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SEAFDEC welcomes new Secretary-General and Chief of TD



On 2 October 2023, SEAFDEC welcomed *Dr. Suttinee Limthammahisorn* as its new Secretary-General and Chief of the Training Department, succeeding *Ms. Malinee Smithrithee* whose term ended on 15 September 2023.

Director of the Coastal Aquaculture Research and Development Division of the Department of Fisheries (DOF) of Thailand. Preceding that, she served as a director of several divisions of the DOF Thailand with the responsibilities of dealing with issues on fisheries management and combating IUU fishing including overseas fisheries and control of transshipment at sea. *Dr. Suttinee* obtained her B.S. in Fisheries from Kasetsart University, and subsequently her M.S. in Technology of Environmental Management from Mahidol University in Thailand. She obtained her Ph.D. in Fisheries and Allied Aquacultures from Auburn University, Alabama, USA.

EDITORIAL

In the third quarter of 2023, SEAFDEC conducted various notable events and one of them was the “Third Regional Technical Consultation on Fishery Statistics and Information in Southeast Asia” where the revision of the Regional Framework for Fishery Statistics of Southeast Asia was finalized. The revised Regional Framework will be further submitted to the SEAFDEC Council for approval, and subsequently to the ASEAN mechanism for notation. Another remarkable event was the “Webinar on Aquatic Genetic Resources for Food and Agriculture” which presented the status and challenges in genetic management in global aquaculture as well as updates on the implementation of the FAO Global Plan of Action for the Conservation, Sustainable Use and Development of Aquatic Genetic Resources for Food and Aquaculture.

In continuing the close cooperation and collaboration with regional/international organizations such as the ASEAN Secretariat, FAO, and IMCS Network to address the priority fisheries issues, SEAFDEC participated in the 13ASA, 15AFCE, and 31ASWGFi to report the progress of the implementation

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Prior to her appointment at SEAFDEC, *Dr. Suttinee* was the

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SEAFDEC organizes the Third Regional Technical Consultation on Fishery and Statistics and Information



The SEAFDEC Secretariat organized the “Third Regional Technical Consultation on Fishery Statistics and Information in Southeast Asia” on 22–24 August 2023 in Chiang Mai, Thailand. The Consultation was attended by

representatives from all ASEAN Member States (AMSs), representative from the Food and Agriculture Organization of the United Nations (FAO), and officers of the SEAFDEC Secretariat and Training

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EDITORIAL

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of several policy frameworks under the ASEAN cooperation in fisheries as well as endorsed the key findings of the 2021 baseline information for monitoring and evaluation of the RES&POA-2030. SEAFDEC also took part in the 19th Session of the COFI Sub-committee on Fish Trade to provide updates on SEAFDEC activities aimed at supporting the AMSs in addressing global fish trade-related issues. In addition, SEAFDEC also participated in the 7th Global Fisheries Enforcement Training Workshop to present the expanding networking and cooperation at regional and international levels for combating IUU fishing in Southeast Asia.

SEAFDEC also sustained the conduct of several training and workshops including the topics on larval fish and egg identification, Google Earth Engine and oceanographic data visualization, artificial reefs development program, marine fish hatchery, eACDS application, sustainable fishery resource management tools, field guidelines for glass eel species identification, and support for small-scale fisheries.

Another culminating event of this quarter was the “SEAFDEC/AQD Golden Anniversary” celebration which showcased the remarkable five decades of the Department’s achievements in aquaculture research and development as well as the groundbreaking research initiatives, innovative technologies, and capacity-building programs that foster knowledge exchange and future collaboration. AQD also launched in this quarter six new aquaculture extension manuals, covering topics on the hatchery production of sea cucumber, nursery and grow-out of rabbitfish, culture of natural larval food for freshwater species, tiger shrimp hatchery operations, and nursery and grow-out of pompano in brackishwater ponds and marine cages.

At the end of the quarter, SEAFDEC bid a farewell to *Ms. Malinee Smithrithee*, and welcomed *Dr. Suttinee Limthammahorsorn* as the new Secretary-General and Chief of the Training Department starting October 2023 until September 2025. ❏

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SEAFDEC welcomes new Secretary-General and Chief of TD

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The nomination of *Dr. Suttinee* by the DOF Thailand was unanimously approved by the SEAFDEC Council, and her term will run for the period of two years until 30 September 2025. Her background in the development and management of fisheries and aquaculture as well as her involvement in regional

initiatives under the ASEAN fora would be instrumental in leading the operation of SEAFDEC and taking up the directives of the SEAFDEC Council toward sustainable development of the fisheries in the Southeast Asian region.



SEAFDEC organized the Third Regional Technical Consultation on Fishery and Statistics and Information

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Department. The Consultation was opened and chaired by the SEAFDEC Deputy Secretary-General, *Dr. Tomoko Nakazato*. This Consultation is the third of the series of consultations intended to finalize the draft revision of the Regional Framework for Fishery Statistics of Southeast Asia as well as the Questionnaires.

During the Consultation, the AMSs made presentations on their respective countries’ fishery statistics and tested the submission of statistics based on the draft revised Regional Framework and Questionnaires. Subsequently, the Consultation discussed and agreed on the final draft of the Regional Framework, Questionnaires, and streamlined process for submission of fishery statistics Questionnaires to SEAFDEC and FAO. The final draft of the revised Regional

Framework will be further submitted to the 56th Meeting of SEAFDEC Council for approval, and subsequently to the 32nd Meeting of the ASWGFi for notation.

Moreover, recommendations were also provided during the Consultation for the improvement of the existing fishery statistics database as well as the database for the new Regional Framework. the Consultation also noted the request made by the FAO/FIRMS-Global Tuna Atlas (GTA) for SEAFDEC to consider sharing data from regional statistics on tuna and other species to FIRMS-GTA which would be useful in fulfilling the gap in data and information in the FIRMS-GTA Database and will also support the global scale monitoring of fisheries targeting tunas and tuna-like species.



Developments in tiger shrimp, crustacean research showcased in conference

SEAFDEC/AQD featured its flagship program to revive the giant tiger shrimp (*Penaeus monodon*) industry at the 14th Philippine Shrimp Congress, which was held from 20 to 22 September 2023 in Bacolod City, Philippines. The AQD shrimp commodity leader, *Ms. Erish Estante-Superio*, spoke on the second day of the Congress to give updates on the progress of the “Oplan Balik Sugpo” (Revival of Giant Tiger Shrimp) program and other activities to develop mangrove crab, giant freshwater prawn, and slipper lobster culture technologies.



In an exhibition held alongside the event, AQD displayed live tiger shrimp that were recently harvested from its Dumangas Brackishwater Station. A miniature model of the new shrimp broodstock facility in Iloilo was also on display to represent AQD efforts to develop disease-free, farm-sourced broodstock. Moreover, the algae paste product of AQD, PrimoAlga, was also featured in the exhibit to promote it as an

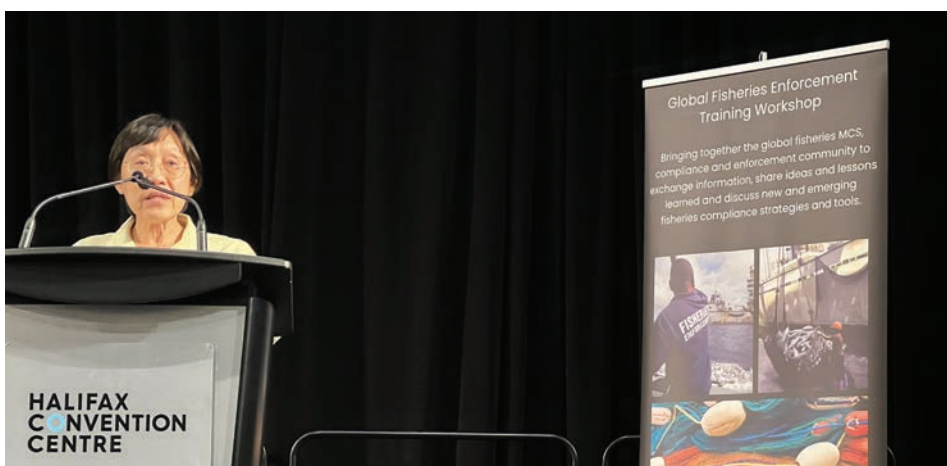
alternative to liquid algal cultures. Algae paste can be a backup starter in case of crashes in algal cultures, or it can be directly fed to zooplankton and larvae.

A mobile bookstore was also set up in the exhibition to disseminate aquaculture manuals to the shrimp farmers, government personnel, and other stakeholders that were attending the Congress.

The three-day event drew nearly a thousand participants from various industry players in the shrimp value chain. The Congress included lectures on innovative culture methods, open markets, strengthening network mechanisms among stakeholders, and other prospects for sustaining the shrimp industry of the Philippines. ✦

SEAFDEC participates 7th Global Fisheries Enforcement Training Workshop

The SEAFDEC Secretary-General, *Ms. Malinee Smithrithee*, and the SEAFDEC Secretariat Policy and Program Coordinator, *Dr. Worawit Wanchana*, participated in the “7th Global Fisheries Enforcement Training Workshop (GFETW)” from 30 July to 4 August 2023 in Halifax, Canada.



Organized by the International Monitoring Control and Surveillance (IMCS) Network, the Training Workshop was attended by international experts, maritime security personnel, military personnel, coastguards, as well as national and regional fisheries officers representing administrations and organizations committed to fisheries compliance and enforcement as well as fighting illegal, unreported and unregulated (IUU fishing). With the theme “Moving from Words to Action – Innovative Collaborative Partnership to

Combat IUU Fishing,” the participants engaged in discussions on addressing key issues and challenges in fisheries MCS.

During the 7th GFETW, *Ms. Malinee* emphasized in her presentation the collaborative efforts of SEAFDEC Member Countries in combatting IUU fishing. She also underscored the regional

commitment to fostering sustainable fisheries practices. Additionally, *Dr. Worawit* delivered a presentation titled “Expanding Networking and Cooperation at Regional and International Levels for Combating IUU Fishing in Southeast Asia.” He also played an active role in a panel discussion themed “MCS for Coastal and Community Fisheries.” ✦

DEPARTMENTAL ACTIVITIES

SEAFDEC takes part in the 19th Session of the COFI Sub-Committee on Fish Trade



The SEAFDEC Secretary-General, *Ms. Malinee Smithrithee*, Policy and Program Coordinator, *Dr. Worawit Wanchana*, and Senior Policy Officer, *Ms. Pattaratjit Kaewnuratchadasorn*, attended the 19th Session of the Sub-Committee on Fish Trade (19COFI:FT), which was organized on 11–15 September 2023 in Bergen, Norway at the kind invitation of the Norwegian Government. The 19COFI:FT was participated by the delegates from FAO members, representatives from the United Nations and specialized organizations, and

observers from intergovernmental organizations and international non-governmental organizations including SEAFDEC.

The discussions at the 19COFI:FT encompassed comprehensive international issues related to fish trade that bridged topics including food safety in connection with market access for aquatic products, trade and market access considerations for small-scale fisheries, fight against illegal, unreported and unregulated (IUU) fishing, implementation of Port States Measures (PSM), traceability, catch documentation scheme (CDS) as well as biodiversity conservation and international trade. The 19COFI:FT also explored recent agreements and international instruments pertaining to trade, such as WTO Fisheries Subsidies, Kunming-Montreal Global Biodiversity Framework, Agreement under the United Nations Convention on the Law of the Sea

on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ Treaty), FAO Guidelines for Sustainable Aquaculture, FAO Voluntary Guidelines for Transshipment, among others.

During the 19COFI:FT, SEAFDEC expressed its commitment and provided updates on its activities aimed at supporting the ASEAN Member States (AMSs) in addressing global fish trade-related issues, notably combatting IUU fishing and implementing regional capacity-building programs on fish stock assessment and the PSM Agreement, among others. Furthermore, SEAFDEC emphasized its dedication to working closely with FAO and other international organizations to assist the AMSs in achieving their objectives for the sustainable utilization of fishery resources and the well-being of the people in Southeast Asia. ❖

DOF Viet Nam, SEAFDEC strengthen cooperation to address regional challenges in the fisheries sector



The Secretary-General of SEAFDEC, *Ms. Malinee Smithrithee*, Policy and Program Coordinator, *Dr. Worawit Wanchana*, and Project Planning and Management Division Head of SEAFDEC Training Department, *Mr. Isara Chanrachkij*, paid a courtesy visit to the Director General of the Department of Fisheries (DOF) of Viet Nam and SEAFDEC Council Director for Viet Nam, *Dr. Tran Dinh Luan*; Head

of Science, Technology and International Cooperation and Alternate Council Director and National Coordinator of SEAFDEC for Viet Nam, *Mrs. Nguyen Thi Phoung Dung*; Official of Science, Technology and International Cooperation and SEAFDEC Alternate National Coordinator, *Mrs. Nguyen Thi Hong Nhung*; as well as other senior officials of DOF. The courtesy visit was aimed at strengthening the collaboration

between DOF and SEAFDEC to advance sustainable fisheries practices and develop a resilient fisheries sector in Viet Nam.

During the meeting on 5 July 2023 in Hanoi, DOF and SEAFDEC discussed on joint research programs, capacity-building initiatives, and knowledge-sharing platforms. The DOF requested technical support from SEAFDEC in combating illegal fishing and carrying out a fisheries resources survey in Viet Nam waters in 2025 by utilizing M.V. SEAFDEC 2. Furthermore, the two parties also discussed the WWF/GEF Seaweed project as well as the need for a standard definition of small-scale fisheries in the Southeast Asian region. ❖

SEAFDEC/TD Joins 2023 Pramong Nomklao Fair



SEAFDEC Training Department (SEAFDEC/TD) joined the Pramong Nomklao Fair with the theme “Wonders of Aquatic World.” The Fair was organized by the Department of Fisheries (DOF), Thailand from 30 June to 9 July 2023 at the Future Park Shopping Mall in Pathumthani Province, Thailand.

During the Fair, TD exhibited a fish passage model wherein fish swim and leap up a series of relatively low steps. A fish passage is a structure built around barriers such as dams in inland bodies of water to facilitate the natural migration of fish. Moreover, TD distributed information materials such as technical publications, brochures, and posters to promote the activities of SEAFDEC.

The Fair has been held annually since 1986 to impart knowledge relevant to fisheries to the public. The income generated from the Fair is donated to the cancer research of the Chulabhorn Research Institute. ❖

SEAFDEC/IFRDMD holds 2023 JTF Semi-Annual Meeting



SEAFDEC/IFRDMD organized the 2023 JTF Semi-Annual Meeting on 15 September 2023 in Palembang, Indonesia to review the two ongoing projects supported by the Japanese Trust Fund. The Meeting was attended by the Deputy Chief of IFRDMD and staff as well as an observer from the Bureau of Public Relations and Foreign Cooperation of the Ministry of Maritime Affairs and Fisheries, Indonesia. At the opening of the Meeting, the Deputy Chief of IFRDMD, *Mr. Tomohito Shimizu* emphasized that 2023 is the fourth year of the projects, and urged IFRDMD to optimize the project activities to achieve the expected outcomes.

The Project Leaders presented the updates on the two projects entitled “Inland Fisheries Management Scheme in Southeast Asia Region” and “Sustainable Utilization of Anguillid Eel in Southeast Asia Region.” For the former Project, the Meeting recommended creating a dashboard for the results of each activity which will be useful for the ASEAN Member States in managing their respective inland fisheries. For the latter Project, the recommendation of the Meeting was to prepare comprehensive information on the highly fluctuating status of glass eels and elvers in the region. The Project targets are expected to be achieved by the end of 2023.



SEAFDEC/IFRDMD participates in Marino Forum 21

The Gender Focal Person of SEAFDEC/IFRDMD, *Ms. Nurwanti*, participated in the “Training on Artisanal Fisheries Measures and Women’s Participation in Fisheries” hosted by Marino Forum 21 at Kochi University and Kyoto Prefectural University in Japan from 22 July to 3 August 2023. The Training was aimed at enhancing the capacity and knowledge of IFRDMD staff on gender in fisheries and building strategic partnerships to improve gender inclusion in small-scale fisheries management and development.

During the Training, *Ms. Nurwanti* had the chance to visit relevant fisheries agencies in Japan including the Fisheries Agency in Tokyo, Japan Fisheries Research and Education Agency (FRA) Headquarters in Kanagawa, Ainan Fishery Cooperative Association in Ehime, Chiba Prefectural Fisheries Research Center Inland Fisheries Laboratory,



General Incorporated Association “Sea, People, Life Network,” Kanagawa Prefectural Fisheries Technology Center Inland Waterways Testing Laboratory, and Toyosu Fish Market. ❖

Training in marine fish hatchery organized for Philippine MAFAR-BARMM



Six trainees from the Ministry of Agriculture, Fisheries, and Agrarian Reform (MAFAR) of the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) in the Philippines recently completed a specialized training course focused on marine fish hatchery operations.

The Training, held at the SEAFDEC/AQD Tigbauan Main Station from 1 to 18 August 2023, aimed at equipping participants with knowledge and skills on marine fish hatchery technologies,

with a focus on high-value species, including milkfish, grouper, snapper, rabbitfish, sea bass, and pompano.

During the 18-day Training, the trainees engaged in lectures and hands-on activities that delved into essential subjects such as the biology of marine fishes, broodstock management, hatchery operations, and nursery culture techniques. By blending theoretical insights with practical activities, the Training sought to provide a holistic understanding of the intricate processes involved in marine fish hatchery operations. Moreover, the trainees visited the Aklan Provincial Freshwater

Tilapia Hatchery located at Aklan Agri-Aqua Demonstration Farm and Training Center as well as observed the milkfish fry harvest at the Aklan Provincial Multi-Species Fish Nursery in Baybay, Makato, Aklan. These visits gave them a chance to witness real-world applications of the knowledge gained during the course.

MAFAR is the regional executive department of BARMM, tasked with overseeing agriculture, fishing, and agrarian reform-related matters. One of the key responsibilities of MAFAR is to promote sustainable agri-fishery growth and development within the Bangsamoro region. ❖



New AQD facilities to boost milkfish, shrimp production



SEAFDEC/AQD inaugurated two new facilities, the Black Tiger Shrimp Broodstock Facility and the Milkfish Larval Rearing Facility, on 3 July 2023 as part of its 50th anniversary celebration.

The shrimp and milkfish industries in the Philippines face challenges such as the lack of hatchery facilities and the shortage of aquaculture seeds. Shrimp



farming worldwide has particularly been affected by disease outbreaks, resulting in significant losses for farmers. The new facilities at AQD aim to address these challenges by providing more disease-free tiger shrimp breeders and high-quality milkfish seeds, thereby supporting the sustainable growth of the aquaculture industry.

The Black Tiger Shrimp Broodstock Facility is estimated to produce 80 million postlarvae annually. It has four 120-ton broodstock tanks with a total holding capacity of 1,440 breeders. It has biosecurity features to prevent the entry of pathogens and help keep shrimp spawners disease-free.

The Milkfish Larval Rearing Facility, on the other hand, is composed of 12 larval rearing and 12 natural food tanks that are estimated to produce an additional 10.8 million to 18 million fry. In 2022 before the tanks were completed, AQD produced 6.6 million milkfish fry. The facility is expected to expand the fry production and capacity of AQD to supply fish farms. ❖

SEAFDEC/AQD Chief reports in NACA 32nd Governing Council Meeting

SEAFDEC/AQD Chief, *Mr. Dan Baliao*, took part in the 32nd Governing Council Meeting of the Network of Aquaculture Centres in Asia-Pacific (NACA), which was held in Chiang Mai, Thailand, on 7–9 August 2023.

On behalf of AQD as the Regional Lead Centre (RLC) in the Philippines, *Mr. Baliao* presented a detailed report

about the accomplishments of the RLC from 2021 to 2022. The AQD Chief highlighted crucial achievements in areas such as broodstock management, hatchery establishment, feed formulation, and capacity building in the region.

During the event, the Governing Council acknowledged the RLC for its role and efforts in fostering

advancements in the aquaculture sector. The Meeting, a platform for collaboration among aquaculture experts, gathered 50 delegates representing 15 member governments and organizations. It was organized in partnership with the Department of Fisheries of Thailand and aimed to chart the course for the future of aquaculture in the region. ❖

Schools, universities flock to Aquaculture Research Talk

Students and educators from various educational institutions in Panay and Mindanao in the Philippines attended the Aquaculture Research Talk organized by SEAFDEC/AQD on 6 July 2023 at its Tigbauan Main Station. Three notable AQD experts shared their experiences in their respective fields of research and engaged the crowd in an open forum. Aside from disseminating research findings, the event hoped to inspire the next generation of aquaculture researchers. One of the speakers, *Dr. Frolan Aya*, shared his 16-year research experience through his talk titled, “From shells to fishes: A continuing love story.” In his lecture, he referred to his research on scallops as an “enduring love story.” The second speaker, *Dr. Rolando Pakingking Jr.*, spoke on

fish vaccination, which he termed his “first love,” in his presentation “Fish Vaccination: A pragmatic health management tool for aquaculture.” He highlighted the concept of vaccination, its significance, characteristics, and types while explaining to the audience how to achieve the optimal effect. Finally, *Mr. Joseph Biñas*, in his lecture “Understanding aquafeed and its production,” gave an overview of formulated aquafeeds and taught the audience their formulation and production methods. During the open forum, the speakers shared tips on finding scholarships and choosing fields of studies for graduate degrees abroad. They also shared the hurdles they faced early in their career and how they overcame them.

The Director of the Japan International Research Center for Agricultural Sciences (JIRCAS) Food Program, *Dr. Kazuo Nakashima*, also spoke on the importance of fisheries research and the significance of international partnerships. *Dr. Nakashima* thanked AQD for helping JIRCAS achieve its goal in developing practical aquaculture technologies that account for the local environmental and socioeconomic conditions.

The Aquaculture Research Talk demonstrates continuing commitment of AQD to information dissemination and nurturing the next generation of aquaculture experts. ❖



SEAFDEC Secretary-General lauds AQD on its 50th Anniversary

With the theme “Fifty years of championing science-based aquaculture technologies” of the 50th Anniversary of SEAFDEC Aquaculture Department (AQD), the weeklong celebration culminated with the Anniversary Program on 7 July 2023 in Iloilo, Philippines. The Secretary-General of SEAFDEC, *Ms. Malinee Smithrithee*, was one of the key speakers at the event. While emphasizing the importance of collaborative efforts among the SEAFDEC Member Countries, *Ms. Malinee* congratulated AQD on its significant milestones in promoting sustainable aquaculture practices in Southeast Asia.

The Anniversary Program brought together distinguished guests from the government, research, and industry



sectors to honor the remarkable five decades of achievements of AQD in aquaculture research and development. The Deputy Secretary-General of SEAFDEC, *Ms. Tomoko Nakazato*, and officials from the SEAFDEC Secretariat and Training Department also joined the event.

The Anniversary Program showcased the groundbreaking research initiatives,

innovative technologies, and capacity-building programs of AQD to foster knowledge exchange and future collaborations. The event concluded with renewed determination to advance aquaculture research and development, reaffirming the commitment of SEAFDEC to the responsible utilization of aquatic resources for the welfare and future generations of the region.



6 aquaculture manuals unveiled in AQD's 30th Book Launching

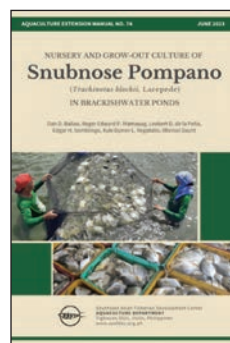
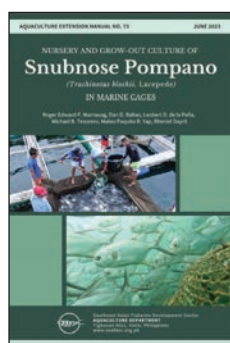
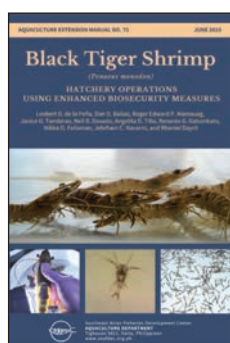
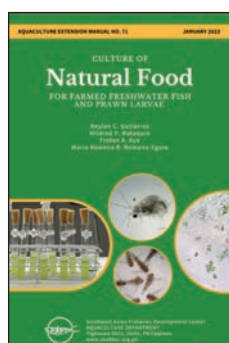
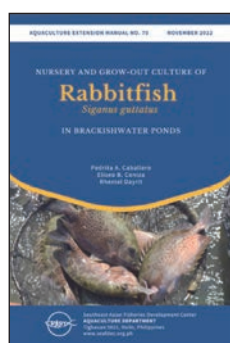
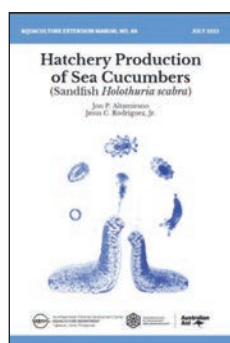
Six new aquaculture extension manuals penned by SEAFDEC/AQD scientist, experts, and researchers were introduced and distributed during the 30th Book Launching on 4 July 2023 in Tigbauan, Iloilo.

The books — covering topics on the hatchery production of sea cucumber (sandfish *Holothuria Scabra*), nursery and grow-out of rabbitfish *Siganus guttatus*, culture of natural larval food for freshwater species (in English and Filipino), tiger shrimp hatchery operations, and nursery and grow-out of pompano in brackishwater ponds and marine cages — were distributed to

50 attendees, comprised mostly of fish farmers and local government fisheries personnel.

These manuals are seen to guide and provide step-by-step instructions and valuable insights to enhance aquaculture operations, which in turn leads to profit for the fish farmers and the development of the aquaculture industry.

Digital copies of the manuals are freely downloadable through the AQD Institutional Repository (repository.seafdec.org.ph) while printed copies may be purchased from the AQD Bookstore (bookstore@seafdec.org.ph).



AQD stocks up on future tiger shrimp breeders

About 4,000 tiger shrimp, weighing approximately 27 g each and PCR-negative for key diseases, were transported by SEAFDEC/AQD from its Dumangas Brackishwater Station to its Tigbauan Main Station (TMS) in Iloilo, Philippines from 11 to 13 September 2023. The move is part of the “Oplan Balik Sugpo” program of AQD that aims to revive the tiger shrimp industry in the Philippines using various strategies, including producing high-quality postlarvae in a biosecure hatchery and promoting environment-friendly practices for grow-out culture in ponds.

The shrimp were produced at the hatchery and ponds of AQD and were then kept in a new broodstock facility so they can, after reaching maturity, spawn another generation of fully captive shrimp. Disease-free breeders are crucial for the success of the “Oplan Balik Sugpo” program as they produce high-quality postlarvae with a higher likelihood of survival and better growth.

Upon arrival at TMS, the shrimp were first acclimatized to help them adjust to



their new environment. Thereafter, the shrimps were disinfected with an iodine solution before they were transported to the new shrimp broodstock facility.

At the close of the three-day stocking activity, Tank 3 and Tank 4 of the broodstock facility housed 2,080 and 2,069 shrimp, respectively. ❏

AQD promotes lab services at chemistry congress

SEAFDEC/AQD showcased its range of analytical and laboratory services during the 37th Philippine Chemistry Congress held from 26 to 28 July 2023 at the SMX Convention Center in Bacolod City, Philippines. The featured services, offered by the Laboratory Facilities for

Advanced Aquaculture Technologies and Fish Health Section of AQD include chemical analyses, microbiological analyses, electron microscopy, bacteriology, histopathology, and PCR-based pathogen detection.

The three-day congress, attended by chemists from the academe, industry, and government, as well as students, also heard AQD Scientist *Dr. Roger Edward Mamauag* who spoke at the plenary session about the role of AQD's formulation of low-cost feeds in the advancement of aquaculture. AQD also brought its bookstore to allow attendees to access various information materials, including aquaculture manuals written by its experts and specialists.

The Philippine Chemistry Congress is the largest annual conference of chemists, chemistry educators, and chemistry researchers in the Philippines. ❏



SPECIAL REPORT

Black tiger shrimp revival program stepping up at AQD

SEAFDEC Aquaculture Department



As a highlight of its 50th anniversary, the SEAFDEC Aquaculture Department (AQD) inaugurated its new Black Tiger Shrimp Broodstock Facility in Tigbauan, Iloilo, Philippines on 3 July 2023. The biosecure facility was built to reduce reliance on wild shrimp spawners that often carry diseases which are then passed on to their eggs and larvae. Its four 120-ton broodstock tanks, with a combined holding facility of 1,440 fully-grown breeders, are projected to produce 80 million postlarvae annually. More importantly, it is hoped to be a source of disease-free captive broodstock which is critical to achieving high survival rates and the production of high-quality postlarvae in the hatchery.

Two months later, on 11–13 September, AQD stocked in the new facility about 4,000 tiger shrimp (*Penaeus mondon*) that tested to be negative for key diseases. The shrimp originated from the shrimp hatchery of AQD and grown to about 27 g each at the Dumangas Brackishwater Station (DBS). Having been reared entirely in AQD facilities, the new batch of shrimp is being groomed to become fully domesticated and disease-free broodstock and, again, complete the life cycle of tiger shrimp in captivity, a feat first accomplished by AQD in 1975. That same week, after collecting the shrimp juveniles, the two pond sources were drained and harvested to yield a total of 5.45 t of 30-grammer tiger shrimp.

Oplan Balik Sugpo

This renewed thrust to demonstrate tiger shrimp technologies began in 2017 when the “Oplan Balik Sugpo” (Operation Plan to Revive Tiger Shrimp) program was launched by AQD, aiming to

revive the tiger shrimp industry which saw its prime in the 1990s. The program’s approach is to promote the production of high-quality shrimp postlarvae and demonstrate environment-friendly approaches in the grow-out phase, altogether adopting enhanced biosecurity and emphasizing good aquaculture practices.

The program is both timely and symbolic. Post-pandemic, black tiger shrimp continues to be in demand and is being adopted by more farmers globally, especially by those looking for a less intensive and lower-cost system than that being used for whiteleg shrimp (*Penaeus vannamei*). In the Philippines, many fish farmers are willing to try farming the tiger shrimp again but struggle to find postlarvae.

On the part of AQD, the renewed emphasis on the tiger shrimp may be an appropriate way to commemorate its 50th anniversary. AQD Chief, *Mr. Dan Baliao*, has remarked time and again that the Department was established back in 1973 primarily to conduct research on tiger shrimp. It was a mandate wherein the then-new technical Department quickly delivered results.

Early successes

Aside from completing the life cycle of tiger shrimp in captivity in 1975 through eyestalk ablation, research findings also enabled AQD to publish an extension manual on its pond culture in 1976 and begin conducting regular training courses on hatchery operations beginning 1977. That same year, mass production of fry in small-scale hatcheries was achieved which brought a newfound livelihood to coastal communities.

Multiple other strides in research, technology verification, training, and extension, eventually led to the flourishing of the tiger shrimp industry. In the Philippines, production peaked at over 90 thousand t in 1994 which was worth significant billions of pesos.

However, the industry was ill-prepared for intensification and the rampant use of unapproved chemicals and release of untreated wastewater into the environment triggered the emergence of a series of shrimp diseases that plague the industry until now.

Providing solutions

In 1998, with the onslaught of the white spot syndrome virus (WSSV), AQD was the first institution in the Philippines to provide PCR-based diagnostic services to detect the virus in shrimp samples submitted by different farms to its laboratory. Environment-friendly shrimp farming techniques were also developed and eventually demonstrated in different areas in Southeast Asia in 2000.

More recently, AQD was involved in a collaborative project in 2014 that developed an online database of aquatic pathogens collected and biobanked in the Philippines which was intended to provide tools to manage and control shrimp diseases. In 2015, a collaborative project also developed a DNA-based kit, for detecting WSSV and other diseases, that delivers visual results in as quickly as 30 min.

Since the launching of “Oplan Balik Sugpo,” AQD has built a new biosecure tiger shrimp hatchery which operated since 2018. Protocols developed in the hatchery have been compiled and published in an extension manual, “Black Tiger Shrimp (*Penaeus monodon*) Hatchery Operations Using Enhanced Biosecurity Measures,” which was launched on 4 July 2023.



New black tiger shrimp broodstock facility of AQD

The postlarvae produced in the hatchery have also been used to supply grow-out demonstration runs at the DBS since 2019, with each run harvesting between 4.5 t and 7.3 t of shrimp. The

production runs emphasized strict biosecurity, proper pond preparation, use of probiotics and green water, crop rotation, among others.



Tiger shrimp postlarvae produced at the AQD hatchery



Tiger shrimp harvested at AQD Dumangas Brackishwater Station on September 2023

Way forward

The haul of shrimp juveniles in 2023, from the production runs at DBS, that will be grown into mature, disease-free, and fully-captive broodstock, is another step up in AQD’s efforts to revive the black tiger shrimp industry. It is hoped that the new broodstock facility will become a sustainable and long-term solution to the perennial challenge and bottleneck of sourcing disease-free spawners from the wild.

The basic provision of disease-free spawners represents the first link in a chain that will, with proper biosecurity and investments, lead to sufficient high-quality postlarvae that can then be stocked in responsibly prepared grow-out farms that may use whatever technology is applicable to its site. ❖

REGIONAL PROGRAMS

USAID/RDMA strengthens partnership with SEAFDEC



The former SEAFDEC Secretary-General, *Ms. Malinee Smithrithee*, extended a warm welcome to the Deputy Mission Director of the United States Agency for International Development/Regional Development Mission for Asia (USAID/RDMA), *Ms. Linda McElroy*, along with other USAID/RDMA officers on 19 September 2023 at the SEAFDEC Secretariat in Bangkok, Thailand.

Ms. McElroy congratulated the SEAFDEC Secretary-General for her outstanding leadership and guidance over the years that significantly strengthened

the partnership between SEAFDEC and the U.S. Government. She also conveyed her appreciation to all SEAFDEC staff for their dedication and active participation in various collaborative initiatives. She specifically acknowledged the important role of SEAFDEC in the successful implementation of the Sustainable Fish Asia (SUFIA) Local Capacity Development (LCD) Activity that enhanced the Center's organizational capabilities as a public international organization in accordance with USAID requirements. Furthermore, *Ms. McElroy* highlighted the fruitful collaboration

between SEAFDEC and the U.S. Department of the Interior (DOI) under the project "Implementing the Lower Mekong Fish Passage Initiative in Cambodia, Thailand, and Viet Nam." She concluded by expressing her congratulations on the commencement of the new five-year project "Southeast Asia Fisheries Partnership Activity" effective from 1 October 2023 to 30 September 2028.

In response, *Ms. Malinee* expressed her appreciation to the U.S. Government and the USAID/RDMA for their continuous support to SEAFDEC and its Member Countries. This support has played a crucial role in advancing the cause of sustainability in the fisheries sector of Southeast Asia. Additionally, she extended an invitation to the USAID/RDMA to visit the facilities of the SEAFDEC Training Department and explore potential collaborations related to promoting fish passages in Southeast Asia and harnessing the capabilities of the M.V. SEAFDEC 2. ✦

IFRDMD conducts meeting on anguillid eel data analysis methods



SEAFDEC/IFRDMD organized the meeting in Bogor, Indonesia on 2 August 2023 to discuss the methods for the comprehensive stock assessment of anguillid eels in Indonesia with *Prof. Toshihide Kitakado* from Tokyo University of Marine Science and Technology, Japan as the resource person. The Meeting was attended by the Deputy Secretary-General of SEAFDEC, *Dr. Tomoko Nakazato*, and

staff from the SEAFDEC Secretariat and IFRDMD.

Moreover, *Prof. Kitakado* delivered a public lecture titled "Introduction of Management Strategy Evaluation for Fisheries" on 3 August 2023 at the Faculty of Fisheries and Marine Science, IPB University which was also broadcasted live through online platforms including Zoom and YouTube.

The Lecture was attended by students from IPB University and Politeknik Ahli Usaha Perikanan Pasar Minggu. On that occasion, the Deputy Chief of IFRDMD, *Mr. Tomohito Shimizu*, handed over books and comics published by IFRDMD entitled "Overview and Perspectives of Anguillid Eels in Southeast Asia" and "Sidat, Ikan yang Tangguh" to the Dean of Faculty of Fisheries and Marine Science of IPB University.

The Meeting was continued on 25–30 September 2023 in Palembang, Indonesia. This activity was funded by the Japan-ASEAN Integration Fund (JAIF) Phase 2 Project under the project "Development of Stock Assessment Methods and Strengthening of Resources Management Measures for Tropical Anguillid Eel in Southeast Asia." ✦

SEAFDEC and FRA of Japan uphold cooperation, extend agreement



The Secretary-General of SEAFDEC, *Ms. Malinee Smithrithee*, and the President of the Fisheries Research and Education Agency of Japan (FRA), *Dr. Nakayama Ichiro*, signed the agreement “Arrangement for Scientific and Educational Cooperation between

Japan Fisheries Research and Education Agency and Southeast Asian Fisheries Development Center.” Coinciding with the 50th Anniversary celebration of the Aquaculture Department (AQD) of SEAFDEC, the Signing Ceremony was carried out in Iloilo, Philippines on 7 July 2023. The Signing Ceremony was witnessed by the SEAFDEC Deputy Secretary-General, Chief and Deputy Chief of AQD, officials and representatives from the SEAFDEC Secretariat, Training Department, and AQD as well as representatives from FRA.

Covering the period of five years from the signing date, the Arrangement marks the continued cooperation between SEAFDEC and FRA in fostering the exchange of scientific and educational knowledge, personnel, and various fields of mutual interest. Since the mid-2000s, SEAFDEC established Arrangements with the Japan Fisheries Research Agency (former FRA) and National Fisheries University (NFU) which were merged in 2016 into the present FRA.



Regional Training Course on ARs Development Program



In the Southeast Asian region, artificial reefs (ARs) have the potential to enhance fishery resources. Five decades ago, some of the SEAFDEC Member Countries including Brunei Darussalam, Indonesia, Malaysia, and Thailand deployed ARs as one of their resource enhancement programs. Nevertheless, the knowledge of ARs including technical construction, deployment, and monitoring needs to be updated.

In this regard, SEAFDEC/MFRDMD in collaboration with SEAFDEC/TD organized the “Regional Training Course on ARs Development Program” on 10–13 July 2023 in Terengganu, Malaysia. The Training was attended by representatives from Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam, and officers from SEAFDEC/TD, and MFRDMD. Moreover, experts were invited from Kasetsart University, Thailand; Ubon Ratchathani University,

Thailand; Institute of Oceanography and Environment, University Malaysia Terengganu, Malaysia; Engineering Division, Department of Fisheries Malaysia; and MFRDMD to share their knowledge and experience regarding ARs research and development.

The objectives of the Training were to 1) share current information on the AR development program of the participating countries; 2) improve technical knowledge of ARs site selection, design and construction, deployment process, and pre- and post-deployment monitoring activities; and 3) establish a networking and information sharing platform on ARs development program among scientists, researchers, and fisheries managers. The participants hoped that SEAFDEC would conduct another training to include other important aspects of AR development particularly socioeconomics, cost-benefit analysis, among others. ❖

Debris in the Chao Phraya River analyzed

The SEAFDEC Secretariat and Training Department (SEAFDEC/TD) co-organized the “Workshop on Abundance Estimation of Marine Debris Using Pier Monitoring Data” on 23–24 September 2023 at the SEAFDEC Secretariat in Bangkok, Thailand. The Workshop was attended by the resource person from the Tokyo University of Marine Science and Technology (TUMSAT), *Dr. Toshihide Kitakado*, as well as officers and researchers from the SEAFDEC Secretariat and Training Department. During the Workshop, the debris data collected from the Chao Phraya River with the sampling site at the port of SEAFDEC/TD in Samut Prakan, Thailand were validated and analyzed. Moreover, the Workshop was also aimed at developing the floating marine debris density model.

The port of SEAFDEC/TD is located at the mouth of the Chao Phraya River connected to the Gulf of Thailand where marine debris were also studied by the Department. The Workshop was one of the activities of the project “Sustainable Utilization of Fisheries Resources and Resources Enhancement in Southeast Asia” supported by the Japanese Trust Fund.



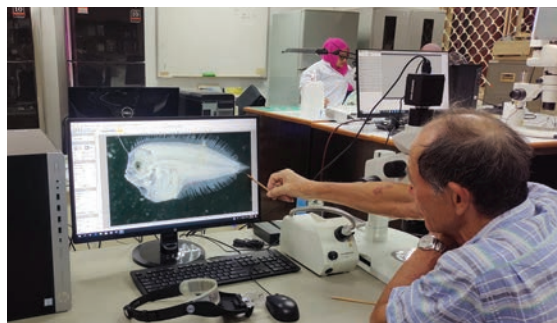
Training Course on Larval Fish and Eggs Identification for Fish Stock Assessments

SEAFDEC/MFRDMD conducted the “Training Course on Larval Fish and Eggs Identification for Fish Stock Assessments” from 18 to 27 September 2023 at MFRDMD premises in Terengganu, Malaysia. The participants include the relevant staff from TD,

MFRDMD, and Malaysia Fisheries Research Institute (FRI) Kg. Acheh, Perak and Bintawa, Sarawak. The resource persons of the Training were *Dr. Yoshinobu Konishi* and MFRDMD genetics senior researcher, *Ms. Wahidah binti Mohd Arshaad*. The Training was

organized to improve the knowledge and skills of the trainees of the early life history of fishes by identifying fish eggs and larvae of selected groups up to family and genus levels.

Larval fish identification is essential not only to fisheries management but also to the monitoring of the aquatic environment through the inventory of the fish and ichthyoplankton fauna in target waters. It is envisaged that the trainees would apply the knowledge and skills they obtained from the Training in managing the fish stock at national and sub-regional levels for long-term sustainable fisheries management. ❖



SEAFDEC/TD assists DOF Malaysia on eACDS



on 12–14 September 2023 in Putrajaya, Malaysia with support from the ASEAN Regional Integration Support by the European Union Plus Malaysia (ARISE Plus Malaysia) Project.

technical assistance to DOF Malaysia in Kuala Terengganu, Kota Kinabalu, and Perlis in September, October, and November 2023, respectively.

SEAFDEC/TD extended technical assistance to the Department of Fisheries (DOF) Malaysia on the use of the electronic ASEAN Catch Documentation Scheme (eACDS) application. A training course was organized by DOF Malaysia

A total of 15 officers from DOF Malaysia were trained on the traceability of fish and fishery products to support the inclusive and sustainable economic growth of Malaysia through international trade and economic integration. The trainees were expected to impart the knowledge of the eACDS application they obtained from the Training to relevant DOF staff and stakeholders in the future. Furthermore, TD would also extend

The web-based and mobile eACDS application links all information and data in the supply chain from the point of catch to plates/consumers. The Key Data Elements (KDEs) required by the eACDS application include 1) Point of Catch, 2) Buyers/Receivers and Sellers (Broker/Wholesaler), 3) Processors, 4) Exporters and International Shippers, 5) Importers, and 6) End Consumers. ❖

Regional Practical Training on Google Earth Engine and Oceanographic Data Visualization

SEAFDEC/TD organized the “Regional Practical Training on Google

Earth Engine and Oceanographic Data Visualization” from 4 to 8 September

2023 at its premises in Samut Prakan Province, Thailand. This Training was one of the activities of the project “Sustainable Utilization of Fisheries Resources and Resources Enhancement in Southeast Asia” with support from the Japanese Trust Fund. The resource person was a lecturer from the Faculty of Marine Technology, Burapha University, Chanthaburi Campus, Thailand, *Dr. Wirote Laongmanee*, assisted by the Fishing Ground Information Scientist from TD, *Ms. Siriporn Pangorn*.



(Continued on Page 15)

Fisheries activities at Tempe Lake in South Sulawesi, Indonesia assessed

Under the project “Management Scheme of Inland Fisheries in the Southeast Asian Region” with support from the Japanese Trust Fund, SEAFDEC/IFRDMD assessed the fisheries activities at the Tempe Lake in South Sulawesi Province, Indonesia on 21–24 August 2023. The assessment began with a discussion at the office of the Marine and Fisheries Service of Wajo Regency and floating house in the Tempe Lake with the Acting Head of Marine and Fisheries Service of Wajo Regency and staff as well as a member of the Regional Representatives of Wajo Regency who is

also the Chairperson of Commission II. Subsequently, the focus group discussion (FGD) was held with 28 inland fisheries stakeholders including fishers, fish farmers, fish processors, middle persons, and village officers. The current condition of Tempe Lake as well as the fishway at the Dam of Gerak Tempe were also observed. Furthermore, IFRDMD also visited the office of the Research Institute for Coastal Aquaculture and Fisheries Extension in Maros, South Sulawesi Province to obtain additional information about Tempe Lake and hand over the books “The Features of

Inland Fisheries in Southeast Asia” and “Pengelolaan Perikanan Perairan Darat di Indonesia.” The fisheries management in Tempe Lake applied the principles of sustainable fisheries in certain domains and indicators such as stakeholder participation in maintaining fish resources. However, the quality of aquatic habitat still need to be improved by not converting into land use. IFRDMD will continue to support the stakeholders in developing appropriate management policies and measures to sustain the fishery resources in Tempe Lake.



The Tempe Lake is a tectonic lake with an area of approximately 350 km² making it the second-largest lake in Sulawesi. The assessment coincided with the annual Tempe Lake Festival with the traditional feast “Maccera Tappareng” which is a ritual to purify the lake as well as a form of gratitude of the fishers for their catch. ✖

Regional Practical Training on Google Earth Engine and Oceanographic Data Visualization

(Continued from Page 14)

During the lectures and practical sessions of the Training, the 26 trainees including junior fisheries officers and researchers from the respective ASEAN Member States (AMSs) learned the utilization of GIS and RS via Google Earth Engine (GEE) and oceanographic data visualization. GEE is a computing platform that allows users to run geospatial analysis on Google’s infrastructure and combines a multi-petabyte catalog of satellite imagery and geospatial datasets with planetary-scale analysis capabilities including more than 40 years of historical imagery and scientific datasets which are updated and expanded daily. This platform is useful for the AMSs to explore and utilize the available datasets as tools for sustainable use and management of fishery resources in the region. ✖

Filipinos, Thais, train in marine fish hatchery



SEAFDEC/AQD recently concluded an intensive training course on marine fish hatchery operations which was attended by nine participants from the Philippines and Thailand. During their 36-day training, the trainees were equipped with comprehensive technical knowledge and practical skills in the

areas of broodstock management, spawning, and larval rearing of marine fishes.

Spanning from 19 to 24 July 2023, the Training offered an immersive experience to the trainees, which included informative lectures and hands-on practical sessions on broodstock management of marine fishes, marine fish hatchery operations, natural food culture, nutrient requirements of marine fishes, and feed formulation and preparation. The Training, which was partly sponsored by the Government of Japan Trust Fund, also incorporated special subjects on biosecurity measures and protocols for hatcheries, fish health management, and nutritional diseases of marine fishes. ✖

SEAFDEC reaffirms dedication to the advancement of sustainable fisheries and conservation of marine biodiversity

The Policy and Program Coordinator of the SEAFDEC Secretariat, *Dr. Worawit Wanchana*, participated in the “Sustainable Ocean Initiative (SOI) Regional Capacity Building Workshop for East, South and South-East Asia” on 5–8 September 2023 in Seoul, Republic of Korea. Organized by the Convention on Biological Diversity (CBD) Secretariat, the Workshop convened experts, managers, officers, and specialists in marine biodiversity conservation and fisheries management from the East, South, and Southeast Asian regions. The Workshop focused on the opportunities, challenges, and strategies for implementing the Kunming-Montreal Global Biodiversity Framework (KM-GBF) in the regions, specifically marine and coastal biodiversity.

Participating in the Workshop was an important opportunity for SEAFDEC to discuss key issues to accelerate and enhance working areas and collaborations between fishery and biodiversity conservation agencies. Over the years, SEAFDEC has enhanced cooperation through stronger partnerships with



regional fisheries organizations, Member Countries, and stakeholders in sustainable fisheries management, research, data sharing, and capacity building for improved coastal and marine fisheries resources and ecosystem health and resilience. Concurrently, SEAFDEC is actively developing and implementing programs and activities that promote sustainable fisheries practices in the Member Countries, which align with the KM-GBF and prioritize sustainable fisheries management, bycatch reduction, and safeguarding critical marine habitats. While implementing innovative technologies and methodologies for

sustainable fisheries data collection, analysis, and reporting, SEAFDEC is also engaged in advocacy efforts aimed at influencing regional and national fisheries policies in harmony with marine biodiversity conservation objectives. SEAFDEC, in collaboration with partners, is expanding its capacity-building initiatives to encompass tailored training and education programs in sustainable fisheries management and marine biodiversity conservation to ensure the provision of technical assistance and knowledge-sharing platforms for fisheries professionals across the region. ❖

Workshop on Development of Field Guidelines for Glass Eel Species Identification

SEAFDEC/IFRDMD organized the “Workshop on Development of Field Guidelines for Glass Eel Species Identification” in Nha Trang, Viet Nam on 18–19 July 2023 to review the draft field guide of glass eel species identification, provide the methods for identifying glass eels, and discuss the strategic framework for establishing the database on glass eels. The Workshop was attended by the representatives from the SEAFDEC Member Countries, namely: Indonesia, Myanmar, Philippines, and Thailand, officers from the SEAFDEC Secretariat and IFRDMD, as well as academicians.

During the Workshop, IFRDMD introduced the comics entitled “Anguillid Eel: the tough fish” which was written in English and translated



into Bahasa, Burmese, Filipino, Thai, and Vietnamese. Moreover, IFRDMD visited Van Xuan Company on 20 July 2023, which is an eel hatchery in Khan Hoa Province, Viet Nam. Van Xuan Company is the largest and the most technically advanced hatchery in the country. The IFRDMD staff toured the hatchery facilities and were briefed on

the growth and survival rates of juvenile eels in the hatchery as well as the species composition of glass eels in Viet Nam. The company also explained about the rearing water which is taken from the reservoir, then recycled with the required oxygen added. The company sells eels to other eel farms, and also keeps some to raise to commercial size. ❖

TD organizes training courses on tools for sustainable fishery resources management

Under the project “Sustainable Utilization of Fisheries Resources and Resources Enhancement in Southeast Asia,” SEAFDEC/TD organized a series of training courses on data collection, fishery biology, fish stock assessment, and biostatistics at its premises in Samut Prakan Province, Thailand. A total of 27 fishery officers and researchers from the ASEAN Member States (AMSs), SEAFDEC/TD, and MFRDMD attended the lectures and practical exercises of the Training to enhance their knowledge and skills on such topics.



The “Regional Training Course on Data Collection and Bio-Statistic for

Fishery” was organized from 3 to 5 August 2023 with *Dr. Thanitha Darbanandana* from Kasetsart University as the resource person. Furthermore, the “Regional Training Course on Data-Limited Fish Stock Assessments Using R-Statistical Program” was organized from 6 to

10 August 2023 with *Dr. Supapong Pattarapongpan* from SEAFDEC/TD as the resource person. It is envisaged that the Training will strengthen the network of human resources for sustainable management of fishery resources in the region. ❖

Webinar on Aquatic Genetic Resources for Food and Agriculture convened



The SEAFDEC Secretariat organized the “Webinar on Aquatic Genetic Resources for Food and Agriculture” on 8 August 2023 through the Zoom platform. The resource persons of the Webinar include representatives from the Food and Agriculture Organization of the United Nations (FAO) and genetic expert from the Philippines. Meanwhile, the Webinar was attended by the representatives from the SEAFDEC Member Countries,

SEAFDEC Secretary-General, Deputy Secretary-General, and officials from the SEAFDEC Secretariat, TD, AQD, MFRDMD, and IFRDMD.

During the Webinar, FAO presented its perspective on the status and challenges for genetic management in global aquaculture as well as updates on the implementation of the FAO Global Plan of Action for the Conservation,

Sustainable Use and Development of Aquatic Genetic Resources for Food and Agriculture. In addition, FAO also introduced the aquatic genetic resources information system (AquaGRIS) which is focused on farmed types of aquatic genetic resources (AqGR) and its application. Furthermore, the experience of the Philippines on data collection and genetic resource registry of milkfish (*Chanos chanos*) was also shared during the Webinar. Finally, FAO announced the planned online training program and introduced the relevant FAO resources on AqGR management.

The Webinar was one of the activities of the project “Assistance for Capacity Development in the Region to Address International Fisheries-related Issues” supported by the Japanese Trust Fund. The recording of the Webinar can be viewed at <https://youtu.be/fiVrIFyhXE>. ❖

SEAFDEC participates in ASEAN fisheries-related virtual meetings

(Continued from Page 20)

in 2022–2023 and the new projects for 2023 as well as one pipeline project. Specifically on the pipeline project “Implementing and Assessment of the ASEAN Regional Plan of Action for the Management of Fishing Capacity,”

Malaysia indicated its willingness to be the project lead country once the funding is secured from the Japan-ASEAN Integration Fund. The 31st ASWGF also endorsed the key findings of the 2021 baseline information for monitoring and

evaluation of the Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Towards 2030 (RES&POA-2030) for further submission to the Senior Officials Meeting of the ASEAN Ministers on Agriculture and Forestry (SOM-AMAF) in 2023. ❖

FUTURE ACTIVITIES

Date	Venue	Title	Organizer(s)
2023			
2–9 October	TMS, Philippines	Training Course on Pompano & Red Snapper Seed Production	AQD
3–5 October	Bali, Indonesia	SAFET 2023 Conference: Impact at Scale for a Sustainable and Resilient Future	SAFET
3–6 October	Kota Kinabalu, Sabah, Malaysia	Regional On-site Training on Chondrichthyans Taxonomy, Biology and Data Collection	MFRDMD
3–6 October	Sabah, Malaysia	Socio-economic Research on Trade of Sharks and Rays in Sabah, Malaysia	MFRDMD
9–26 October	TMS, Philippines	RECAB 2023: Regional training Course on Advanced Aquaculture Technologies for Commercially Important Commodities in Southeast Asia	SEC & AQD
17–19 October	Melaka, Malaysia	24 th Meeting of SEAFDEC Information Staff Program (ISP)	SEC & MD
23–27 October	Bangkok, Thailand	Regional Workshop for Asia on the 2022 FAO Voluntary Guidelines for Transshipment	FAO
26–27 October	Dili, Timor-Leste	16 th RPOA-IUU Coordination Committee Meeting	RPOA-IUU
30 October–28 November	TMS/DBS, Philippines	Training Course on Brackishwater Aquaculture	AQD
21 October–2 November	Karatsu, Japan	Training Course on the Exercising Quantitative Echosounder “Sonic”	MFRDMD
6–9 November	Bangkok, Thailand	Regional Training Course on the United Nations Convention on the Law of the Sea 1982 (UNCLOS 1982) in Fisheries Perspective	TD
6–10 November	Geneva, Switzerland	77 th Meeting of the Standing Committee of CITES	CITES
6–21 November	TMS, Philippines	Training Course on Sandfish (<i>Holothuria scabra</i>) Seed Production, Nursery & Management (Session 2)	AQD
6 November–13 February 2024	TMS, Philippines	Distance Learning Course on Basic Principles of Health Management in Aquaculture (Online)	AQD
12–17 November	Shanghai, China	16 th Annual Meeting of Asian Fisheries Acoustics Society: The International Conference on Underwater Acoustics for Sustainable Fisheries in Asia (AFAS 2023)	TD
13–19 November	Samut Prakan, Thailand	Training Course on Marine Steering Gear System (for students from Kasetsart University)	TD
13–27 November	BFS, Philippines	Training Course on Community-based Freshwater Aquaculture for Remote Rural Areas of Southeast Asia	AQD
15–17 November	Bangkok, Thailand	Regional Technical Meeting on Responsible Fishing: The Abandoned, Lost or otherwise Discarded Fishing Gear (ALDFG) and Marking of Fishing Gear	TD
20–22 November	Bali, Indonesia	46 th Meeting of SEAFDEC Program Committee	SEC & IFRDMD
23–24 November	Bali, Indonesia	26 th Meeting of Fisheries Consultative Group of the ASEAN-SEAFDEC Strategic Partnership (FCG/ASSP)	SEC
25 November	Bali, Indonesia	SEAFDEC Department Chiefs' Meeting	SEC
27 November–1 December	Samut Prakan, Thailand	Regional Training Course on Energy Optimization for Fishing Vessel and Optimal Post-Harvest Fish Handling Techniques	TD
4–7 December	Kuala Lumpur, Malaysia	Regional Training Workshop on Sharks and Rays Stock Assessment by Yield Per Recruit (YPR) Model	MFRDMD
6–8 December	Bangkok, Thailand	Regional Workshop on Fisheries-related Other Effective Area-based Conservation Measures in the Bay of Bengal and Southeast Asia	FAO in collab with IUCN
11–15 December	Kuala Lumpur, Malaysia	Regional Training on the Stock and Risk Assessment of Two Seerfish Species in the South-east Asian Region	MFRDMD
12–13 December	Bangkok, Thailand	Inception Meeting for the Project Sustainable Management of Fisheries, Marine Living Resources and Their Habitats in the Bay of Bengal Region for the Benefit of Coastal States and Communities (BOBLME Phase II)	TD
14 December	Bangkok, Thailand	Steering Committee Meeting for the Project BOBLME Phase II	TD

Fish farmers, stakeholders gather for Farmers' Forum



More than a hundred fish farmers and industry stakeholders converged at SEAFDEC/AQD Multi-Purpose Hall in Tigbauan, Iloilo on 4–5 July 2023 to participate in the Farmers' Forum. The event was organized as part of the golden anniversary celebration of AQD, with the primary goal of updating and engaging farmers on aquaculture technologies developed by the Department.

On the first day, AQD Scientist, *Dr. Frolan Aya*, provided insights on the breeding and culture of silver therapon (*Leiopotherapon plumbeus*) as well as the technology on induced spawning and hatchery rearing of the species. Silver therapon is considered one of the most valuable edible native freshwater species in the Philippines. The event also delved into the "Prospects for Tropical Sea Cucumber Aquaculture," with AQD Scientist, *Dr. Jon Altamirano*, highlighting the significance of tropical sea cucumber species *Holothuria scabra*, commonly called sandfish, as a potential aquaculture commodity.

Associate Researcher, *Mr. Marwin dela Cruz*, also took the stage to discuss the production of tilapia and giant freshwater prawn in a biofloc system. His presentation covered the development of a biofloc system, pond preparation, stocking, feeding, monitoring, harvesting, and economic analysis. Associate Scientist, *Dr. Nerissa Salayo*, then made a presentation on community-based freshwater aquaculture. Her lecture narrated how a three-party collaboration between a research institution such as AQD, a local government unit, and a local fishers organization can make a difference in a community. Finally, AQD Deputy Chief, *Dr. Sakaya Ito*, gave updates on the latest developments in the development of aquaculture technologies for new aquatic species such as the kawakawa, shortfin scad, and slipper lobster. He emphasized the role of aquaculture in filling the gap between the global demand for seafood products and what capture fisheries can sustainably provide.

The second day gave farmers opportunities to do practical activities on tilapia sex reversal, mangrove crab biology and species identification, sending samples for disease diagnosis/detection, natural food production, laboratory-scale feed preparation, and sea cucumber hatchery and nursery management.

Note for contributors

The SEAFDEC Newsletter publishes quarterly news on all aspects of fisheries in Southeast Asia. The Editors reserve the right to accept and/or abridge articles based on available space. Anyone wishing to submit an article to the SEAFDEC Newsletter is requested to send it to the Editor in Chief or Editors at the given addresses.

Information in this Newsletter may be quoted only if reference is made to SEAFDEC.

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SEAFDEC participates in ASEAN fisheries-related virtual meetings

The representatives from SEAFDEC participated in a series of ASEAN meetings related to fisheries, namely: 13th ASEAN Shrimp Alliance (13th ASA), 15th Meeting of ASEAN Fisheries Consultative Forum (15th AFCF), and 31st Meeting of ASEAN Sectoral Working Group on Fisheries (31st ASWGF), which were convened virtually on 24, 25, and 26–27 July 2023, respectively, hosted by the Ministry of Agriculture and Forestry of Lao PDR.

During the 15th AFCF, the progress of the initiatives and activities of SEAFDEC in 2022–2023 under the AFCF priority areas, namely: securing sustainable small-scale fisheries, resource rehabilitation

and enhancements, impacts of climate change on fisheries, combating IUU fishing, and traceability of fisheries and aquaculture products, were reported. Moreover, SEAFDEC also informed the AFCF of the new projects that would commence in 2023 focusing on combatting IUU fishing, small-scale fisheries, and impacts of climate change.

Subsequently, at the 31st ASWGF, several dialog partners of ASEAN including SEAFDEC were invited to attend the Open Session to present their respective cooperation activities with ASEAN. Under the ASEAN-SEAFDEC Strategic Partnership (ASSP) framework, SEAFDEC reported the key results of the



25th Meeting of the Fisheries Consultative Group of the ASEAN-SEAFDEC Strategic Partnership (25FCG/ASSP) which was convened on 8–9 December 2022 in Iloilo City, Philippines. The 31st ASWGF also approved the ongoing projects implemented by SEAFDEC

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Baliao gets fourth term as AQD Chief



The term of *Mr. Dan Baliao* as the Chief of SEAFDEC Aquaculture Department (AQD) has been extended for another two years.

Mr. Baliao has been serving as Chief of AQD since 7 September 2017 and is now expected to continue fulfilling his duties until 6 September 2025.

Prior to this, Philippine President *Ferdinand Marcos, Jr.* nominated to the SEAFDEC Council for *Mr. Baliao* to serve as the AQD Chief. The Council consisting of directors of fisheries of the eleven Member Countries of SEAFDEC then gave their approval on the nomination. ✪

Regional Workshop on Towards a New Era of Support for Small-scale Fisheries in Southeast Asia



The “Regional Workshop on Towards a New Era of Support for Small-scale Fisheries in Southeast Asia” was organized by SEAFDEC/TD in Bangkok, Thailand on 29–31 August 2023 as one of the activities of the project “Small-scale Fisheries Management for Better Livelihood and Fisheries Resources” supported by the Japanese Trust Fund. The 42 participants

of the Workshop include representatives from the SEAFDEC Member Countries, namely: Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, and Viet Nam. Moreover, the relevant staff from the SEAFDEC Secretariat, TD, and IFRDMD also attended the Workshop. The resource persons were from the Food and Agriculture Organization of the United Nations/Regional Office for Asia and the Pacific (FAO/RAP), Too Big to Ignore (TBTI), Mahidol University, Asia-Pacific Rural and Agriculture Credit Association (APRACA), Sustainable Development Foundation (SDF).

The Workshop served as a platform for identifying the contribution of small-scale fisheries in the region;

obtaining the current concepts and approaches of small-scale fisheries management systems in the region; identifying the critical challenges/needs on small-scale fisheries management in fisheries resources, human, governance, socioeconomic contexts; and gathering recommendations and ways forward to strengthen small-scale fisheries management in the region that aligns with regional and international norms. It is envisaged that the outputs of the Workshop will help in providing the appropriate short-term and long-term support including the regional policy related to sustainable small-scale fisheries management and pave the way for better livelihood of small-scale fishers. ✪