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EDITORIAL

For the first quarter of 2020, one of the highlighted events was the onset of Phase II of the project on tropical anguillid eel, supported by the Japan-ASEAN Integration Fund (JAIF). This Phase II focuses on the development of methods for assessment of tropical anguillid eel resources.

SEAFDEC also continued to conduct several workshops and trainings including the Practical Workshop on Stock and Risk Assessments of Longtail Tuna and Kawakawa in Southeast Asia to confirm and verify the status of stocks of neritic tunas in the waters of Southeast Asia, and came up with recommendations on the management of neritic tunas. In addition, the Regional Workshop on Gender Integration in Fisheries was organized to develop the module for Gender LEAD, and share experiences and lessons learned in gender integration initiatives in the fisheries sector in Southeast Asia. The Technical

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Available stocks of longtail tuna and kawakawa in Southeast Asian waters being verified



The SEAFDEC Secretariat organized the “Practical Workshop on Stock and Risk Assessments of Longtail (LOT) Tuna and Kawakawa (KAW) in the Southeast Asian Waters” on 10-15 February 2020 at the SEAFDEC Training Department (SEAFDEC/TD) in Samut Prakan, Thailand. Attended by representatives from the SEAFDEC Member Countries, namely: Brunei Darussalam, Cambodia, Indonesia, Malaysia, Myanmar, Thailand, and Viet Nam, and observers from the Research Institute of Far Seas Fisheries (Japan), as well as representatives from the SEAFDEC Secretariat, MFRDMD, and TD, the training had *Dr. Tsutomu (Tom) Nishida* and *Mr. Supapong Pattarapongpan* as resource persons. The Workshop was aimed at promoting sustained utilization of neritic tunas in the Southeast Asian waters and also at sharing the data compiled and quality control techniques based on the recommendations during the 5th Meeting of the Scientific Working Group, with Brunei Darussalam serving as coordinator in the compilation and preparation of the data for this Workshop. During the Workshop, the discussion focused on the updates on the stock and risk assessments of LOT and KAW.

It should be recalled that starting 2015, the SEAFDEC Secretariat, MFRDMD and TD organized series of training-workshops on the stock and risk assessments of neritic tunas, especially LOT and KAW with *Dr. Nishida* as the resource person. The practical training sessions are deemed necessary to confirm and verify the status of stocks of neritic tunas in the waters of Southeast Asia using data from the respective countries and in order that concerned technical persons from the region could gain experience in the assessment methodologies using their respective compiled data. Thus, during the Practical Workshop, the participants practiced the specific software for stock assessment analysis, e.g. CPUE standardization, ASPIC, Kobe Plot I-II, and risk assessment using the available data and present the results of the stock assessment analysis. The Workshop also came up with recommendations on the management of neritic tunas in the Southeast Asian waters. The results of stock and risk assessments of LOT and KAW will be submitted for consideration during the 6th Meeting of Scientific Working Group on Neritic Tunas in 2020 to be hosted by MFRDMD. ☒

EDITORIAL

(Continued from Page 1)

Ad-hoc Meeting on Marine Debris was organized to establish and strengthen the marine debris research networks; and the Training Course on Inland Fishing Gears was also organized to enhance understanding on the need to conduct baseline survey on inland fishing gears, and analyze the results of the survey.

During this quarter, several activities were conducted by SEAFDEC/AQD including the study on new species of soil-cleaning worm which has the ability to eat decomposed feed from aquaculture and has the potential as food for crab and shrimp breeders; upgrading of the feed mill facilities to boost production of low-cost aquaculture feeds; developing of techniques to double crablet production; providing recommendations on backyard catfish farming; addressing the perennial shortage of milkfish fry; and establishing the hatchery technology for mackerel tuna (kawakawa) farming.

In addition, SEAFDEC continues to play a key role in capacity building of AMSs and strengthening of collaborations with various organizations and agencies through the participation in international and regional fora, which served as platforms for formulation of solutions toward sustainability in fisheries sectors in Southeast Asian region.

Moreover, SEAFDEC welcomed *Dr. Toshiya Suzuki* as the new Deputy Chief and Japanese Trust Fund Co-manager of SEAFDEC/IFRDMD, succeeding *Dr. Takuro Shibuno* who served as the Deputy Chief and Japanese Trust Fund Co-manager of SEAFDEC/IFRDMD for two years. ❖

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You can also send your comments on our Newsletter to secretariat@seafdec.org.

SEAFDEC participates in the FAO regional workshop to address IUU fishing



SEAFDEC representative (on the stage) during the FAO regional workshop on IUU fishing

SEAFDEC was represented during the “Regional Workshop on Sharing National Priorities for Addressing Illegal, Unreported and Unregulated (IUU) Fishing in the Bay of Bengal and Gulf of Thailand,” which was organized by FAO in Bangkok, Thailand on 14-15 January 2020. The Workshop was attended by 30 delegates from the South Asian and Southeast Asian countries as well as representatives from international and regional organizations (*i.e.* SEAFDEC, RPOA-IUU, BOBP, INFOFISH, Oceanmind, and CSIRO). The Workshop identified the constraints and barriers on combating IUU fishing, discussed on how to address such constraints and barriers, and identified the information that could

be shared and the sharing mechanism for such information in combatting IUU fishing. At this Workshop, SEAFDEC presented the regional initiatives that had been undertaken in combating IUU fishing including the ASEAN Guidelines to Prevent the Entry of Fish and Fishery Products from IUU Fishing Activities into the Supply Chain, Regional Fishing Vessels Record, ASEAN Catch Documentation Scheme, capacity building on port State measures implementation, as well as strengthening of the MCS networks and cooperation in the Gulf of Thailand and Northern and Southern Andaman Sea sub-regions. SEAFDEC also shared the progress and future plans of such activities. ❖

Social media: a tool in enhancing the visibility of AQD

With the aim of increasing its reach to the target audience, SEAFDEC/AQD organized a social media training in Iloilo, Philippines on 21 January 2020 which was intended for the staff who will be handling the social media accounts of the Department. There were a total of 15 AQD staff, mostly from the Training and Information Division who attended the Training. The social media strategist of Oceana Philippines, *Mr. Lorenzo Arada*, served as the resource person of the training. Several topics including social media platforms, features, and terms; establishing a brand in social media; creating highly engaging posts; growing and engaging the target audience; creating a social media strategy; among



Mr. Lorenzo Arada (standing) supervises the participants of the social media training

others were covered during the Training. There were also activities on creating captions and making a social media calendar. ❖

AQD upgrades its feed mill to boost production of low-cost aquaculture feeds

The quest for low-cost and eco-friendly aquafeeds received a boost with the recent US\$ 30,800 upgrade of the feed mill of SEAFDEC/AQD.

AQD acquired a 5-layer dryer and an extruder for its feed mill to further increase its capacity by 300 kg per hour or 2,400 kg per 8-hour workday. The extruder is used to produce both sinking and floating aquafeeds. Before the upgrade, the feed mill can only produce 500 kg per day due to the limited capacity of the ovens which is the main equipment used for drying feeds.



New 5-layer dryer replaces the ovens previously used to dry feeds at AQD's feed mill

The recent upgrade boosted the production rate by almost 400 percent and provides backup in case of downtime for maintenance or unexpected breakdowns.

The feed mill produces diets for abalone, grouper, mangrove crab, milkfish, pompano, sea bass, shrimp, siganid, and tilapia as well as feed ingredients that are utilized for research projects of SEAFDEC and non-SEAFDEC researchers and graduate students. It also accepts orders from private hatcheries that need maintenance feeds for their marine fish breeders and



New extruder at AQD's feed mill for production of aquaculture feeds



AQD's feed mill facility in Tigbauan, Iloilo

larvae which are not readily available commercially.

With feeds accounting for over 50 percent of the production cost in aquaculture, AQD is mandated to formulate and test feeds that use cheaper alternative ingredients and depend less on wild-sourced fish. Conventional feeds rely on fish meal, a fish-based and protein-rich ingredient that is controversial for having been sourced from fish in the oceans to feed the fish in farms. ✖

AQD reminds shrimp growers to avoid stocking ponds during cold months

To prevent the entry of shrimp diseases, shrimp farmers are advised by the experts from SEAFDEC/AQD not to stock their ponds during cold months if their farms are not biosecurity-compliant or fully equipped to prevent the entry of shrimp diseases. Shrimps get stressed when exposed to temperatures below 27 °C, and a drop in temperature weakens the immune response of shrimp, thereby making them prone to infection. For shrimp farms, especially those not fully equipped to prevent the entry of land, water, and air-borne pathogens and disease carriers, AQD recommends having only one production run per year within the warmer months. Extra precautions to prevent the entry of diseases could be done by using high health or specific pathogen free (SPF) postlarvae (PLs), effective pond water



A shrimp pond at AQD's Dumangas Brackishwater Station, ready for harvest in October 2019, seen here with paddle wheels and bird scare devices on top

filtration systems, de-contamination facilities (tire and foot baths) at single farm and pond entrances, and crab fences and bird-scaring devices, among others. To maximize the utilization of shrimp ponds during cold months, high-value marine fish species such as snappers



Tiger shrimp grown and harvested from AQD's ponds in Dumangas last October 2019

and Asian sea bass could be cultured. Inter-cropping with these predatory fish species is advantageous since they prey on wild disease-carrying crustaceans; thus, effectively breaking the chain of contamination within the pond. ✖

SEAFDEC takes part in the Twenty-eighth Session of the Asia and Pacific Commission on Agricultural Statistics

The Senior Information Officer of SEAFDEC Secretariat, *Ms. Saivason Klinsukhon*, participated in the “28th Session of the Asia and Pacific Commission on Agricultural Statistics” in Bali, Indonesia on 10-14 February 2020. The Meeting was convened by the Food and Agriculture Organization of the United Nations (FAO) and hosted by the Government of Indonesia. Representatives from the 24 APCAS Member Countries as well as observers from six non-Member Countries and observers from international/regional organizations also attended the Meeting.



The 28th Session of the Asia and Pacific Commission on Agricultural Statistics

During the Meeting, *Ms. Saivason* presented the ongoing activities of SEAFDEC related to fishery statistics particularly the plan to revise the Regional Framework for Fishery Statistics of Southeast Asia and publish the Southeast Asian State of Fisheries

and Aquaculture 2022 (SEASOFIA 2022). She also mentioned the issues related to the compilation of fishery statistics from the Southeast Asian countries, *e.g.* reporting of aquaculture production by culture environment. Nonetheless, this matter would be

brought for discussion by SEAFDEC and ASEAN Member States in consultation with the FAO during the revision process of the Regional Framework for Fishery Statistics of Southeast Asia tentatively scheduled sometime in 2020. ☒

SEAFDEC improves access to its publications

During the “Inter-Departmental Information Workshop” organized by the SEAFDEC Secretariat on 4-7 February 2020 at the SEAFDEC Training Department in Samut Prakan, Thailand, the issues and concerns regarding the SEAFDEC institutional repositories were addressed in order that the publications of SEAFDEC could be made easily accessible to the stakeholders. Attended by the information-related staff from

SEAFDEC Secretariat and Departments, the Workshop addressed the issues and challenges during the development of the Secretariat and Departmental institutional repositories as well as harmonized the monitoring of repositories. Moreover, the citation monitoring systems which would be undertaken when there is a need to retrieve the citations of particular scientific publications and report such citations, was also introduced.

Furthermore, the Workshop provided the platform for discussion on the recommendations raised during the 2019 Meeting of the SEAFDEC Information Staff Program (ISP) such as the use of social media to increase the visibility of SEAFDEC and the need to ensure data security.

Based on the discussions on the issues related to the SEAFDEC institutional repositories, the Workshop came up with the suggested solutions in order that the publications of SEAFDEC are readily accessible to the target users. On the use of social media, the social media calendar was introduced to serve as planning tool for creating suitable posts by the Departments, while for data security, the Departments were encouraged to consider applying the SSI certificate to their respective websites and institutional repositories in the future. ☒



Participants during the SEAFDEC Inter-Departmental Information Workshop

AQD research project on tuna farming takes off

Japanese technology on farming mackerel tuna (*Euthynnus affinis*), also known as kawakawa, is set to be adopted at SEAFDEC/AQD with the procurement of breeders towards establishing a hatchery in the Philippines. Experimental runs on hatchery and grow-out will be conducted beginning this year through a Japanese-funded project and are expected to perform well given the tropical climate.

Dr. Koh-ichiro Mori, Deputy Chief of AQD and leader of the tuna project, said the Philippines has the optimum condition for rearing mackerel tuna as it requires 20-28 °C of water temperature to achieve rapid growth. Compared to Japan, the seedstocks are expected to grow to the market size of 2.5 kg within only six months.

Dr. Mori and his team are in the process of procuring wild mackerel tuna around the west coast of Panay Island



Freshly caught mackerel tuna being sold in a market at San Joaquin, Iloilo, Philippines, the type that AQD hopes to begin breeding this year in the Philippines.

to start breeding the fish. After breeding the tuna for one or two years, seed production would be carried out starting in 2021 or 2022, while the “full cycle aquaculture” with eggs from hatchery-bred breeders ideally hatching should be attained by 2023 or 2024.

Mackerel tuna has a comparable taste with bluefin tuna, a highly prized fish, and is becoming popular in Japan as sashimi and ingredient for sushi costing

around US\$ 32 per kilogram. Mackerel tuna is more practical to farm compared to yellowfin tuna, another popular tuna species. Yellowfin tuna grows larger compared to mackerel, requires bigger cages and consumes a bigger quantity of feeds which would be difficult on the part of small-scale farmers. To farm mackerel tuna, small-scale fish farmers could use small cages that are around 10 m² for grow out. ☒

Backyard catfish farming, an accessible source of income for Filipinos

The simplicity of catfish farming makes it a viable source of income and food for many rural households. Based on computations made by SEAFDEC/AQD in 2017, a 1,000 m² pond stocked with 10,000 fingerlings can yield 770 kg of catfish and gain a profit of US\$ 456 with 80 percent return of investment.

Catfish can be grown in small earthen freshwater ponds, ideally at least 50 m² in area with 70 cm water depth. However, larger ponds up to 3,000 m² are more economical because more fish can be stocked and harvested if there is enough water supply. Also, concrete tanks may be used, however, about 10 cm of clay soil must be lined at the bottom which should be properly disinfected with lime and fertilized to encourage growth of natural food like in ponds. Morning glory and water hyacinth may be planted, where possible, to serve as natural shelter for the growing catfish, but should not cover more than 20 percent

of the area lest they obstruct the feeding frenzy of the catfish which readily devour feeds, kitchen refuse, trash fish, chicken entrails, or stale bread. To ensure the successful culture of any fish, the use of quality fingerlings from a reliable supplier is necessary. Fingerlings, ideally 3-5 g when stocked, must be uniformly sized and actively swim in groups. Transporting and stocking of fingerlings must be done with care to minimize the stress on the fish. Stocking density can vary between 10 and 20 individuals per m² in ponds or 10-30 individuals per m³ in tanks. During the first month, only 30 to 50 percent of the water must be changed weekly. As the catfish grow and devour more food, water change must be increased to 50 to 70 percent, twice a week until harvest. Feeding rate is 10 percent of biomass during the first two months and tapered to 8 percent until harvest. If all goes well, catfish may be harvested when they reach 80-200 g after four to six months of culture.



The Asian catfish, *Clarias macrocephalus*, is indigenous to the Philippines and is said to have a more tender and more delicious meat than the exotic catfish species

The African catfish (*Clarias gariepinus*), also grown in the Philippines, can grow to larger sizes, but AQD says this exotic species has been outcompeting the more palatable native catfish in the natural environment. Instead, scientists recommend that the indigenous *Clarias macrocephalus* (Asian catfish) and *Clarias batrachus* (Thai catfish) should be grown instead. ☒

IFRDMD expands network with academia



Participants of the IFRDMD Meeting

SEAFDEC/IFRDMD conducted the rapid assessment of inland fisheries in Riau Province, Indonesia on 10-13 February 2020. Also, IFRDMD met with the Dean, lecturers, and students from the Fisheries and Marine Science Faculty of Riau University in Pekanbaru City on 10 February 2020. The Meeting was organized to initiate the collaboration between IFRDMD and Riau University on data collection. During the Meeting, IFRDMD shared the Department's research activities and results in the last five years. Moreover, Riau University shared their experience from previous studies as well as local wisdom of inland fisheries management in the Province, especially in the Kampar River.

Riau Province has potential inland fishery resources and it is one of the pilot sites of the IFRDMD project "Management scheme of inland fisheries in the Southeast Asian region" under the Japanese Trust Fund (JTF) VI Phase 2. One-year research survey on the biodiversity of Kampar River will be conducted using the trial version of the Android mobile application Data Collection of Fishery Activities (DACOFA), which was developed by IFRDMD. As a web-based application, DACOFA could receive real-time information/data, and such data could be accessed and analyzed by IFRDMD staff from their offices. ❖

TD joins the celebration of National Children's Day

SEAFDEC/TD joined the celebration of the National Children's Day in Thailand on 11 January at the Prachunlajomklao Navy Dockyard at the mouth of the Chao Phraya River. With the theme that focused on fishery resources conservation, TD put up a display of information and games enjoyed by several groups of children.



The National Children's Day in Thailand is traditionally organized on the second Saturday of the year. The activities largely received widespread attention from the public, government organizations, especially the Prime Minister and the military that staged impressive shows for the benefit of children as contribution to the future of the nation. ❖

SEAFDEC/TD Staff playing with the children during the National Children's Day celebration in Thailand

High school teachers trained on research methodology at AQD



Dr. Leobert de la Peña, head of AQD's Research Division and one of the resource persons of the training on Research Methodology and Technical Writing

To enhance the capacity of local high school science teachers, a training on research methodology and technical writing was organized at SEAFDEC/AQD with funding support from the Government of Japan Trust Fund. Twenty-two high school science teachers attended the training facilitated by AQD in coordination with the Philippine Department of Education, held from 28 to 30 January 2020 in Tigbauan, Iloilo.

The Training was aimed at enhancing the capacity of teachers to write simple and doable research proposals. During the 3-day training, the teachers listened to lectures and did practical activities on research and development process, experimental design, data and statistical analysis, scientific literature and patent searches, writing research proposals, and technical writing for publication in scientific journals. As their final output from the training, the teachers made research proposals by groups and were critiqued by the resource persons.

This training course for teachers is the second offering of AQD, with the first one conducted last year. ❖

New species of soil-cleaning worm identified by AQD



Marphysa iloiloensis reared at AQD's Polychaete Hatchery in Tigbauan, Iloilo



Jelly cocoons that contains the eggs of *Marphysa iloiloensis*

A new species of mudworm, known to clean the soil in fishponds, was recently identified at SEAFDEC/AQD facilities where its eggs were collected and hatched. The associate researcher at AQD, *Ms. Mary Anne Mandario*, named the new species after Iloilo, the host province of the Department.

Now called *Marphysa iloiloensis*, the eggs were collected and encapsulated in “jelly cocoons” from AQD’s fishponds in Dumangas in Iloilo, Philippines and transported to AQD’s Polychaete Hatchery in Tigbauan, also in Iloilo, where they were hatched and grown to adult size. The new species was listed in the World Register of Marine Species (WoRMS) in September 2019 after it was confirmed

as distinct from other mudworms with the help of Australian taxonomist *Dr. Christopher Glasby* and his team.

Mudworms are commonly found in fishponds and coastal mangrove wetlands and they have the ability to eat decomposed feed from aquaculture and have the potential as food for crab and shrimp breeders. Several studies have shown that polychaetes when used as feed could improve the reproductive performance of crustacean broodstock. Currently, a mass production technique for *M. iloiloensis* is being developed at AQD, and the use of the worms as supplemental diet for shrimp and crab breeders would also be promoted.

Development of a reliable culture technique for this species would lessen dependence on wild stocks as well as attain a disease-free and sustainable supply of mudworm for aquaculture.



TD supports the development of maps for Fisheries Management Units in Krabi Province, Thailand

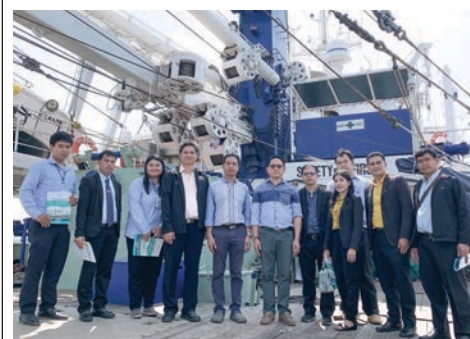
SEAFDEC Secretary-General *Ms. Malinee Smithrithee*, Resource Person *Dr. Somying Piumsomboon*, a senior officer from SEAFDEC Secretariat, and project staff from SEAFDEC/TD visited the learning site of the ecosystem approach to fisheries management (EAFM) at Nainang Village, Krabi Province, Thailand on 9-11 March 2020. During the visit, TD also organized the “Workshop to Develop the Fisheries Management Units (FMUs) Maps” on 11 March 2020. The Workshop was attended by fifteen participants who were fisheries officers and key stakeholders from Krabi Province. The FMUs maps were intended to support the decision-making process of the development of the EAFM plan for Krabi Province. Moreover, the SEAFDEC team also observed the Nainang Apiculture Group and blue swimming crab banks which serve as

alternative source of livelihoods of the people in the village.

Nainang Village was the first fisheries community in Thailand where TD introduced the EAFM concept in 2013. Despite the various challenges, the implementation of EAFM in the village had been successful because of the effective governance that focused on judicious enforcement of fisheries rules and regulations, strong community leadership, and increased engagement and collaboration among fishers and stakeholder groups from various sectors. The thriving EAFM of Nainang Village served as a model and inspiration to other communities in adopting the EAFM approach, thus, the Provincial Department of Fisheries and Department of Fisheries of Thailand made plans to expand the EAFM efforts to encompass the whole Krabi Province in 2020.



Siam Maritime School representatives visit TD



SEAFDEC/TD welcomed the 15 visitors from Siam Maritime School (SMS) on 9 January 2020 to observe M.V. SEAFDEC and learn about SEAFDEC’s role and mission in the region. SMS was established in 2017 by the Marine Thai Group and affiliated company of A & Marine (Thai) Co., Ltd., which supply and service various kinds of navigation and communication equipment, including marine safety equipment, and is widely known to the government and private sector.



SPECIAL REPORT

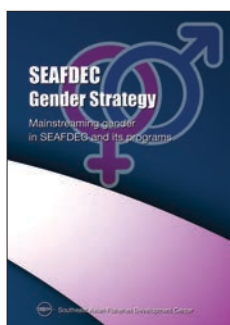
SEAFDEC Initiatives on Mainstreaming Gender in Fisheries and Aquaculture in the Southeast Asian Region by SEAFDEC/TD

Throughout the past decades, the importance of gender equality and equity has been well recognized by several international instruments and policy frameworks, such as the UN Sustainable Development Goals (SDGs) and the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines). In this regard, SEAFDEC also recognizes the need for increased awareness and mainstreaming of gender in fisheries and aquaculture in the Southeast Asian region.

SEAFDEC Gender Strategy

To support the integration of gender perspectives in fisheries and aquaculture within SEAFDEC and its Member Countries, SEAFDEC proposed during the Fiftieth Meeting of the SEAFDEC Council in Siem Reap, Cambodia in March 2018 to develop a gender strategy. SEAFDEC drafted the SEAFDEC Gender Strategy in consultation with the SEAFDEC Gender Focal Persons (SGFP) from Secretariat, TD, AQD, MFRDMD, and IFRDMD during the “Inter-Departmental Meeting on Development of SEAFDEC Gender Strategy” in September 2018 in Bangkok, Thailand. Subsequently, the draft of the SEAFDEC Gender Strategy was presented at the Forty-first Program Committee Meeting in November 2018 and was approved at the Fifty-first Meeting of the SEAFDEC Council in March 2019 in Surabaya, Indonesia.

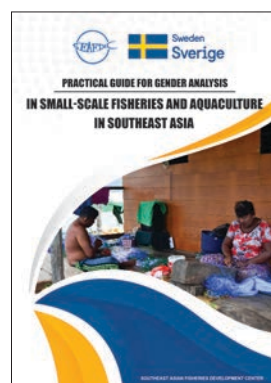
Through the promotion of the SEAFDEC Gender Strategy, SEAFDEC strives to mainstream and integrate gender perspectives into the organization well as in its programs, projects, and activities to ensure that women and men access equitable benefits in the sustainable development and management of fisheries and aquaculture. The five main strategies include 1) Mainstreaming Gender at all levels of the organization, 2) Integrating gender in SEAFDEC programs and projects, 3) Incorporating gender perspectives in all events organized by SEAFDEC, 4) Boosting the visibility of SEAFDEC as a gender-responsive and gender-sensitive organization, and 5) Strengthening further the cooperation and collaboration with Member Countries and other organizations on gender aspects.



SEAFDEC Gender Strategy

Practical Guide for Gender Analysis

Subsequently, the Practical Guide for Gender Analysis in Small-scale Fisheries and Aquaculture in Southeast Asia (Practical Guide) was developed to support the implementation of the SEAFDEC Gender Strategy. The Practical Guide was developed during a series of experts consultation workshops in 2018-2019 organized by SEAFDEC with support from the SEAFDEC-Sweden Project and with the active involvement of gender focal points from the ASEAN Member States (AMSs), SGFPs, gender experts, and partner organizations. The Practical Guide is meant to assist program/project managers, researchers, and fishery officers of the AMSs and fisheries-related organizations including SEAFDEC in the conduct of gender analysis to obtain successful gender mainstreaming in programs and projects on small-scale fisheries and aquaculture in the Southeast Asian region. It could also be used to assist the countries that still do not have a framework on gender in place such as conducting gender analysis to support in the development, implementation, and monitoring and evaluation of gender-sensitive and gender-responsive programs and projects.



Practical Guide for Gender Analysis in Small-Scale Fisheries and Aquaculture in Southeast Asia

Capacity Building Activities

With support from the SEAFDEC-Sweden Project, SEAFDEC organized the following training courses and workshops on gender to enhance the understanding as well as

develop the capacity of SEAFDEC staff on gender aspects and mainstreaming:

- Gender Learning Workshop with OXFAM Thailand (21-22 June 2016 in Bangkok, Thailand)
 - explore the significance and meaning of gender
 - exchange experiences on gender and women in the context of fisheries
- In-house Workshop on Gender Mainstreaming in Fisheries Sector for Staff of Southeast Asia Fisheries Development Center (26-28 July 2016 in Nakhon Nayok Province, Thailand)
 - raise the understanding on gender and relevant concepts
 - increase the understanding of different tools for gender mainstreaming in the project cycle
 - promote gender to apply the concept in work and life
- In-house Intensive Training Workshop on Gender Analysis for SEAFDEC Staff (24-26 January 2017 in Phetchaburi Province, Thailand)
 - enhance the capacity on utilizing the gender analysis tools (sex-disaggregated data, gender-sensitive indicators, gender budgeting, gender in M&E and reporting, among others)
- Gender Sensitivity Training Course for SEAFDEC Secretariat and Training Department Staff (4-5 April 2017 and 1-2 May 2017 in Bangkok, Thailand)
 - raise the awareness of SEAFDEC staff on gender
 - promote gender equity and equality in the organization
- Research and Guidance Workshop for Using Toolkit for Gender Analysis in Coastal Communities: Orientation to SEAFDEC data collectors (18 to 22 September 2017 in Trat Province, Thailand)
 - mentor the data collectors in conducting gender analysis
- Data Analysis Workshop on Gender Dimension in Fishery Management in Coastal Communities (6-9 February 2018 in Bangkok, Thailand)
 - increase understanding of gender and social inequality issues
 - provide assistance in analyzing gender issues based on the data collected from the field
- Intensive training on Gender Analysis for SEAFDEC staff and Gender Analysis in Fisheries Sector Workshop for SEAFDEC Gender Working Group (5-8 March 2018 in Bangkok, Thailand)
 - enhance the capacity on applying the methods and tools of gender analysis in the fisheries sector

Gender Study

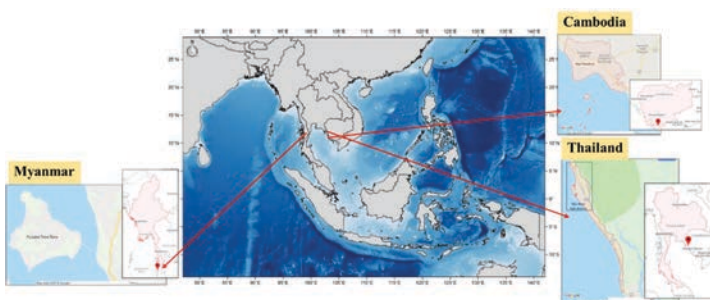
Furthermore, with support from the Government of Sweden and in partnership with IUCN/MFF and Stockholm Environment Institute (SEI), SEAFDEC conducted the regional gender study in 2017-2018. The gender study explored the gender patterns in coastal and marine resources management to improve the understanding of the state of women and men in environmental decision-making and structural challenges that prevent equitable opportunities for women and men. The study sites include Kep Province in Cambodia, Kawthaung Province in Myanmar, and Trat Province in Thailand.

The study found that, generally, both women and men were involved in various fisheries-related activities. Fishing is a male domain and women support men in their fishing endeavor at sea by doing onshore activities, such as cleaning nets and vessels, mending fishing gear, and segregating, processing, and marketing the catch. However, in terms of decision-making and land ownership, women had less involvement; and the household leaders are mostly men because it is believed that men make better decision than women. Therefore, there is a need to empower women to ensure gender equity and equality in fisheries community development.

Way Forward

For effective implementation of the SEAFDEC Gender Strategy, the Action Plan was developed during the Workshop on the Development of the Action Plan for SEAFDEC Gender Strategy in May 2019 in Samut Prakan, Thailand. The gender-sensitive actions and indicators of the respective gender strategies were agreed by the SGFPs during the Workshop. Subsequently, the progress of such indicators would be compiled and submitted by respective Departments to SEAFDEC Secretariat for inclusion in SEAFDEC Annual Reports.

Furthermore, the draft of the Practical Guide could be downloaded from <http://repository.seafdec.org/handle/20.500.12066/6149> by the AMSs and relevant users for testing and evaluation. Before the final version is made available for public use, SEAFDEC would test the Practical Guide in the field to validate its recommendations and gender analysis methods and tools. With the goals of field testing Practical Guide as well as supporting the implementation of the FAO SSF Guidelines, a new project “Gender Dimension in the Value Chain of Small-scale Fisheries and Aquaculture in Southeast Asia” with funding support from the Food and Agriculture Organization of the United Nations (FAO) would be implemented by SEAFDEC in 2020-2021. The activities of the Project would be conducted in selected small-scale fisheries and aquaculture communities in Lao PDR, Myanmar, Philippines, and Thailand.



Site of Regional Gender Study in Southeast Asia by SEAFDEC



TD participates in eCDT technology showcase workshop

Two representatives from the SEAFDEC Training Department (SEAFDEC/TD) participated in the “Electronic Catch Documentation and Traceability (eCDT) Technology Showcase for Marine and Freshwater Fisheries Management in the Mekong Region.” The Workshop was organized by the USAID Oceans from 14-16 January 2020 in Vientiane, Lao PDR. The objectives of the Workshop were to: 1) introduce the purpose, costs, and benefits

of using eCDT technologies, and share USAID Oceans learning site knowledge and lessons regarding the testing and implementation of these technologies; 2) provide an opportunity for technology company partners to ‘showcase’ their available eCDT technologies with fisheries managers from the Mekong region; and 3) develop country-level national CDT roadmaps for testing and implementing eCDT technologies in Lao PDR. Thirty participants including

fisheries managers from Lao PDR National and Provincial, representatives from SEAFDEC, representatives from private technology and fishing companies that have developed or implemented the available eCDT technologies, and staff and technical consultants from USAID Oceans were in attendance.

During the Workshop, SEAFDEC introduced the electronic ASEAN Catch Documentation Scheme (eACDS) as a tool to prevent the entry of fish and fishery products from IUU fishing activities into the supply chain. The eACDS activities include good practices such as responsible fishing, labor control (if required), good fish handling, and food safety which link to good governance and enhance the healthy ecosystem approach, sustainable resources management, and enhance human well-being. ☒



SEAFDEC representative presenting the eACDS during the workshop

TD offers scholarship funds and donates medical equipment



SEAFDEC donates wheelchairs to Prasamutchedi Sawathayanon Hospital

Through the special activity “Fisherman Run: Save the Sea,” SEAFDEC/TD extended support to several schools and a hospital. The schools in the vicinity of TD, namely: Pomprachunlajomklao School, Wat Trimitwararam School, Wat Khae School, Wat Laem Fa Pha School, Wat Sri Kongkaram School, and Ban Khun Samut Thai School received THB 120,000 to fund student scholarships. Moreover, the amount of THB 198,770 was granted to Prasamutchedi Sawathayanon Hospital to purchase medical equipment. ☒

Technical Meeting on Marine Debris

SEAFDEC/TD organized the Technical *Ad Hoc* Meeting on Marine Debris in Thailand on 29 January 2020 at SEAFDEC/TD in Samut Prakan, Thailand. There were 15 participants from Japan, Thailand, SEAFDEC Secretariat, and TD who joined the Meeting. The Meeting was meant to: 1) establish collaboration between SEAFDEC and Science and Technology Research Partnership for Sustainable Development (SATREPS) Program; 2) understand project details, SEAFDEC’s role, and implementation of the plan for “Formation of a Center of Excellence for Marine Plastic Pollution Studies in the Southeast Asian Seas”; and 3)

establish and strengthen the marine debris researcher networks.

SATREPS is a Japanese Government program that promotes international joint research. The program is structured as collaboration between the Japan Science and Technology Agency (JST), which provides competitive research funds for science and technology projects, and the Japan Agency for Medical Research and Development (AMED), which provides competitive research funds for medical research and development, and the Japan International Cooperation Agency (JICA), which provides overseas development assistance (ODA). ☒



Participants during the Technical Ad Hoc Meeting on Marine Debris

Simple techniques for double crablet production

Crab farmers will be happier, and the environment hopefully better, with recent improvements at the mangrove crab hatchery of SEAFDEC/AQD. Crablets used in the farming of the prized mangrove crabs, *Scylla serrata*, are usually collected from the wild and increasing demand threatens their natural population with crablets becoming more difficult to find. Overfishing has pushed the local government of areas heavily exploited for crablets such as Catanduanes, Surigao, and Samar in the Philippines, to implement strict prohibitions in the collection of wild crablets. Restrictions on wild collections led to the rise in demand for hatchery-bred crablets.

Unfortunately, crab hatcheries suffer from very low survival rates caused by disease and cannibalism. However, simple tweaks in protocols at the AQD hatchery have led to a significant boost in their crablet production, with survival increasing twofold. By feeding the crabs more frequently and providing cleaner water in the tanks, survival rate from zoea stage (newly-hatched larvae) to crablet increased from an average of one percent in 2017 to two percent in 2019.

Two percent might seem low to those unfamiliar with the hatchery business, but according to the AQD Associate Researcher, Ms. Joana Joy Huervana,



Crablets produced in the mangrove crab hatchery of AQD where simple adjustments in feeding and water change had doubled crablet production.

crabs produce an average of 3 million larvae which translates to 60,000 crablets per spawner. AQD sells crablets, as a byproduct of research, at US\$ 0.10 per piece but wild crablets sold by traders reach as much as US\$ 0.24 to US\$ 0.30 per piece. The simple tweaks helped achieve the higher survival rate from zoea to crablet, reaching as much as 10 percent, which contributed to the hatchery's production of over 650,000 crablets for 2019.

The modified techniques were proven effective and can be easily adopted by hatchery owners and other stakeholders. Meanwhile, further improvements are still being done in the AQD hatchery, not only to cope with the industry's demand for crablets, but also to improve the science behind the technology.



Hatchery staff of the mangrove crab hatchery of AQD counts crablets prior to shipments

IFRDMD bids farewell to Deputy Chief Dr. Shibuno

SEAFDEC/IFRDMD held a farewell ceremony on 23 March 2020 in Palembang, Indonesia for its Deputy Chief, Dr. Takuro Shibuno, after serving IFRDMD for two years and three months. The Chief of IFRDMD, Dr. Arif Wibowo, expressed his gratitude and deep appreciation to Dr. Shibuno for all that he has done for the advancement of IFRDMD. In his remarks, Dr. Shibuno said that he enjoyed his work in IFRDMD because all the staff were efficient and

worked hard together. He also expressed his gratitude to the IFRDMD staff for the support during his time as the Deputy Chief.

To succeed Dr. Shibuno, the Government of Japan nominated Dr. Toshiya Suzuki to be the new Deputy Chief of IFRDMD and Japanese Trust Fund Co-Manager for IFRDMD for a two-year term starting April 2020.



Former Deputy Chief of IFRDMD, Dr. Takuro Shibuno during the farewell ceremony organized at IFRDMD

Identification of antigen-sampling cells in gills, key to mucosal vaccine development

SEAFDEC/AQD organized the seminar “Gill-epithelial antigen-sampling cells in rainbow trout: A novel mucosal antigen sampling system of teleost fish during bath-vaccination” in Iloilo, Philippines on 28 January 2020.

The Assistant Professor from the Tokyo University of Marine Science and Technology, *Dr. Goshi Kato*, presented the study on gill-epithelial antigen sampling cells. *Dr. Kato* explained that the whole body of teleost fish or ray-finned fish like rainbow trout is covered by mucus but specific antigen-sampling cells have not yet been identified in the mucosal tissues. The study was able to



Dr. Goshi Kato (left) receives a Certificate of Appreciation from SEAFDEC/AQD Deputy Chief Dr. Koh-ichiro Mori for conducting a seminar at SEAFDEC/AQD

identify the two antigen-sampling cells that take up antigens on the epithelial surface of the gills. The results of the study can be valuable in developing mucosal vaccines that specifically target gill epithelial antigen-sampling cells. Moreover, due to the rapid growth of the

aquaculture industry, effective mucosal vaccines for farmed fish administered through bath vaccination are needed. Bath vaccination can significantly reduce working costs and stress, which are induced by vaccination via injection of individual fish. ✦

SEAFDEC turns up the heat to meet milkfish fry shortage



One of the milkfish breeders at SEAFDEC/AQD, now 38 years old and still spawning



Technicians preparing milkfish fry in white basins for packing and transport to grow-out farms

The Philippines is experiencing a perennial shortage of milkfish fry for seeding fishponds, net cages, and pens where they continue to grow to marketable sizes. Despite being widely regarded as the unofficial national fish, about half of the milkfish on Filipino tables are born in hatcheries in Indonesia

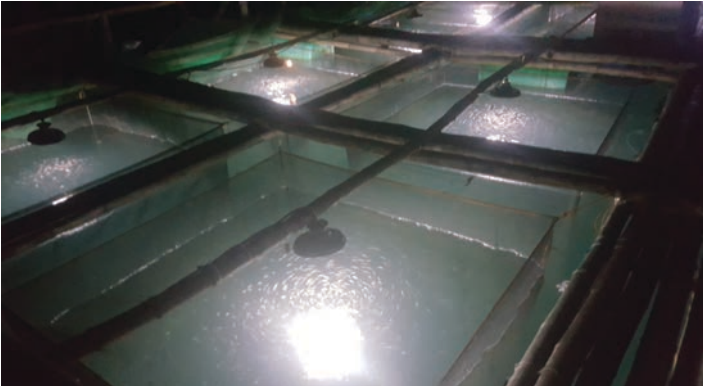


Milkfish fry at the SEAFDEC hatchery in Tigbauan, Iloilo that are ready to be transported to nurseries and grow-out farms

and Taiwan. In this regard, SEAFDEC/AQD, alongside with the Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR), has recently been finding ways to address the shortage of milkfish fry in the country. The goal is to locally produce an additional 1.2 billion fry annually

to complement the 1.1 billion fry that are already being produced by existing hatcheries and collected from the wild. The total national requirement stands at 2.5 billion and the expansion of local production is expected to reduce importation by 85 percent. To do this, AQD has been working with DA-BFAR towards establishing dozens of legislated multi-species hatcheries around the Philippines that can each produce 25 million fry every year while another measure is the repair and rehabilitation of abandoned hatcheries around the country. While the completion of infrastructure projects understandably takes time, a third measure has already gained some immediate success when AQD simply manipulated water temperature to set the mood for milkfish breeders to spawn during colder months. The temperature in the water system of a breeding tank was raised to at least 29 °C. A total of 23 million good eggs were collected from the heated tank that contained 76 breeders in which almost 13 million normal larvae were hatched. Therefore, environmental manipulation is necessary to demonstrate the year-round spawning of milkfish breeders in the Philippines. AQD's milkfish hatchery is currently being expanded to accommodate more tanks for breeders and fry. ✦

Study shows that young fish grow faster when nursery cages are lit at night



Study finds that artificial lighting at night helps improve the feeding behavior of pompano fry in cages



Pompano that received 100 percent feeding rate in lit cages (rightmost) grew the most, even compared to fully fed pompano that did not receive artificial lighting (leftmost)

Snubnose pompano, *Trachinotus blochii*, is a high-value fish which is in demand in both local and export markets. In Asian countries, pompano is cultured in open sea cages, brackishwater cages, and ponds. However, a few challenges, such as high production cost, still hamper the widespread farming of pompano. Experts at AQD are investigating the advantages of lighting up pompano cages at night during the nursery phase. The illumination is supposed to help the

young pompano see their natural prey, mostly tiny crustaceans such as copepods floating near the surface, allowing the fish to efficiently feed overnight; thus, improving growth and survival.

Better growth of pompano fry was observed during a year-long experiment using artificial lighting as part of the nursery set-up at AQD's Igang Marine Station in the province of Guimaras, Philippines. This means that feed cost

can be reduced by as much as 50 percent. Since feeds account for a major expense in the nursery phase, artificial illumination is a promising innovation for pompano culture to cut down on costs. Further studies will be conducted this year including a third trial run to fully verify the results as well as analyze the effect of this technique to the economics of pompano nursery culture. ❖

IFRDMD building officially opened



The Minister of Ministry of Marine Affairs and Fisheries (MMAF), Indonesia, *Dr. Edhy Prabowo*, announced the official opening of the SEAFDEC/IFRDMD building on 27 January 2020. The IFRDMD building operated from August 2015, one year after IFRDMD was inaugurated in September 2014. In his remarks,

Dr. Prabowo mentioned that inland fisheries received more attention considering its potential to supply fish to the growing food demand of the populace, especially the region's rural poor. He also recognized that there is a need to compile real-time information for the proper valuation of inland fisheries. The analysis could be used for

the planning of the inland fisheries sub-sector management.

The ceremony was attended by the Governor of South Sumatra, Mayor of Palembang, and officials of MMAF. The Governor of South Sumatra, *Mr. Herman Deru*, expressed his pride that the IFRDMD office is situated in Palembang City, the capital of South Sumatra Province. He hoped that IFRDMD's studies could support the local government in maintaining the native fish resource of the Musi River.

On that occasion, the Minister and Governor released 5,000 seeds of bonylip barb (*Osteochilus vittatus*) and 2,100 seeds of kissing gourami (*Helostoma temminckii*), both of which are native fish in South Sumatra. The fish stocking activity took place in the canal behind the IFRDMD building. ❖

FUTURE ACTIVITIES

| Date | Venue | Title | Organizer(s) |
|---|--|--|------------------------|
| 2020 | | | |
| 23 April | SEAFDEC Secretariat | SEAFDEC-Sweden Project Final Review Meeting | SEAFDEC-Sweden Project |
| 29 April | Teleconference | FAO/APRACA Project Meeting on Capacity Development in Micro-finance, Credit and Insurance in Small-scale Fisheries | FAO/APRACA |
| 19 May | Teleconference | 52 nd Meeting of the SEAFDEC Council: Teleconference Session | Secretariat |
| 21 May | Virtual Meeting | 12 th International Forum on Illegal, Unreported and Unregulated (IUU) Fishing | Chatham House |
| 27-28 May | Virtual Meeting | Technical Workshop on the Development of an ASEAN General Fisheries Policy (AGFP) Feasibility Study | ASEAN & DOF Thailand |
| 22 June | Virtual Meeting | 10 th Meeting of the ASEAN Shrimp Alliance (ASA) | ASEAN & DOF Thailand |
| 22-26 June | BFS, Rizal, Philippines | Training Course on Tilapia Hatchery & Grow-out Operations <i>(accepting applications, but the training is subject to COVID-19 situation)</i> | AQD |
| 22 Jun - 28 Jul | TMS, Iloilo, Philippines | Training Course on Marine Fish Hatchery Operations <i>(accepting applications, but the training is subject to COVID-19 situation)</i> | AQD |
| 25-27 June | Virtual Meeting | 28 th Meeting of the ASEAN Sectoral Working Group on Fisheries (ASWGF _i) | ASEAN Secretariat |
| 1 st week of July (Tentative) | Iloilo, Philippines | SEAFDEC/AQD Anniversary | AQD |
| 3 August | Virtual Meeting | Special Senior Officials' Meeting of the 41 st Meeting of the ASEAN Ministers on Agriculture and Forestry | ASEAN Secretariat |
| 10-14 August | BFS, Rizal, Philippines | Training Course on Tilapia Hatchery & Grow-out Operations <i>(accepting applications, but the training is subject to COVID-19 situation)</i> | AQD |
| 17 Aug-7 Sep | TMS, Iloilo, Philippines | Training Course on Mangrove Crab Hatchery Operations <i>(accepting applications, but depending on COVID-19 situation)</i> | AQD |
| 18-20 August (Tentative) | Bangkok, Thailand | Inter-Departmental Workshop on Preparation for Publication Southeast Asian State of Fisheries and Aquaculture (SEASOFIA) 2022 | SEAFDEC |
| 14-16 September (Tentative) | Kuala Lumpur, Malaysia | Core Expert Meeting for Sustainable Utilization and Management of Sharks and Rays in the Southeast Asian Region | MFRDMD |
| 21-25 September | BFS, Rizal, Philippines | Training Course on Freshwater Prawn Hatchery & Grow-out Operations <i>(accepting applications, but the training is subject to COVID-19 situation)</i> | AQD |
| 21-30 September | TMS, Iloilo, Philippines | Training Course on Mangrove Crab Nursery & Grow-out Operations <i>(accepting applications, but the training is subject to COVID-19 situation)</i> | AQD |
| Sep/Oct (Tentative) | Kuala Lumpur, Malaysia | Core Expert Meeting on Pelagic Fish Resources in the Southeast Asian Region | MFRDMD |
| Sep/Oct (Tentative) | Kuala Lumpur, Malaysia | 6 th Meeting of the Scientific Working Group (SWG) on Neritic Tuna Stock Assessment in the Southeast Asian Waters | MFRDMD |
| 6-9 October (Tentative) | Singapore | Inception Workshop for the Project on Enhancing Food Safety and Competitiveness of Seafood Products | MFRD |
| 12-16 October | BFS, Rizal, Philippines | Training Course on Catfish Hatchery and Grow-out Operations <i>(accepting applications, but the training is subject to COVID-19 situation)</i> | AQD |
| October (Tentative) | Belitung, Indonesia (To be confirmed) | 21 st Meeting of SEAFDEC Information Staff Program (ISP) | SEAFDEC |
| 10-12 November (Tentative) | Iloilo, Philippines | 43 rd Meeting of the Program Committee Meeting (PCM) | AQD |
| 10-24 November | BFS, Rizal, Philippines | Training Course on Community-based Freshwater Aquaculture for Remote Rural Areas of Southeast Asia <i>(accepting applications, but the training is subject to COVID-19 situation)</i> | AQD |

University students visit TD



Students during the practical activity on skip boat control

Thirty-two students and two lecturers from the Faculty of Fisheries, Kasetsart University were welcomed for a study visit at SEAFDEC/TD on 13 March 2020. The goal of the visit was for the students to increase their knowledge and gain experience on coastal navigation outside the study room. After SEAFDEC and its activities in the region were presented, the students observed the facilities such as fishing workshop, library, and M.V. SEAFDEC 2. Moreover, the students practiced skip boat control in the Chao Phraya River assisted by TD staff.



Thai fisheries officers trained on inland fishing gear

SEAFDEC/TD organized the "Training Course on Inland Fishing Gear" from 24 to 28 February 2020 at TD, Samut Prakan, Thailand. A total of 32 fisheries officers from the Inland Fisheries Research and Development Division, Department of Fisheries (DOF), Thailand participated in the training. The training course, which was requested by the DOF, Thailand, was aimed at imparting knowledge on basic fishing gear through skills development of baseline survey for inland fishing gear. The Training consisted of lectures, practice, and study trip. In the end, the participants have gained better understanding of basic inland fishing gear and improve their knowledge which they could apply to their job relevant to baseline survey on inland fishing gear.



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 organizes Regional Workshop on Gender Integration in Fisheries

To support the gender mainstreaming in SEAFDEC programs and projects, the USAID Oceans and Fisheries Partnership (USAID Oceans) supported SEAFDEC in organizing the “Regional Workshop on Gender Integration in Fisheries” from 21-23 January 2020 in Bangkok, Thailand. The aims of the Workshop were to: 1) provide technical training on gender integration in fisheries work and research and orientation on action plans and budgets, gender analysis methods and tools, project monitoring, and evaluation, and gender-sensitive reporting and communication; 2) brainstorm on developing the module for “Gender LEAD: Gender for Leaders, Executives, and Decision Makers in Fisheries”; 3) share experiences and lessons learned in conducting gender integration initiatives in Southeast Asia’s fisheries sector; and 4) discuss the



finalization of the “Regional Document on Gender Mainstreaming/Integration in the Fisheries Workplace.” There were 23 females and 7 males who participated the Workshop including SEAFDEC Gender Focal Persons from SEAFDEC Secretariat and Departments and members of the USAID Oceans Human Welfare and Gender Equity Technical Working Group from SEAFDEC Member Countries. The resource speakers were

from the National Network on Women in Fisheries in the Philippines (WINFISH), Asian Institute of Technology (AIT), Food and Agriculture Organization (FAO), USAID RDMA Gender Office, and USAID Oceans technical and gender teams from Indonesia, Malaysia, and Philippines. The USAID Oceans Gender Specialist and SEAFDEC Gender Focal Person served as both facilitators and resource persons. ✕

SEAFDEC kicks off the second phase of JAIF project on tropical anguillid eel



The new phase of the project on tropical anguillid eel started in 2020 with support from the Japan-ASEAN Integration Fund (JAIF). The two-year project “Development of Stock Assessment Methods and Strengthening of Resources Management Measures for Tropical Anguillid Eel in Southeast Asia” is being implemented by SEAFDEC to develop the methods for assessment of tropical anguillid eel resources in order to formulate effective management measures for the sustainable use of tropical anguillid eels in Southeast Asia. In this connection, SEAFDEC organized the Project Planning Meeting on 3 February 2020 in Bangkok, Thailand to introduce the Project to

the ASEAN Member States (AMSs). A total of 34 participants attended the Meeting including the representatives from Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, and Viet Nam, experts and representatives from Tokyo University of Marine Science and Technology, JAIF Management Team within the ASEAN, JANUS Co., Ltd., as well as officers from SEAFDEC Secretariat, TD, AQD, MFRDMD, and IFRDMD.

In the future, various surveys, such as those on eel catch, eel catch sample, and DNA, will be conducted in target countries. ✕

eACDS introduced in Cambodia

The “Workshop on the Introduction of Electronic ASEAN Catch Document Scheme (eACDS)” was organized by the SEAFDEC Training Department (SEAFDEC/TD) in cooperation with the Fisheries Administration (FiA) of Cambodia from 17-19 February 2020 in Phnom Penh, Cambodia. There were thirty participants from FiA Central in Phnom Penh, Koh Kong, Kep, and Preah Sihanouk Provinces and SEAFDEC.

The Workshop was aimed at introducing the eACDS application to relevant agencies. The participants discussed and familiarized themselves with the eACDS application in the part of the port-in port-out through request and issuance of the Catch Declaration (CD). A pilot site will be selected by FiA for the implementation of eACDS in the country.

Moreover, the importance of Key Data Elements (KDEs) for eACDS database through eACDS implementation plan for 2020 was also recognized. ✕