDEC/AQD’s FishWorld assisted the Philippine National Museum in dissecting a beached ocean sunfish (*Mola mola*) last 6 July 2021 at Oton, Iloilo, Philippines. The sunfish was found washed ashore but did not exhibit signs of external injury. The skeleton will be preserved and displayed by the museum. **a**

Confab seeks to address global marine challenges

THE Philippine Association of Marine Science organized the “16th National Symposium in Marine Science” to discuss possible solutions to global marine challenges by applying the results of marine science research in policymaking and governance.

SEAFDEC/AQD researchers participated in the event, where they presented the results of their research activities. Scientist Dr. Jon Altamirano, Senior Technical Assistant Ms. Roselyn Baylon, and Technical Assistant Ms. Quenie Montinola discussed the improved seed production and hatchery techniques for sea cucumbers, the biology and behavior of hatchery-reared sandfish juveniles, and the importance of citizen science during the COVID-19 pandemic, respectively.

Caraga State University in Butuan City, Philippines hosted the online conference held on 22–24 July 2021. **a**

— RH LEDESMA

A screenshot of a video presentation slide. The slide has a blue background with white and yellow text. At the top left is the SEAFDEC logo and the text "AQUACULTURE DEPARTMENT Southeast Asian Fisheries Development Center www.seafdec.org.ph". The main title is "Practical aquaculture hatchery enhancements for developing countries: The case of a small-scale sea cucumber hatchery". Below the title is a small video player showing a man speaking. To the right of the video player is the text "Jon P. Altamirano*, Jesus Rodriguez, Jr., Roselyn Noran-Baylon". At the bottom right is the logo for "PAMS 16".

A screenshot of a video presentation slide. The slide has a green background with white and yellow text. At the top right is a small video player showing a woman speaking. The main title is "Do size, age and experience really matter on the chemosensory ability and decision making of hatchery-reared sandfish *Holothuria scabra* juveniles?". Below the title is the text "Roselyn D. Noran*, Harold M. Monteclaro, Jon P. Altamirano, Sheila Mae S. de Leon, Ruth U. Gamboa". Below that is the email "Email: roselyn.noran@seafdec.org.ph". At the bottom is the text "12:15:00 PM | 23 JULY 2021 | VIA ZOOM".

A screenshot of a video presentation slide. The slide has a white background with blue and black text. The main title is "CITIZEN SCIENCE TO THE RESCUE AMIDST COVID-19 PANDEMIC RESTRICTIONS". Below the title is the text "Raissa Joy G. Castel, Quenie S. Montinola, Roselyn Noran-Baylon, Jon P. Altamirano". Below that is the text "16th National Symposium on Marine Science July 22-24, 2021". At the bottom left are the logos for SEAFDEC and ACIAR. At the bottom right is a small video player showing a woman speaking.

Online internships, the new norm

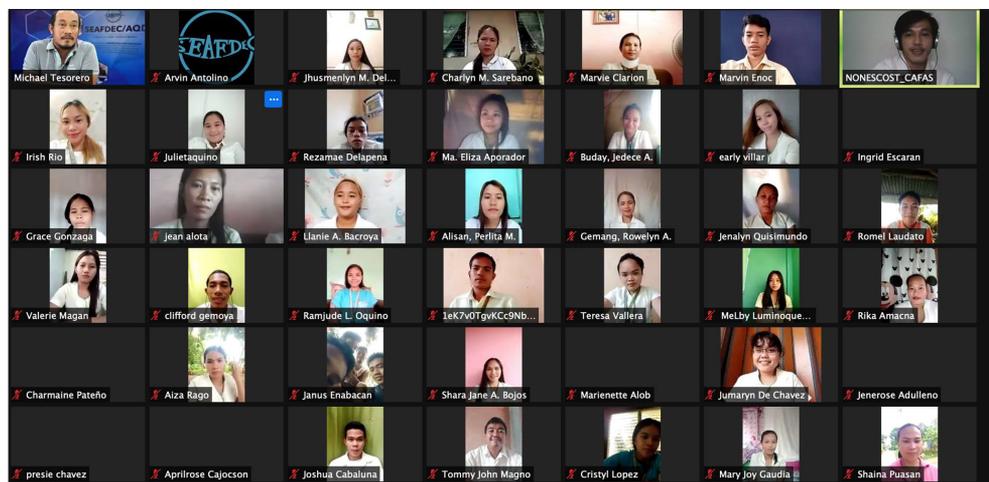
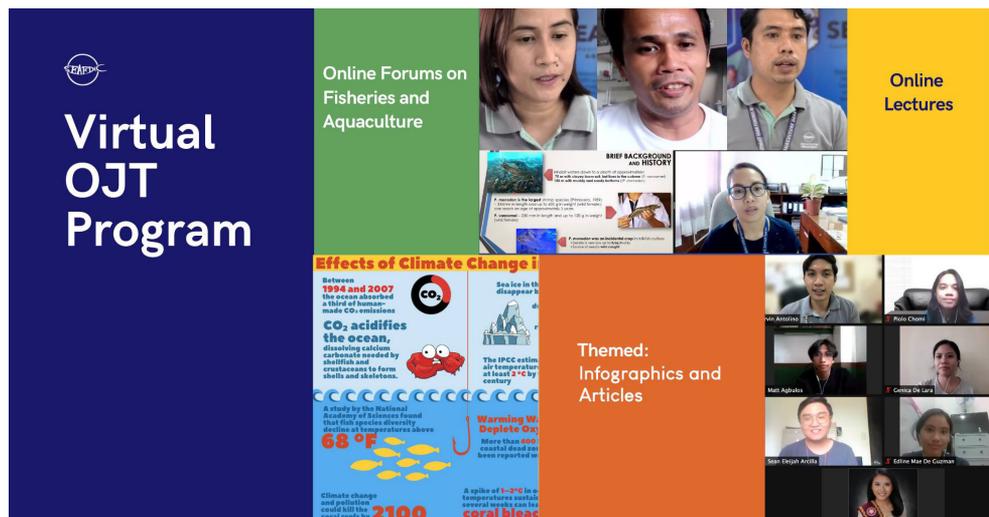
DESPITE the pandemic, SEAFDEC/AQD catered to requests from academic institutions to accommodate their students for on-the-job training and internships. To make this possible, the Training Section provided them with a virtual arrangement for the first time.

Experts from SEAFDEC/AQD delivered lectures to fisheries students of the Northern Negros State College of Science and Technology (NONESCOST) to support the college's virtual on-the-job training program. Sixteen topics on culture technologies, fish health management, and nutrition for shrimps, mangrove crab, and marine fish were covered between 23 and 29 June 2021.

In addition, ten BS Biology students from the Pamantasan ng Lungsod ng Maynila (University of the City of Manila) had their virtual on-the-job training at SEAFDEC/AQD. The students likewise attended virtual lectures on aquaculture topics such as broodstock management of marine fish, biology and ecology of shrimp, biology and identification of mangrove crab, biology and reproduction of giant freshwater prawn, micropropagation of seaweeds, and diseases and health management of aquaculture species.

Experts conducted the lectures via Zoom between 7 and 26 July 2021. The students were also tasked to prepare infographics based on what they learned from the lectures.

Moreover, the University of the Philippines Los Baños (UPLB) invited SEAFDEC/AQD to share its knowledge and experiences in aquaculture technologies with agricultural and biosystems engineering students through a virtual internship program. Last 2 to 3 Aug. 2021, Engr. John Aldrin Tugo and Technical



(TOP-BOTTOM) Screenshots of interns from the Pamantasan ng Lungsod ng Maynila, University of the Philippines Los Baños and Northern Negros State College of Science and Technology listening to lectures of AQD experts via Zoom

Assistant Mr. Michael Tesorero conducted a lecture on hatchery construction and design and cage culture of high-value marine fish, respectively.

Lastly, SEAFDEC/AQD also catered to four BS

Development Communication student trainees from West Visayas State University who began their on-the-job training on 23 August 2021.

They are set to complete 200 hours of practicum by October

at the SEAFDEC/AQD's Development Communication Section where they attended lectures and continue to assist in science communication projects. [a](#)

— RH LEDESMA

Info squad infiltrates online farmer groups, delivers answers

KEYBOARD warriors were unleashed to Facebook in July by an aquaculture development center, not to spread negativity nor troll the comment section, but to battle the lack of information among online fish farmer groups.

Ten on-the-job trainees (OJTs) at the Aquaculture Department of the Southeast Asian Fisheries Development Center (SEAFDEC/AQD) scoured for questions within fish farmer communities on Facebook and researched for answers using the organization's vast repository of digitized publications.

"Fish farmers have formed large online communities on Facebook where they ask questions, share experiences, and sell their products. We wanted to try reaching them there with quality information," said Rex Delsar Dianala, officer-in-charge of SEAFDEC/AQD's Development Communication Section tasked with producing and disseminating information materials.

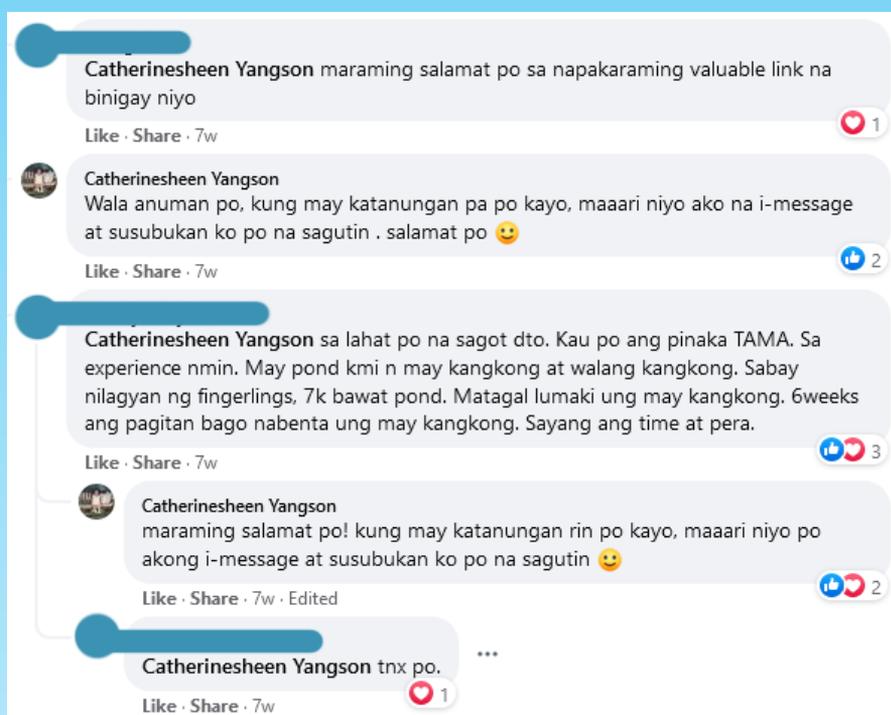
The OJTs, all biology majors of the Pamantasan ng Lungsod ng Maynila (University of the City of Manila) also known as PLM, focused on Philippine farmer groups such as "Tilapia Farming Philippines" which as of writing has 43,800 members, "Freshwater Fish Farming in the Philippines" (38,600 members), "Freshwater prawn {ulang} philippines" (8,200 members), and "Tilapia and Hito Farming" (8,000 members).

Between 5 and 29 July 2021, the OJTs-cum-keyboard-warriors provided at least 320 farmers with answers complete with links to reliable references and downloads from SEAFDEC/AQD, the Food and Agriculture Organization (FAO), and the Bureau of Fisheries and Aquatic Resources (BFAR), and others.

Quality answers, grateful farmers

"We were astounded by the quality of the answers given by the students from PLM," remarked Edgar Vincent Antolino, the SEAFDEC/AQD training assistant who supervised the OJTs. "They were able to synthesize, customize, and translate answers to Filipino so the farmers can better understand."

For example, a member posted in one Facebook group asking how many tilapia fingerlings he could stock in his 500 square meter pond.



Grateful comments from fish farmers in response to information posted by SEAFDEC/AQD on-the-job trainee (OJT), Catherine Sheen Yangson from the Pamantasan ng Lungsod ng Maynila (PLM). Yangson and other OJTs from PLM responded to at least 320 fish farmer queries in aquaculture groups on Facebook.

While one co-member was quick to respond with an offer to supply canvas lining, another commenter outrageously advised to stock 100 thousand and proceeded to state that he had available fingerlings to sell.

Other more helpful members said he should stock "5 pcs per/sq. meter", another says "2k", another briefly comments "500 x 5."

Meanwhile, Genica de Lara, one of the OJTs commissioned by SEAFDEC/AQD to answer questions, comprehensively explains, in Filipino, the difference between the extensive, semi-intensive, and intensive systems and computes the proper number of fish for his 500 square meter pond.

"Extensive: 500–1000 fingerlings, semi-intensive: 1,500–2,000 fingerlings, intensive: 2,500–5,000 fingerlings," she wrote after emphasizing the importance of proper pond preparation, feeding, and water quality. Then, she gives links to two freely downloadable tilapia manuals published by SEAFDEC/AQD.

One member comments in Filipino on de Lara's answer, "This is good, coming straight from SEAFDEC in Iloilo."

In a separate post, another user asked whether tilapia grow significantly faster in either mud or concrete ponds.

Matt Tua Agbulos, another OJT from PLM, explained to him in detail three advantages in using earthen ponds and four advantages of concrete ponds, all in Filipino, and provided three links for additional information.

Continued on next page...

Another commenter, seeming to mistake Agbulos as an experienced farmer, remarked in Filipino, “That is the person who cares for others who also wants to take care of tilapia..for both to live and have livelihood..not stingy to share knowledge.”

Searching for answers

Agbulos, like the other OJTs who were all working remotely, are actually just hardworking students that know where to look for answers.

“Researching thoroughly is a must since I only know little about aquaculture. So, by reading e-books, journal articles, and posts from credible and reliable sources, I gained new information. Looking for those sources and cross-checking them though are not easy,” shared Louise Lane Ballesteros, another OJT.

Edline Mae De Guzman, also an OJT, also shared that finding answers online is not so straightforward. “Even if the internet is a rich source of information, there is still a risk of misinformation. Some articles posted lack scientific evidence and could cause problems instead of providing effective mitigation to fish farmers,” she said.

Still, another OJT, Ysi Lorence Dig, finds it easier within reliable sources. “With the help of various publications such as technical manuals and field guides, visual guides, and videos from the SEAFDEC/AQD Institutional Repository, access and exchange of information was relatively uncomplicated,” he said.

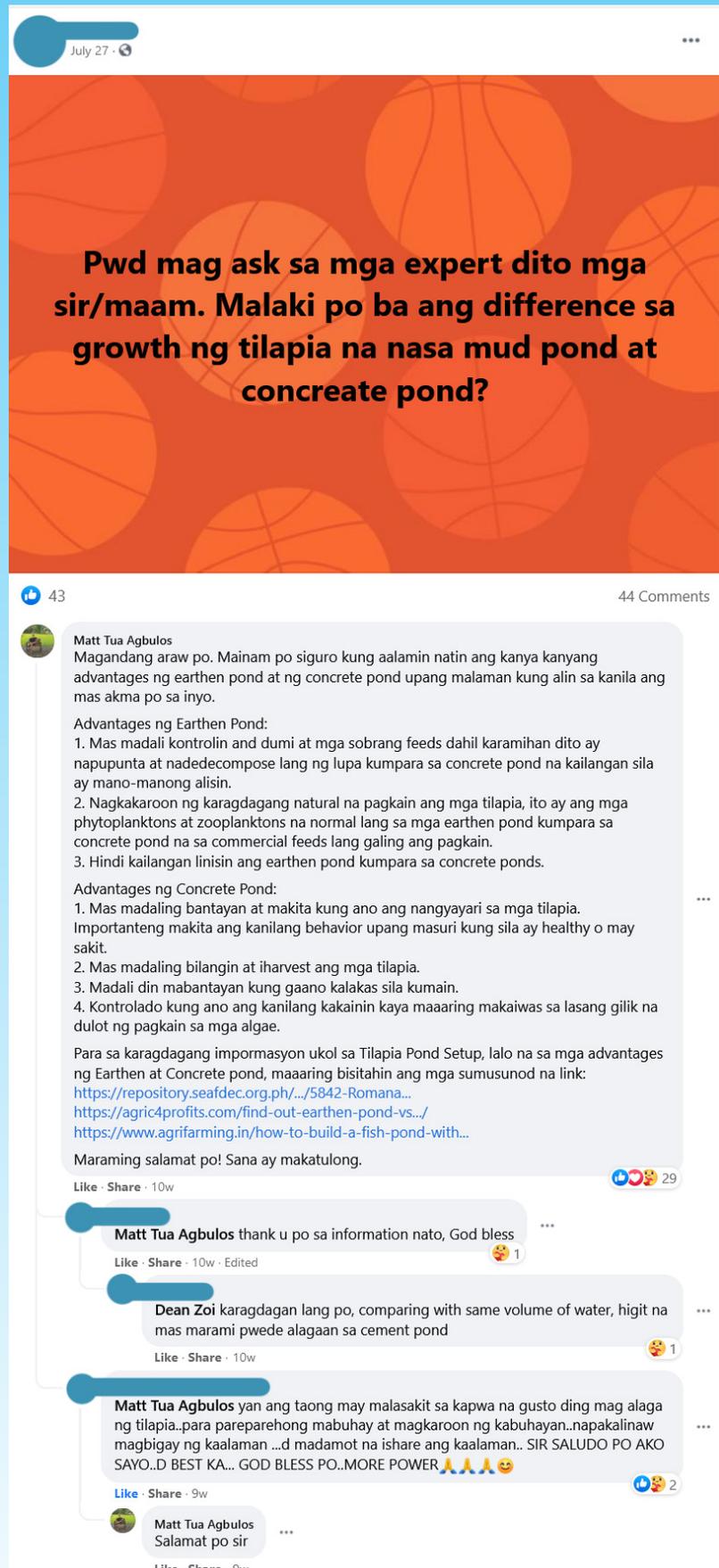
Worthwhile, fulfilling

Even as she enjoyed learning herself as she searched for answers, Ballesteros said there were days when answers were tough to find and took a lot of time. “Yet because of the words of thank you’s of those fish farmers I’ve helped with my answers makes it worthwhile,” she added.

“Not only do we learn valuable information ourselves, but we get to share it with the people who can actually make use of the information by applying them,” related Agbulos. “I always looked forward to the responses I would receive from the local fish farmers as they were very grateful.”

“Until now, even though our OJT is over, I still try to answer farmers’ queries as it really is fulfilling,” he added. **a**

— RD DIANALA



A screenshot of the answer a SEAFDEC/AQD on-the-job trainee provided to a farmer's query, as well as reactions from the readers, all happening within a Facebook group of fish farmers.

2nd session of aquaculture technologies training starts

THE lack of a skilled workforce to manage facilities has always been a challenge in aquaculture. To address this, SEAFDEC/AQD organized a second session of the Training Course on Manpower Development on Aquaculture Technologies that started on 5 July 2021.

With the aim to train fisheries graduates to become capable and experienced aquaculture technicians, the four participants from the Bicol Region and Mindanao will have intensive hands-on and immersive training until 5 Oct. 2021 to enhance their capabilities and broaden their experiences in handling multi-species hatchery operations. The lectures and practical sessions will be held in SEAFDEC/AQD facilities in Tigbauan and Dumangas in Iloilo, and at Nueva Valencia

in Guimaras. Moreover, at the end of the training course, the participants will have an individual oral reporting and oral examination on hatchery and grow-out procedures.

Upon graduation after the three-month training, the participants are expected to be part of the team that will jumpstart the government-legislated hatcheries in their respective localities.

“SEAFDEC/AQD is excited to continue its work on empowering young people and harness their full potential to become competent aquaculture technicians,” said SEAFDEC/AQD Chief Dan Baliao.

The Chief assured that SEAFDEC/AQD secured all necessary permits for the participants' travel. They had undergone quarantine and RT-PCR testing before



The participants of the Manpower Development on Aquaculture Technologies training course during their courtesy call with SEAFDEC/AQD Chief Dan Baliao. Photo by S Seposo



Trainees during their practical activity at SEAFDEC/AQD's Shrimp Hatchery (left photo) and cannulation of grouper at the Marine Fish Hatchery (right photo). Photos by L Lipat

departure from Metro Manila, the current travel hub, and upon arrival in Iloilo.

This program, conducted in partnership with the Department of Agriculture

– Bureau of Fisheries and Aquatic Resources (DA-BFAR), is part of SEAFDEC/AQD's thrust of addressing urgent issues in Philippine aquaculture. **a**

— JM DE LA CRUZ

IN PHOTOS

SEAFDEC/AQD harvested giant freshwater prawn postlarvae at its new Multi-Species Freshwater Hatchery in Tigbauan, Iloilo last 19 July 2021. The postlarvae were stocked in a pond (4 ppt salinity) at the Dumangas Brackishwater Station for a study on tilapia-prawn polyculture in a biofloc system. The prawn, *Macrobrachium rosenbergii*, can grow satisfactorily at a salinity of 0–10 ppt. **a**



Photos courtesy of E Estante



SEAFDEC/AQD, PENRO Guimaras release sea turtles

KATHY, Remy, and Sandy – sea turtles that stayed at SEAFDEC/AQD’s Igang Marine Station (IMS) for rehabilitation – were released back to the wild last 4 Aug. 2021 with the help of Guimaras’ Provincial Environment and Natural Resource Office (PENRO Guimaras). The three sea turtles were found trapped in a fish corral but were too weak to survive in the wild, thus, were taken care of at IMS until they were fit for release. In 2016, SEAFDEC/AQD and PENRO Guimaras signed an agreement to protect and conserve sea turtles in Guimaras Island. Conservation of sea turtles is important since some of the species are now endangered or face a high risk of extinction. 🐢



Photos by JF ALDON



— JM DE LA CRUZ/HS PITOGO

Scientist joins int’l conference on fisheries and aquaculture

SCIENTIST Dr. Maria Rowena Eguia of SEAFDEC/AQD participated in the “8th International Conference on Fisheries and Aquaculture” conducted online on 19–20 Aug. 2021.

The results of her ongoing study on tilapia-prawn co-culture titled, “Assessment of Tilapia-Freshwater Prawn Co-culture Schemes for Increased Farm Production,” was presented. The study focuses on the technical viability of multi-species freshwater aquaculture production in tanks and lake-based cages. She also served as chair of two conference sessions.

The two-day conference had keynote and plenary presentations on fisheries and aquaculture topics such as nutrition, shrimp diseases, and the status of aquaculture in selected countries. There was also a workshop for early career researchers on how to publish papers for scientific publication. 🐟

— RH LEDESMA

Dr. Maria Rowena Eguia presents her study on tilapia-freshwater prawn co-culture at the “8th International Conference on Fisheries and Aquaculture” conducted online on 19–20 Aug. 2021



aqd matters

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