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SEAFDEC joins the 34th Session of the FAO Committee on Fisheries



Participants of the COFI34

The SEAFDEC Secretary-General, *Ms. Malinee Smithrithee* and senior officials from the SEAFDEC Secretariat and Departments participated as observers during the “34th Session of Committee on Fisheries (COFI34)” which was organized virtually by FAO on 1–5 February 2021. The COFI34 was attended by more than 500 participants including

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EDITORIAL

For the first quarter of 2021, one of the highlighted events was the launching of the Study on Impacts of COVID-19 Pandemic on the Fisheries Sector of the ASEAN-SEAFDEC Member Countries after the questionnaire and workplan were finalized.

Due to the COVID-19 pandemic, several SEAFDEC activities were organized through online platform such as the online practical workshops on eACDS to train the relevant staff from participating countries and test the eACDS application. Also, SEAFDEC convened the online Briefing on UNEP GEF Implementing the Strategic Action Program for the South China Sea and Gulf of Thailand (SCS SAP Project) to discuss the project design and activities in line with the current national initiatives and priorities.

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SEAFDEC kicks off the Study on Impacts of COVID-19 Pandemic on the Fisheries Sector of the ASEAN-SEAFDEC Member Countries



SEAFDEC organized the virtual “Regional Workshop for the Study on Impacts of COVID-19 Pandemic on the Fisheries Sector of the ASEAN-SEAFDEC Member Countries” on 24 February 2021. The Workshop was attended by the Deputy Secretary- the Fisheries Sector of the ASEAN-

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EDITORIAL

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However, other activities were conducted face to face, such as the onsite training on fish handling with the aim of enhancing the knowledge of small-scale fishers to keep the high quality of fish; data collection to assess the fisheries management which include gender integration and livelihood improvement; data collection for gender analysis of inland aquaculture; and regular survey on eel catch.

To enhance the collaboration with relevant organizations, SEAFDEC continued to participate in online international and regional fora such as the 34th Session of Committee on Fisheries (COFI), the 3rd ASEAN Meeting on Combating IUU Fishing in Partnership with the EU, Review of Illegal Fishing in APFIC Region, which served as platforms for collaborative activities on sustainable development of fisheries in the Southeast Asian region.

In addition, SEAFDEC/IFRDMD launched the book *Overview and Perspective of Anguillid Eels Fishery in Southeast Asia* that describes the complex life history of anguillid eels especially their journey between marine and freshwater environments.

Lastly, SEAFDEC expressed condolences to the family of *Dr. Siri Ekmaharaj* who passed on 21 April 2021. *Dr. Siri* served as the Secretary-General of SEAFDEC from 2005 to 2009. *Dr. Siri* will always be remembered and forever praised for his management of SEAFDEC that led to great progress of the organization and advanced the fisheries development of Southeast Asia. 

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SEAFDEC joins the 34th Session of the FAO Committee on Fisheries

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government officials and representatives from international organizations, civil society organizations, and the academe. The key highlights of COFI34 included the 25th anniversary of the Code of Conduct for Responsible Fisheries and drafting of the Declaration for sustainable fisheries and aquaculture. Moreover, the major topics of the COFI34 agenda include: 1) the current state of fisheries and aquaculture; 2) impacts of climate change and biodiversity loss, aquaculture biosecurity and sustainable growth; 3) role of small-scale fisheries and the livelihood of coastal communities; and 4) illegal fishing and fish operations at sea. The Committee is a subsidiary body of the FAO Council and the only global inter-governmental forum that addresses the issues and challenges related to fisheries and aquaculture.

In line with the agenda of COFI34, SEAFDEC and FAO are continuously working in partnership to conduct various activities in Southeast Asia for the sustainable utilization of fishery resources of the region. Such activities


include the publication of the Southeast Asian State of Fisheries and Aquaculture every five years, harmonization of fishery statistics adopting the FAO standards, development of human capacity on the application of the ecosystem approach to fisheries management, promotion of the FAO SSF Guidelines focusing on human rights-based approach and gender equality, enhancement of the cooperation among the ASEAN Member States on combating IUU fishing, and establishment of capacity building programs to support the implementation of port State measures. In addition, SEAFDEC in partnership with several partners including FAO made concerted efforts to address the impacts of climate change to fisheries and aquaculture, particularly enhancing the capacity of small-scale fishers to be resilient to disasters and climate change (e.g. diversified livelihood, safety at sea, early warning system, solid waste management). SEAFDEC is also collaborating with FAO to tackle the issue on abandoned, lost or otherwise discarded fishing gear (ALDFG).



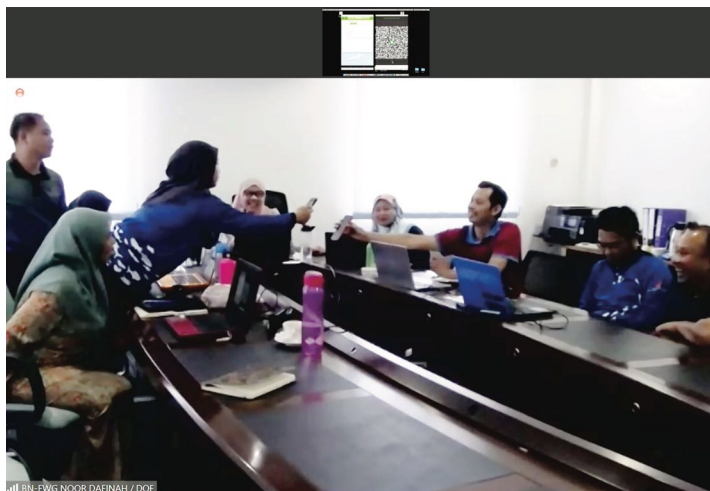
SEAFDEC kicks off the Study on Impacts of COVID-19 Pandemic on the Fisheries Sector of the ASEAN-SEAFDEC Member Countries

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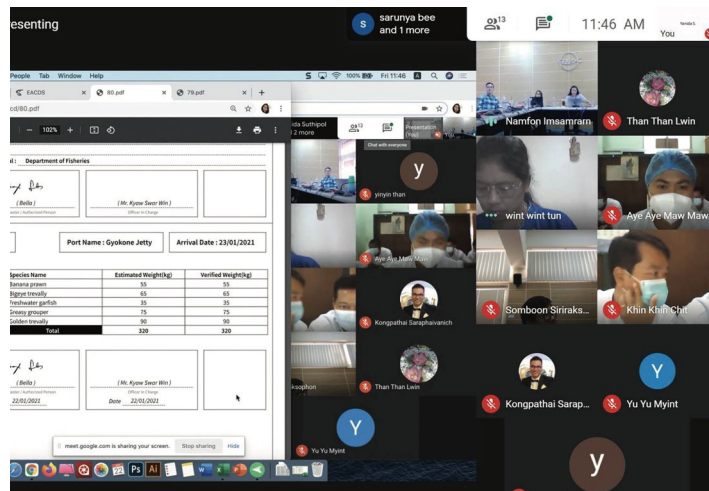
General of SEAFDEC, *Mr. Koichi Honda*, SEAFDEC Department Chiefs, and officials from the SEAFDEC Secretariat and Departments as well as national focal points and representatives from the SEAFDEC Member Countries, namely: Brunei Darussalam, Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Philippines, Thailand, and Viet Nam.

At this Workshop, the participants reviewed and finalized the questionnaire that would be used to gather relevant information on the impacts of COVID-19 on the fisheries sector of the respective countries. Moreover, the workplan of the Study was also discussed during the Workshop. It is anticipated that the results of the Study including policy and technical recommendations would be presented at the 44th Meeting of the SEAFDEC Program Committee in 2021. 

Online practical workshops on eACDS implementation



Participants during the eACDS Workshop for Malaysia



Participants during the eACDS Workshop for Brunei Darussalam

SEAFDEC/TD in collaboration with the Department of Fisheries, Myanmar organized the “Online Practical Workshop on the Use of electronic ASEAN Catch Documentation Scheme (eACDS) Application Version 2 in the Part of Catch Declaration” from 21 to 22 January 2021. The new feature of eACDS Version 2 was introduced to the 13 participants of the Workshop who were fisheries officers from Yangon and Nay Pyi Taw. After the practical exercises on different features of the

eACDS, the participants should be able to train the fishers and other stakeholders on the use of the eACDS application.

Moreover, in collaboration with the Department of Fisheries, Malaysia and the Department of Fisheries, Brunei Darussalam, TD also organized the “Online Practical Workshop on the Use of electronic ASEAN Catch Documentation Scheme (eACDS) Application Version 2 in the Part of Movement Document (MD), Statement

of Catch (SC), and Catch Certification (CC)” from 24 to 25 February 2021 and 30 March to 1 April 2021 for Malaysia and Brunei Darussalam, respectively. The eACDS application Version 2 and its new features were introduced to the fisheries officers who participated in the respective Workshops. Subsequently, the eACDS Version 2 would be tested by the participants from the respective countries in close coordination with the SEAFDEC eACDS working team.



SEAFDEC organizes Inter-Departmental Information Workshop



Participants during the Information Workshop

The SEAFDEC Secretariat organized the virtual “Inter-Departmental Information Workshop” on 17–18 February 2021. The Workshop was attended by senior officials and staff

from SEAFDEC Secretariat as well as representatives from the Departments including the concerned information, research, technical, and administrative staff.

During the Workshop, the participants discussed the revision of the “Notes for Writing and Editing SEAFDEC Documents” and agreed to rename the document as “Guide for Writing and Editing Documents and Publications (SEAFDEC Style).” Although at this stage, the SEAFDEC Style is still subject to approval of the Department Chiefs, all staff of SEAFDEC are encouraged to start making use of the SEAFDEC Style on a trial basis in order to obtain feedback that could be accommodated in the document prior to its final approval. It is expected that the SEAFDEC Style would be applied across all SEAFDEC documents and publications in the future to ensure consistency and quality.



DEPARTMENTAL ACTIVITIES

AQD promotes revival of abandoned hatcheries to boost aquaculture production



Chief of AQD, Mr. Dan Baliao, speaks during the On-Site Training Course on Aquaculture where he encouraged the rehabilitation of abandoned and underutilized hatcheries to boost the local supply of crab and fish seeds

SEAFDEC/AQD organized the “On-Site Training Course on Aquaculture” on 23–24 February 2021 in Roxas City, Capiz, Philippines, attended by 34 participants including members of various aquaculture cooperatives, members of the local business sector, and staff from the Bureau of Fisheries and Aquatic Resources (BFAR) Region 6. The topics of the Training include mangrove crab culture, shrimp culture,

recirculating aquaculture systems, fish health management, and milkfish deboning, which were delivered by resource persons from AQD and BFAR. The training which is part of AQD’s Joint Mission for Accelerated Nationwide Technology Transfer Program (JMANTTP) was carried out in collaboration with BFAR. JMANTTP is tasked to conduct techno-caravans, field demonstrations, and hands-on

training courses in different areas in the Philippines with support from BFAR.

Moreover, the Training also served as a venue for dialogue with fish farmers as part of AQD’s program to help revive the local aquaculture industry. Capiz produced 2,000 t of cultured mangrove crabs worth over USD 20.5 million in 2019 making up 11 percent of the Philippine mangrove crab output from aquaculture in terms of value. However, there were not enough suppliers of crablets in Capiz. Even though the AQD hatchery, based in nearby Iloilo, could supply crablets, the volume is still not enough, so they had to buy wild crablets from distant areas which resulted in massive transportation losses.

During the Training, the Chief of AQD, Mr. Dan Baliao, encouraged the fish farmers to rehabilitate their abandoned and underutilized hatcheries for the production of the much-needed crablets and fish fry to boost the aquaculture industry in Capiz. In this regard, AQD and BFAR would start profiling abandoned and underperforming hatcheries to make them become operational again. ✦

Coastal residents spot turtle hatchlings

Seventeen olive ridley turtle hatchlings were released to the sea at Barangay Buyu-an, Tigbauan, Iloilo,

Philippines (near SEAFDEC/AQD’s Tigbauan Main Station) on 8 March 2021 after residents reported seeing the

turtles wandering into their homes near the beach. Technical staff and volunteers from the nearby FishWorld of AQD responded to the concern and facilitated the hatchlings’ safe release. A nesting site filled with unhatched eggs was also found in a nearby area. Representatives and officials from relevant agencies in Tigbauan helped locate and secure the site by fencing off the nest to protect against predators. ✦



Olive ridley turtle hatchlings spotted by the residents of Barangay Buyu-an, Tigbauan, Iloilo, Philippines that were released to the sea

Data collection for gender analysis in Lao PDR



Under the project “Gender Dimension in the Value Chain of Small-scale Fisheries and Aquaculture” implemented by SEAFDEC and Food and Agriculture Organization of the United Nations, SEAFDEC/TD in collaboration with the Department of Livestock and Fisheries (DLF) of Lao PDR conducted

the data collection for gender analysis of inland aquaculture in Bolikhamxay Province, Lao PDR from 25 to 29 January 2021. The enumerators involved were five DLF officers who were trained on gender analysis. The study site was in Pakxan District of Bolikhamxay Province where 26 respondents were interviewed.

Subsequently, data validation workshop was organized on 22 March 2021 to recheck the collected data on the roles of women and men in inland aquaculture of Lao PDR, which was participated by 36 local stakeholders. The analyzed data would be incorporated in the final report of the Project. ❖

Virtual training for IFRDMD research assistants

IFRDMD in collaboration with the Charles Sturt University, Australia organized the virtual training for its research assistants from 22 to 24 February 2021 in Palembang, Indonesia with funding support from the Australian Water Partnership (AWP) and Australian Centre for International Agricultural Research (ACIAR). The objective of the Training was to support the effort of IFRDMD in maintaining riverine fish biodiversity. The participants include university students and fresh graduates who are research assistants at IFRDMD, and were trained to conduct socioeconomic surveys applying the research ethics when humans are



involved in studies of riverine fish biodiversity.

Dr. Jennifer Bond and *Mr. Dwi Atminarso* from Charles Sturt University served as the resource persons of the Training which covered research ethics, social research survey, and practice interview. Also, officers from IFRDMD presented the topics on ethics and professional attitude, communication skills and research team coordination, and reporting expenses. During the practical session, the participants were taught on how to conduct interviews, respect respondents’ autonomy, and record data properly. ❖



SEAFDEC takes part in sharing of information on impacts of COVID-19 on the fisheries sector

SEAFDEC participated in the virtual seminar “Opportunities in the Time of Crisis: adaptations of Thai fisheries sector during COVID-19” organized by the Faculty of Fisheries, Kasetsart University, Thailand on 15 March 2021. The Webinar aimed to exchange information on the prevailing difficulties faced by the fisheries sector due to COVID-19. The panelists of the Webinar included the former Director-General of Department of Fisheries, Thailand, *Mr. Niwat Sutteemeechaikul*, representative from Thai Tuna Industry Association, *Dr. Chanintr Chalisarapong*, and SEAFDEC Secretary-General, *Ms. Malinee Smithrithee*. More than 160 online and on-site participants in the Webinar included lecturers, university students, officers from the Department



of Fisheries of Thailand, representatives from the private sector, and others.

During the session, *Ms. Malinee* presented the current situation of the commercial fisheries, small-scale fisheries, and aquaculture of the Southeast Asian region focusing on the impacts of COVID-19 pandemic that led to

disruptions in several fisheries activities and decreased demand on fish and fishery products. She also presented the key findings of the activities related to the assessment of the impacts of COVID-19 on fisheries sector of the region based on results of the FAO survey from the INFOFISH trade news, and those from the SEAFDEC webinar. ✕

Catfish farm's production surges with AQD assistance



Zarraga Pantat Fingerlings Hatchery Manager, Mr. Larry Pañoso, inspects the hatchery tanks where catfish eggs and fry are nurtured before moving them into grow-out ponds



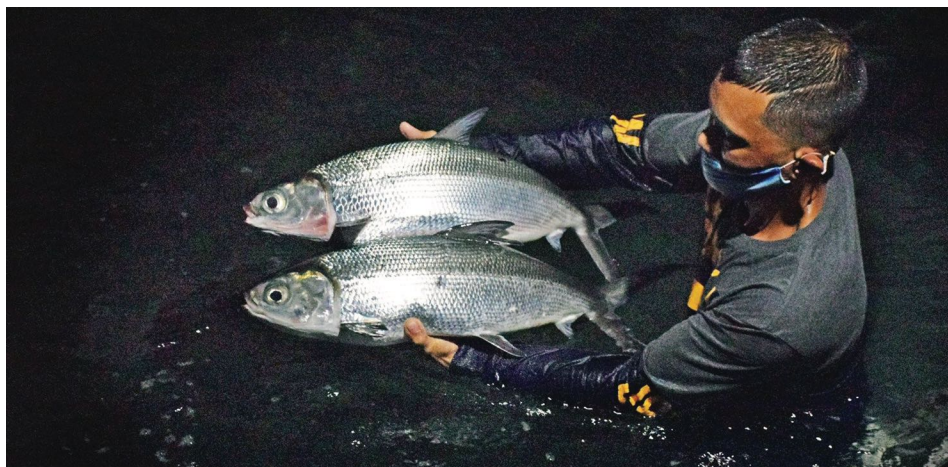
African catfish (Clarias gariepinus) breeders in Zarraga, Iloilo, are awaiting hand-stripping, or the removal of eggs for external fertilization and production of seeds

SEAFDEC/AQD experts assisted a hatchery operator of the catfish farm, Zarraga Pantat Fingerlings, in Zarraga, Iloilo, Philippines to solve the low production of catfish seeds. The catfish farm was one of the many hatcheries struggling to keep up with the demand for catfish seeds, especially that most of their collected eggs fail to hatch while surviving fry die before they could be sold to other farmers. In early 2020, the hatchery produced just 60,000 fry per week, but production began to decline in June 2020 when eggs failed to hatch, leading the operator to seek assistance from AQD.

In response, AQD dispatched a team composed of a chemist, fish biologist, microbiologists, and engineers to evaluate the hatchery operations, and it was found that the facility's water source had very high hardness which affected the hatching of catfish eggs. One of the deep wells that served as the farm's primary water source reached hardness levels as high as 500 ppm when water hardness levels for egg hatching should be ideally between 30 ppm and 60 ppm. Upon the advice of AQD experts, rainwater was mixed with water from a deep well to reduce the water hardness

level in the hatching tanks. Since then, no further problems were encountered in the hatchery and the facility produced record-breaking numbers of seeds. After AQD helped resolve the problem with the water source, the hatchery produced an all-time high of 500,000 catfish fry per week in January 2021. Furthermore, with AQD's advice, the hatchery also upgraded its biosecurity measures by disinfecting breeders and eggs after each induced spawning session, and monitoring of water parameters was also done more vigilantly. ✕

New broodstock facility stocked with hundreds of milkfish breeders



A technician releases milkfish breeders into the new broodstock tanks of AQD in Tigbauan, Iloilo, Philippines

Hundreds of milkfish breeders were stocked in SEAFDEC/AQD's newly-constructed broodstock facility at its main station in Tigbauan, Iloilo, Philippines, which is composed of four broodstock tanks with a capacity of 500 t per tank. The milkfish breeders, weighing 3.5–5.0

kg per piece, were acquired by AQD on 22–23 March 2021 from a farm in Dumangas, Iloilo, Philippines. More breeders were also stocked on 30 March 2021 after transporting them from AQD's fish cages in Guimaras, Philippines. The goal was to have at least 400 additional

milkfish breeders, on top of about 300 already stocked in older tanks at AQD.

With these new breeders, AQD projects to produce an additional 320 million milkfish eggs annually to hatch an estimated 256 million larvae that could be supplied to satellite hatcheries and nursery ponds/tanks around the country. The move is in support of the Bangus Fry Sufficiency Program of the Philippine Bureau of Fisheries and Aquatic Resources. Currently, AQD provides milkfish fry to local fish farmers of Panay Island, Philippines and other areas where transportation is unhindered by periodic COVID-19 lockdowns. Towards the end of March 2021, deliveries were made to three locations in Iloilo, two in Guimaras, and one each in Negros Occidental and Masbate. ❏

FishWorld rescues stranded dolphin in Tigbauan waters



A Risso's dolphin calf was rescued after being stranded in Barangay Buyu-an, Tigbauan, Iloilo, Philippines



FishWorld officer-in-charge, Mr. Stephen Alayon, assisted in the safe release to the sea of the stranded dolphin calf

The museum-aquarium and visitor center of SEAFDEC/AQD, FishWorld, responded to a dolphin stranding incident on the shores of Barangay Buyu-an, Tigbauan, Iloilo, Philippines (near AQD's Tigbauan Main Station) last 15 February 2021. It was found that the dolphin calf was emaciated and had two cookiecutter shark bites on its body. Also, the Bantay Dagat (sea watchers group) and Philippine Coast Guard of Iloilo Province and Tigbauan Municipality responded and monitored the coastline

for re-stranding as young dolphins are considered unlikely to survive without their mothers. Fortunately, no re-stranding was reported after few days.

Moreover, to guide the locals on its proper handling of stranded mammals and before releasing it back to the sea, the officer-in-charge of FishWorld, *Mr. Stephen Alayon*, said that they would intensify the dissemination of Information, Education, and Communication (IEC) materials

and strengthen information literacy campaigns among the residents. Locals unknowingly caused more stress and harm to the mammal because of their limited knowledge on proper handling where they poured water in the blowhole.

With the assistance of the senior museum researcher from the National Museum of the Philippines, *Dr. Jo Marie Acebes*, the calf was identified to be a Risso's dolphin (*Grampus griseus*). Although this species commonly resides in deeper waters and on the edge of the continental shelf across temperate and tropical oceans worldwide, they often come closer to shores where there are steep drop-offs or plenty of food. In the Philippines, all cetaceans like dolphins and whales are protected under laws. However, accidental entanglement in fishing gear, hunting, overfishing, habitat destruction, and the presence of marine debris and plastic pollution continue to pose threats to these species on a global scale. ❏

Regular survey for Eel Catch Sampling in Pelabuhan Ratu, Indonesia



Survey for Eel Catch Sampling in Pelabuhan Ratu, West Java, Indonesia” on 12–15 February 2021. This survey is part of the project “Development of Stock Assessment Method and Strengthening of Resources Management Measures for Tropical Anguillid Eel in Southeast Asia” supported by SEAFDEC/JAIF Project Phase II.

During the survey, the team visited Cimandiri and Cikaso Rivers as representative eel’s fishing ground in West Java. These rivers are well known for their fishing ground in Indonesia. *Anguilla bicolor* is a dominant species of eel in both locations. The team set the fishing gear in possible spots and monitored the rivers’ water quality. Four water quality parameters were measured, *i.e.* depth, water temperature, pH, and

dissolved oxygen (DO). In general, the water quality of Cimandiri and Cikaso was good enough for aquatic life, and especially supported by the abundance of glass eels during the observation. The abundance of glass eels in Pelabuhan Ratu was high since December 2020, as evidenced when the fishers got high catch on short period (15–30 minutes for one fishing activity). Besides, the team could see movements of glass eels during the day.

Water quality monitoring is one of the important aspects in assessing and managing the eel’s ecosystems. Results of the monitoring and the updated information on water quality from this survey would provide the fundamental information for eel resources management. ❖

The Survey Team led by SEAFDEC/IFRDMD carried out the “Regular

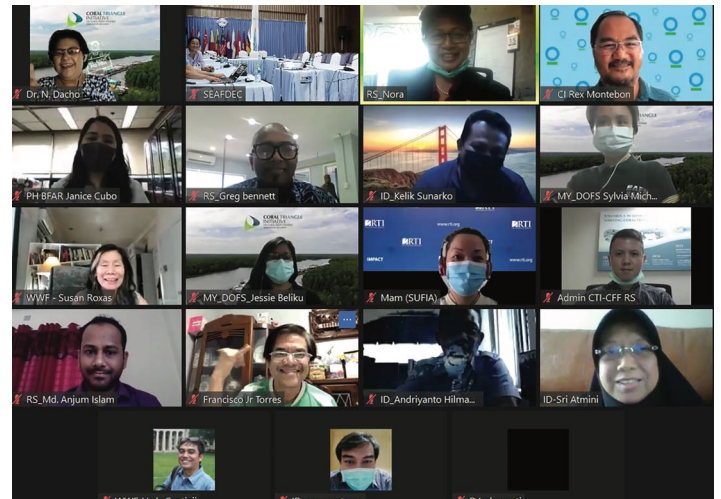
SEAFDEC participates in the EAFM Working Group online call meeting of CTI-CFF



SEAFDEC participants during the CTI-CFF meeting

SEAFDEC/TD Senior Instructor/Researcher, Ms. Panitnard Weerawat, represented SEAFDEC during the online meeting of the Ecosystem Approach to Fisheries Management Working Group (EAFM WG) organized by the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF) on 15 March 2021. The Meeting was aimed at discussing the preparation for the ASEAN Pre-Senior Officials Meeting (Pre-SOM) and SOM.

During the Meeting, SEAFDEC reported the activities related to the promotion of EAFM in the SEAFDEC Member Countries. In summary, SEAFDEC has trained approximately 415 trainees on Essential Ecosystem Approach to Fisheries Management (E-EAFM) and 90 E-EAFM trainers. SEAFDEC also developed the EAFM for Leaders, Executives, and Decision Makers (LEAD). The Implementation of EAFM (I-EAFM) as a result from



Participants during the CTI-CFF meeting

the learning sites in Cambodia, Lao PDR, Myanmar, and Thailand was also presented.

At the Meeting, the Regional Secretariat of CTI-CFF reported the updates on the workplan for 2020, selected SOM-15 Decisions for EAFM and EAFM Terms of Reference and change of Chair and Co-Chair, and the draft EAFM WG Recommendations at Pre-SOM and SOM. ❖

Onsite training on fish handling for small-scale fishers in Krabi Province, Thailand



Participants during the fish handling training

SEAFDEC/TD organized the “Onsite Training on Promotion of Fish Handling Technique and Labor-saving Equipment for Fisheries” on 18 February 2021 in Baan Nai Nang, Krabi Province, Thailand. There were 30 small-scale fishers who participated in the Training,

which aimed to enhance the knowledge of small-scale fishers in keeping the high quality of fish through the use of a sorting table as a labor-saving equipment.

to fisheries management implemented by TD in collaboration with the Department of Fisheries, Thailand. ❖

Baan Nai Nang is also a one of the of project sites for the ecosystem approach

AQD staff upgrades skills, learns basic video editing

SEAFDEC/AQD organized a training-workshop on basic video shooting and editing to help meet the increasing need for digital content in training courses and information dissemination programs. The Workshop was organized in Tigbauan, Iloilo, Philippines on 22–23 March 2021 which was attended by 17 AQD staff involved in

training and information dissemination activities. Other participants from AQD’s Binangonan Freshwater Station in Rizal, Philippines attended the Workshop through Zoom platform.

The resource person of the Workshop, *Mr. Ritz Meir Hornada*, is a cinematographer and video editor

who has over a decade of experience in creating media for multiple platforms. The topics of the Workshop include basic camera settings, shooting angles, camera movements, proper lighting, shoot conceptualization, video project management, video editing, among others. ❖



Mr. Ritz Meir Hornada (above) teaches AQD staff how to use Adobe Premiere in editing videos



SPECIAL REPORT

Sustainable Utilization and Management of Sharks and Rays in the Southeast Asian Region

by Wahidah Mohd Arshaad, Hamizah Nadia Alias@Yusof, and Abd Haris Hilmi Ahmad Arshad

(SEAFDEC/MFRDMD)

The Marine Fishery Resource Development and Management Department (MFRDMD) of SEAFDEC has undertaken the vital effort of formulating the Regional Plan of Action (RPOA-Sharks) for the conservation and management of sharks and rays in the Southeast Asian region. RPOA-Sharks emphasized on the need to manage and exploit the shark resources at a sustainable level while safeguarding the fishers' livelihoods. Although sharks and rays are not targeted for most fisheries in the region, any decision made on regulating the international trade by listing several common species of sharks and rays in Appendix II CITES would affect the livelihoods of the region's traditional fishers and traders.

regional researchers, development of approaches for managing the resources of sharks and rays, publication of field guide for sharks and rays in national languages as well as the possibility of down-listing from Appendix II to Appendix III of CITES-listed sharks species based on scientific evidence and non-detriment findings.

Data on Landings

Data on the landings of sharks and rays were collected from Kota Kinabalu and Tawau in Sabah and Larut Matang in Perak, Malaysia since 2015. However, due to COVID-19 pandemic, data collection was halted for a few months in 2020.

Project Activities

Since 2003, SEAFDEC/MFRDMD has been implementing a series of projects on the conservation and management of sharks and rays in the region. The current project funded by the Japanese Trust Fund (JTF) VI Phase II "Research for Enhancement of Sustainable Utilization and Management of Sharks and Rays in the Southeast Asian Region" from 2020 to 2024 has Cambodia, Indonesia, Malaysia, Myanmar, Thailand, Philippines, and Viet Nam as the participating countries. The activities of the Project are mainly conducted in several study sites in Malaysia (**Figure 1**).



Figure 1. Study sites in Malaysia

MFRDMD organized the online First Core Expert Meeting Research for Enhancement of Sustainable Utilization and Management of Sharks and Rays in the Southeast Asian Region on 25 November 2020. During the Meeting, the achievements of the previous project implemented in 2015-2019 were presented. Moreover, several issues were highlighted and discussed during the Meeting including capacity building of

To train new enumerators and enhance the skills of the current enumerators, MFRDMD organized the Workshop on Landing Data Collection on Sharks and Rays Series 1/2020 on 24–27 August, 2020 in Terengganu, Malaysia. The Workshop also included lectures on taxonomy and statistics as well as exercises on the identification of parasites that are found in the digestive and respiratory organs of sharks and rays.

Tissue Sampling for DNA Analysis

In 2020, tissue samples for DNA analysis were collected from samples in Pahang and Terengganu in the east coast of Peninsular Malaysia. A total of 138 sharks (39 species), 259 rays (50 species), and 20 skates (five species) were sequenced for DNA barcoding. The data was submitted to the Barcode of Life Data Systems (accessed at <http://boldsystems.org/>) which is an informatics workbench aiding the acquisition, storage, analysis, and publication of DNA barcode records. Moreover, the genetic population structure of *Carcharhinus sorrah*, *Chiloscyllium hasseltii*, and *Sphyrna lewini* would be clarified using mitochondrial DNA marker. For Perak in the west coast of Peninsular Malaysia and Kota Kinabalu and Sandakan, Sabah, sample collection would be continued in 2021.

Freshwater Stingrays

Information on freshwater stingrays in the region is still scanty despite some records that were published in Cambodia, Indonesia, Lao PDR, Malaysia, and Thailand. In Peninsular

Malaysia, freshwater stingrays have been recorded in Pahang River and Jelai River in Pahang; Kelantan River, Pergau River (**Figure 2**), and Nenggiri River in Kelantan; Perak River in Perak; and Sembrong River and Endau River in Johor. The species were confirmed as *Fluviatrygon signifier* (Compagno & Roberts, 1982) found in the Jelai River and Kelantan River, *Urogymnus polylepis* (Bleeker, 1852) in Sembrong River, and *Fluviatrygon kittipongi* (Vidthayanon & Roberts, 2006) (**Figure 3**) in Perak River. However, the specimens from other rivers are still unidentified due to morphological uncertainties. MFRDMD has been working closely with Universiti Malaysia Sabah in this endeavor starting 2020. Nevertheless, the compilation of the information on the biodiversity status of freshwater fishes is necessary for sustainable management of inland fishery resources in the region.



Figure 2. Pergau River in Kelantan, Malaysia is one of the sandy rivers where freshwater stingrays inhabit

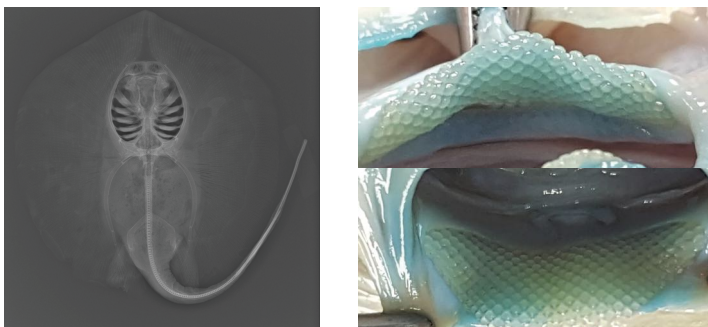


Figure 3. X-ray image (left) and upper and lower row of teeth (right) of *Fluviatrygon kittipongi* specimen

Nursery Ground of Sharks and Rays in Pahang

In 2018, the Department of Fisheries Malaysia and JTF supported the study to identify the nursery ground of sharks and rays in Pahang. Series of trawl surveys (**Figure 4**) were conducted during monsoon season (November–March) and it was found that 97.9 % of sharks and 68.4 % of rays were at juvenile stage, which were released back to the sea after length-weight and sex data were recorded (**Figure 5**). All species were

of high commercial value and have high demand in the market such as *Chiloscyllium hasseltii* (**Figure 6**) and *C. punctatum* for sharks; and *Maculabatis gerrardi*, *M. pastinacoides*, *Neotrygon orientalis*, *Telatrygon zugei*, and *Telatrygon biasa* for rays. In addition, MFRDMD also conducted a collaborative study with Universiti Malaysia Terengganu using carbon 13 ($\delta^{13}C$) and nitrogen 15 isotope ($\delta^{15}N$) stability analysis and to study the juvenile food source network of sharks and rays in Kuala Pahang. The results of the study confirmed that young sharks and stingrays were highly dependent on natural food resources available in the waters of Kuala Pahang.

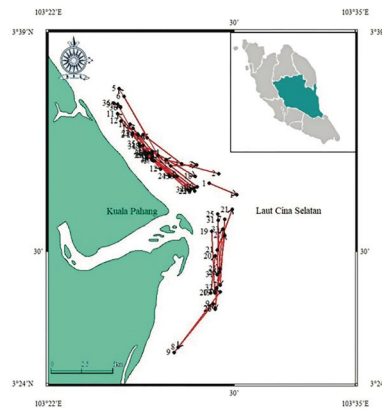


Figure 4. Trawl survey stations for nursery ground study in Pahang, Malaysia



Figure 5. Releasing of juvenile sharks and rays back to the sea after recording the length-weight and sex data

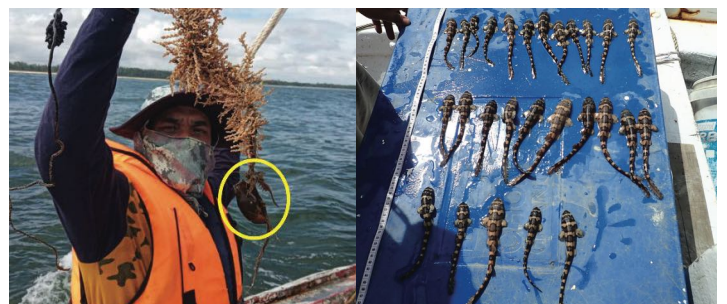


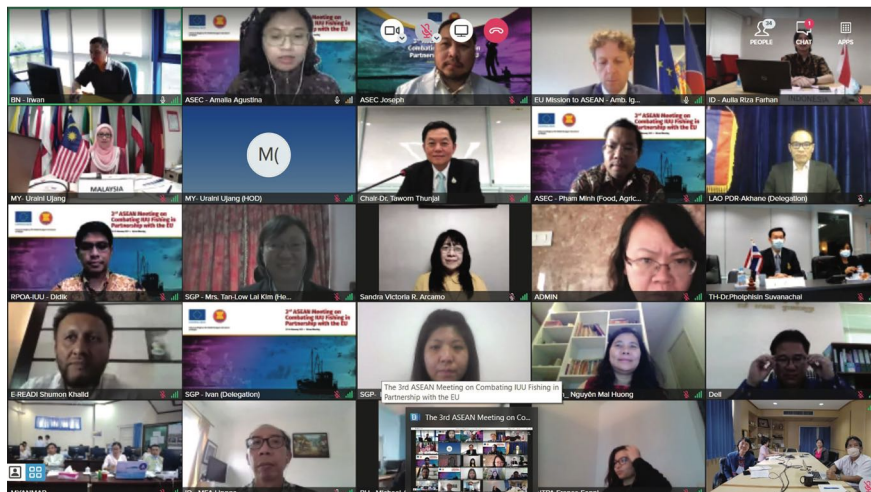
Figure 6. *Chiloscyllium hasseltii* (left: egg case, right: juvenile) caught during the one-hour trawl survey in Pahang, Malaysia

Way Forward

The COVID-19 pandemic has disrupted the implementation of the original plans of the project. MFRDMD would continue to implement the project on sharks and rays, particularly the data collection at selected landing sites, training and workshop on taxonomy and biology, study on genetic population structure of *Carcharhinus sorrah*, *Chiloscyllium hasseltii*, and *Sphyrna lewini*, and survey on fishers' dependencies, marketing and trade in Pontianak, Indonesia. ☒

REGIONAL PROGRAMS

SEAFDEC participates in the 3rd ASEAN Meeting on Combating IUU Fishing in Partnership with the EU



SEAFDEC participated in the “Third ASEAN Meeting on Combating IUU Fishing in Partnership with the EU,” which was convened virtually by the ASEAN Secretariat in collaboration with the Department of Fisheries, Thailand on 23–24 February 2021. The Meeting was attended by the representatives from the ASEAN Member States (AMSs), EU, RPOA-IUU, and SEAFDEC. The Meeting focused on the updates

on the implementation tools and measures to combat IUU fishing by the AMSs and partners. In addition, the Meeting discussed the updates on the establishment of the ASEAN Network for Combating IUU Fishing and the online communication platform developed by Thailand.

Representatives from SEAFDEC, led by Ms. Malinee Smithrithee, Secretary-

General of SEAFDEC, as well as officials from SEAFDEC Secretariat and TD, attended the Meeting. On this occasion, the SEAFDEC activities on combating IUU fishing during 2020–2021 were presented as well as the new ASEAN-SEAFDEC Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Towards 2030 wherein the Resolution No. 8 specifies the need to “Strengthen cooperation among AMSs and with international and regional organizations in combating IUU fishing and management of fishing capacity to balance available resources.” SEAFDEC also presented the progress of implementation of the three regional initiatives related to IUU fishing, i.e. the ASEAN Guidelines to Prevent the Entry of Fish and Fishery Products from IUU Fishing Activities into the Supply Chain, Regional Fishing Vessels Record, and the ASEAN Catch Documentation Scheme.



Meeting on preparation of baseline survey for EAFM planning in Krabi Province, Thailand



SEAFDEC/TD in collaboration with the Department of Fisheries, Thailand organized the meeting on preparation of baseline survey for the ecosystem approach to fisheries management (EAFM) planning in Krabi Province,

Thailand from 24 to 26 March 2021. The 13 fisheries officers who would serve as enumerators participated in the Meeting. Under the project “Small-scale Fisheries Management for Better Livelihood and Fisheries Resources,” the Meeting aimed

to clarify the methods of the baseline survey including the questionnaire and data analysis which would be conducted from 29 March to 9 April 2021.



Data collection to assess fisheries management in Buri Ram Province, Thailand



Participants during the activity in Buri Ram Province, Thailand.

SEAFDEC/TD in collaboration with the Department of Fisheries, Thailand collected data from Subsomboon Village in Buri Ram Province, Thailand on 2–4 March 2021 under the project “Small-scale Fisheries Management for Better Livelihood and Fisheries Resources.” The data collection was also intended

to assess the fisheries management practised in the Province as well as the aspects on gender integration and livelihood improvement in the fishing community.

A total of 47 households who are beneficiaries of the Subsomboon Aquatic

Animal Food Bank were involved in the activity. Subsequently, the analyzed data would be shared to the community for validation and would be included in the case study on gender integration in fisheries management in Thailand.



SEAFDEC convenes the meeting for SCS SAP Project



Participants during the SCS SAP Project meeting

SEAFDEC convened the online “Briefing on UNEP GEF Implementing the Strategic Action Programme for the South China Sea and Gulf of Thailand (SCS SAP Project)” on 3 March 2021.

The Meeting was attended by the SEAFDEC National Coordinators and representatives from Cambodia, Indonesia, Philippines, Thailand, and Viet Nam as well as the SEAFDEC

Secretary-General and officials from SEAFDEC Secretariat and Training Department. During the Meeting, the current status of the SCS SAP Project was discussed including the review of the project design and activities in line with the current national initiatives and priorities (e.g. Sustainable Development Goals and 2030 Agenda and Convention on Biological Diversity Post 2020 Biodiversity Framework).

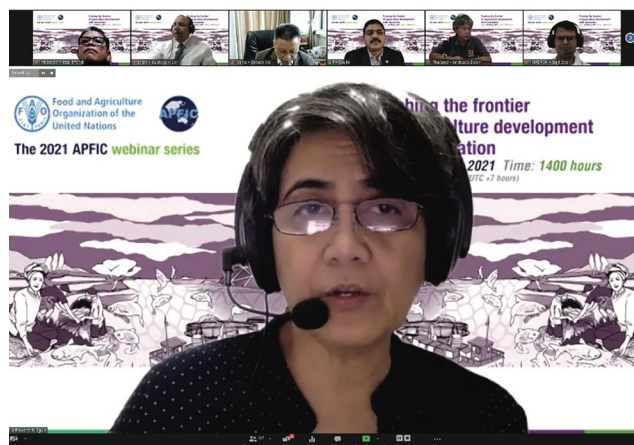
The SCS SAP Project has three main components, namely: 1) reducing habitat degradation and loss via national and local reforms; 2) strengthening knowledge-based action planning for the management of coastal habitats and land-based pollution to reduce environmental degradation; and 3) facilitating regional and national level integration and cooperation for implementation of the South China Sea and Gulf of Thailand Strategic Action Programme.



FUTURE ACTIVITIES

Date	Venue	Title	Organizer(s)
2021			
30 Mar - 1 Apr	Online Workshop	Online Practical Workshop on the Use of eACDS Application Version 2 for Fisheries Officers of Brunei Darussalam	SEAFDEC/TD
6 April	Webinar	Webinar on Information Technology for Small-scale Fisheries	APFIC
7-9 April	Online Workshop	Online Practical Workshop on the Use of eACDS Application Version 2 for Fisheries Officers of Viet Nam	SEAFDEC/TD
8 April	Webinar	Webinar on Co-management of Small-scale Fisheries	APFIC
8 April	Webinar	Webinar on Guidelines for Microfinance and Credit Services in Support of Small-Scale Fisheries	CAFI-SSF Network
21 April	Virtual Event	Webinars on Technological Innovation: e-dialogue on Seaweed ‘Diversity and Technology: Towards a Sustainable Seaweed Industry’	INFOFISH
27-28 April and 11 May	Virtual Meeting	53 rd Meeting of the SEAFDEC Council	SEAFDEC
5-7 May	Virtual Meeting	36 th Session of the Asia-Pacific Fishery Commission (APFIC)	APFIC
19-21 May	Virtual Conference and Exhibition	TUNA 2021 World Tuna Conference & Exhibition “The Global Tuna Industry: Trailblazing through tough times”	INFOFISH
24-28 May	Virtual Meeting	8 th General Session of the World Assembly of National Delegates of the OIE	OIE
27 May	Video Conference	16 th Meeting of the ASEAN Working Group on the Convention on International Trade in Endangered Species of Wild Fauna and Flora and Wildlife Enforcement (16 th AWG-CITES and WE)	ASEAN
31 May-4 Jun	Virtual Meeting	3 rd Meeting to the Parties to the 2009 FAO Agreement on Port State Measures	FAO
May (Tentative)	TBC	Regional Training Course on EAFM Management Tools	SEAFDEC/TD
10 and 17 June	Webinar	SEAFDEC Webinar on WTO Fisheries Subsidies Draft Consolidated Chair Text	SEAFDEC Secretariat
June (Tentative)	TBC	Regional Training/Workshop to Support MCS Implementation in ASEAN	TD
14-29 June	Online Training	Training Course on Marine Fish Hatchery	SEAFDEC/AQD
July (Tentative)	TBC	Regional Training Course on Microplastic and Marine Debris in Southeast Asia	TD
July (Tentative)	TBC	Regional Workshop on Action Plans for Supporting the Livelihood and Well-being of Small-scale Fishers in the Member Countries	TD
July (Tentative)	TBC	The Regional Training Course or Workshop on Electronic ASEAN Catch Documentation Scheme in Southeast Asia	TD
July (Tentative)	Onsite Training	Implementation of the EAFM Plan in Ranong Province, Thailand on Promotion of Fish Processing Products	TD
20-21 July	Online Meeting	First Regional Technical Consultation on Fishery Statistics and Information in Southeast Asia	SEAFDEC
8 August	Webinar	Webinar on Gender in SSF/SSA fisheries aquaculture	APFIC
19-20 August	Virtual Conference	8 th International Conference on Fisheries and Aquaculture 2021	Indonesia & Thailand
August (Tentative)	TBC	Regional Capacity Building Workshop on Enhancing Policies and Countermeasures Against IUU Fishing in Southeast Asia	TD
August (Tentative)	TBC	Regional Training Course on the Utilization Techniques of FGIS and RS to Improve Fishing Ground Exploration and Fisheries Management in Southeast Asia	SEAFDEC/TD
September (Tentative)	TBC	3 rd Inter-Departmental Consultation for Finalization of the draft SEASOFIA 2022	Secretariat
September (Tentative)	Online Training (Google Meet)	Training on Fish Handling	TD
September (Tentative)	TBC	On-site Training on Electronic ASEAN Catch Documentation Scheme	TD
September (Tentative)	TBC	Regional workshop on RFVR Focusing on Developing a Platform on Updating Information for AMs Themselves	TD
September	Onsite Training	Implementation of the EAFM Plan in Ranong Province, Thailand on Strengthen Knowledge of Fisheries Officers on Fisheries Management	TD

AQD expert presents aquaculture innovations in APFIC webinar



A screenshot of AQD Scientist Dr. Maria Rowena Eguia presenting her report on the aquaculture innovations in the Philippines (Courtesy of INFOFISH)

AQD Scientist and expert in biotechnological sciences as applied in aquaculture, *Dr. Maria Rowena Eguia*, was tapped to present the aquaculture innovations in the Philippines during the webinar “Pushing the Frontier of Aquaculture Development with Innovation” on 25 March 2021 organized by INFOFISH, Food and Agriculture Organization of the United Nations (FAO), and Asian Institute of Technology via Zoom hosted by INFOFISH in Malaysia. As part of the 2021 Asia-Pacific Fishery Commission (APFIC) webinar series, the Webinar featured country reports on aquaculture innovations in Southeast Asia.

In her presentation, *Dr. Eguia* discussed about the status and trends in Philippine aquaculture as well as the recent researches and innovations for commodities such as mangrove crab, mussel, seaweeds, and milkfish.

She also introduced several technology innovations like the crabifier, a mobile phone application which can identify the different crab species using image analysis based on frontal lobe differences and DNA barcode data. Another one is the Aquabiz application developed by a feed company in the Philippines that includes features such as computation of the daily feed requirement, growth rate, and feed conversion ratio.



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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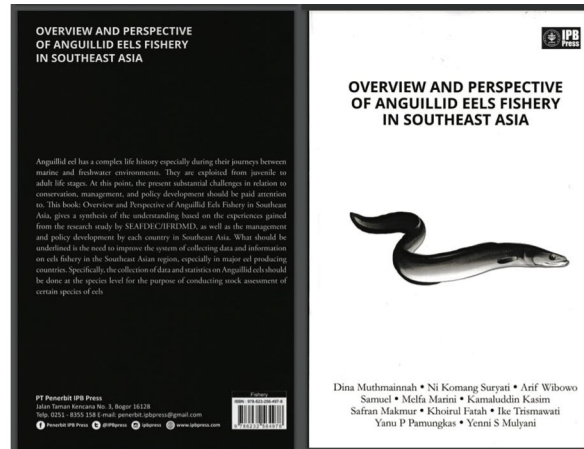
SEAFDEC offers condolences on the demise of Dr. Siri Ekmaharaj



The SEAFDEC family extends deep condolences to the family of *Dr. Siri Ekmaharaj*, who passed on 21 April 2021. *Dr. Siri* served as Secretary-General of SEAFDEC for four years from 2005 to 2009. *Dr. Siri* would be remembered and forever praised for his management of SEAFDEC that led to great progress of the organization and advanced the development of the fisheries of Southeast Asia. In expressing the condolences to the family of *Dr. Siri* during their time of sorrow, the SEAFDEC staff also wished to assure them that *Dr. Siri* will always be remembered in thoughts and prayers.



Launching of the book *Overview and Perspective of Anguillid Eels Fishery in Southeast Asia*



SEAFDEC/IFRDMD launched the book “Overview and Perspective of Anguillid Eels Fishery in Southeast Asia” in March 2021 that describes the complex life history of anguillid eels especially during their journey between marine and freshwater environments. The book also synthesizes the experiences from the study conducted by IFRDMD during 2015–2019 “Enhancement of sustainability of catadromous eel resources in Southeast Asia” as well as the management measures and policies developed by the respective ASEAN Member States.

Anguillid eels are exploited from juvenile to adult life stages, therefore, conservation, management, and policy development are needed for the sustainability of this important resource. Moreover, it is also deemed necessary to improve the system of data collection on eel fisheries in the Southeast Asian region, especially in major eel producing countries. Specifically, the data and statistics should be compiled at the species level for accurate stock assessment of the eel species concerned.



SEAFDEC joins the webinar on review of illegal fishing in APFIC region

SEAFDEC Secretariat Policy and Program Coordinator, *Dr. Worawit Wanchana*, joined as one of the panelists during the webinar “Review of Illegal Fishing in APFIC Region—Launch” organized on 10 February 2021 by the Asia Pacific Fisheries Commission (APFIC) in collaboration with INFOFISH. The Webinar aimed to launch and evaluate the review of illegal fishing in the APFIC region. A collaborative effort between FAO and Commonwealth Scientific and Industrial Research Organisation (CSIRO), the review includes the synopsis of estimation on volume, value, and nature of illegal catch and landing as well as the implications of and possible actions to track illegal fishing in the APFIC region. With representatives from regional organizations, namely: RPOA-IUU,



Participants during the webinar on illegal fishing

SEAFDEC, and BOBP-IGO serving as panelists, feedbacks on the review were also delivered. Specifically, *Dr. Worawit* made suggestions to improve the review such as verification of secondary data and updating of the information. In addition, he also shared the results of the regional technical consultation on IUU

fishing conducted by SEAFDEC in 2020 including the fundamental elements for eliminating IUU fishing as well as the ways forward at regional and national levels to combat IUU fishing in the Southeast Asian region. The recorded Webinar can be viewed at youtube.com/watch?v=D6h6xn7wc6E.

