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### **EDITORIAL**

During the second quarter of 2014, the SEAFDEC welcomes Mr. Lee Kwong Weng as the Chairperson of the SEAFDEC Council for 2014-2015, who was elected during the recent 46th Meeting of the SEAFDEC Council hosted by the Agri-Food and Veterinary Authority (AVA) of Singapore. With Mr. Lee at the helm, the Council reviewed the progress and achievements of SEAFDEC in 2013, and approved its proposed program of activities for 2014. The Council also provided directions on the future activities of SEAFDEC to make sure that the competitiveness of fisheries sector of the region is enhanced.

While sustaining concerted efforts for sustainable development of fisheries in the Southeast Asian region, SEAFDEC and the U.S. Agency for International Development (USAID) agreed to work

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# **SEAFDEC holds its Forty-sixth Council Meeting in Singapore**

Government of the Republic of over by the Honorable Minister of State, Singapore, the 46th Meeting of the Ministry of National Development SEAFDEC Council was held from 1 to and Ministry of Defence and Mayor 4 April 2014 and hosted by the Agri- of South East District, Singapore, Food and Veterinary Authority (AVA) Dr. Mohamad Maliki Bin Osman. of Singapore. The Inaugural Ceremony The Meeting unanimously elected the of the 46th Meeting of the SEAFDEC

At the kind invitation of the Council was held on 1 April and presided

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The SEAFDEC Council Directors together with the Secretary-General and Deputy Secretary-General of SEAFDEC

# SEAFDEC and USAID collaborate on enhancing food security and biodiversity conservation

SEAFDEC and the U.S. Agency for implement activities for enhancing food International Development (USAID) agreed to work together to design and



Signing of MOU between SEAFDEC and USAID to collaborate on enhancing food security and biodiversity conservation

security and biodiversity conservation in Asia and the Pacific. The Memorandum of Understanding signed on 16 June 2014 by SEAFDEC Secretary-General Chumnarn Pongsri and USAID Regional Development Mission for Asia Director Michael Yates, reflects the SEAFDEC and USAID's intention to collaborate in the design, implementation and evaluation of sustainable fisheries activities to be supported by USAID. In addition, USAID and SEAFDEC plan to engage other U.S. Government

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#### **EDITORIAL**

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together to design and implement activities for enhancing food security and biodiversity conservation in Asia and Pacific, more particularly in Southeast Asia. In pursuing these activities, other U.S. Government Agencies would be engaged especially in identifying and providing the required technical experts.

During the quarter, an important activity was sustained to draft the Regional Plan of Action on Sustainable Utilization of Neritic Tunas in the ASEAN Region (RPOA-Neritic Tuna). This RPOA is intended to serve as guide in the management of neritic tuna fisheries at national, sub-regional and regional levels. Several on-site training courses were also conducted, including those that promote the essential ecosystem approach for trawl fisheries management, especially in the five REBYC-II CTI countries with the objective of enhancing stakeholders' knowledge on the Ecosystem Approach to Fisheries Management (EAFM) process for responsible and sustainable fisheries management.

Moreover, training courses and capacity building activities were carried out at the SEAFDEC Departments to transfer the verified technologies developed by SEAFDEC. Conduct of various fora had also been facilitated by SEAFDEC to enable the Mekong River Basin, Andaman Sea and Gulf of Thailand sub-regions to promote joint fisheries management, enhance capacity building, and share information on the technical aspects of transboundary fisheries management.



SEAFDEC Newsletter is available at www.seafdec.org.

You can also send your comment on our Newsletter to

secretariat@seafdec.org.

# **SEAFDEC** holds its Forty-sixth Council Meeting in Singapore

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Council Director for Singapore, Mr. Lee Kwong Weng as the Chairperson of the SEAFDEC Council for the Year 2014-2015, succeeding Atty. Asis G. Perez, SEAFDEC Council Director for the Philippines who served as the Chairperson for the year 2013-2014.

The Council noted the good progress and achievements of SEAFDEC in 2013, and approved the proposed program of activities to be undertaken in 2014. The Council also provided directions on the future activities of SEAFDEC, particularly the establishment of "Regional Fishing Vessels Record" (RFVR) as a tool to combat the IUU fishing, and the "Regional Cooperation for Sustainable Utilization of Neritic Tunas in the Southeast Asian Region".

On the RFVR, the Council supported the establishment of the RFVR as it is an initial but bold step towards combating IUU fishing in the region. While the Member Countries agreed to share their respective minimum requirements information on fishing vessels 24 meters in length and over for compilation in the SEAFDEC database system, SEAFDEC was also requested by the countries to provide capacity building for staff of concerned national agencies, as well as continued support particularly in the conversion the current units used in measuring fishing vessels into the

The Council endorsed the proposal for the development of Regional Cooperation for Sustainable Utilization of Neritic Tunas in Southeast Asia which includes the development of the Regional Plan of Action on Sustainable Neritic Tuna Fisheries Management. SEAFDEC was requested to develop appropriate technology and fishing gears for the capture of neritic tuna species in a sustainable manner.



Mr. Lee Kwong Weng, the Chairperson of the SEAFDEC Council for the Year 2014-2015

The Council also supported the proposal for SEAFDEC to serve as Coordination Unit for the new training program on Ecosystem Approach to Fisheries Management (EAFM), considering that this could be the first step for the countries in the region to move towards EAFM. The Council took note of the progress of the establishment of the "Inland Fishery Resources Development and Management Department (IFRDMD)", especially the construction of new buildings on land areas donated by the Government of Indonesia, as well as in securing research facilities for this new Department, aside from providing infrastructures and support to the operations and staff of the new Department. The Council considered and approved in principle the commonly-agreed unit of measurement. Plan of Operation and Program of Work of IFRDMD to enable the Department to start operations in the soonest time possible.

> At the closing of the 46th Meeting of the SEAFDEC Council, the Council extended its appreciation to the Government and the people of the Republic of Singapore for the excellent hosting of the Meeting and the warm hospitality accorded to the Council throughout the event. The Council then announced that the 47th Meeting of the SEAFDEC Council in 2015 would be hosted by Thailand.

#### SEAFDEC takes part in the 31st Session of FAO/COFI

SEAFDEC Secretary-General Dr. Chumnarn Pongsri, together with Mr. Hajime Kawamura Deputy Secretary-General and Dr. Somboon Siriraksophon Policy and Program Coordinator participated in the 31st Session of the FAO Committee on Fisheries held on 9-13 June 2014 at FAO/Rome. While commending the progress made by FAO in the implementation of the Code of Conduct for Responsible Fisheries and reiterating the regional and national efforts of SEAFDEC and the Member Countries in regionalization of the Code and translation to national languages

SEAFDEC raised specific issues that and urgent issues for the Southeast necessary component in food safety the Southeast Asian region.

With regards to combating IUU to facilitate wider implementation, fishing, which is among priority

required consideration by FAO, i.e. Asian region, the on-going efforts of the development of simple techniques SEAFDEC and Member Countries on and awareness program on the development of the ASEAN Regional promotion of fish handling at sea as a Guidelines to Combat IUU Fishing as well as to Prevent the Entry of Catch and quality assurance system, as well from IUU fishing into the Supply Chain as the development and introduction of was informed. In addition, sharing of inexpensive but effective device that fishing vessels records, starting with could enhance the implementation of vessels of 24 meters in length and Vessel Monitoring System (VMS) by over, has also been agreed among the large number of small fishing boats of SEAFDEC Member Countries to serve as reference and as a tool to prevent IUU fishing activities within the region. The vessels record is now under the process

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## SEAFDEC and USAID collaborate on enhancing food security and biodiversity conservation

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the Department of Interior, to identify and provide technical experts who assist Chumnarn Pongsri. in the facilitation of the envisioned activities.

"The United States and the countries of Southeast Asia share a common vision of our oceans as global treasures, a source of food and energy, and a foundation for our way of life", U.S. Ambassador Kristie A. Kenney said at the signing ceremony, which harmonized with U.S. Secretary of State John Kerry's Speech during the June 16-17 "Our Ocean" Conference in Washington, DC: "Our oceans provide jobs and attract tourism. They provide a habitat for countless species. They are vital to our nations' transportation, economy, and trade, linking us with countries across the globe".

"Collaboration with USAID would build upon the existing cooperation between SEAFDEC and the ASEAN Member States by generating technical grounds to support the development of science and market-based policies on fishing practices and related activities that should be undertaken in a responsible

agencies, including the National Oceanic and sustainable manner, including Action to Promote Responsible Fishing and Atmospheric Administration and traceability of fishery products", said SEAFDEC Secretary-General, Dr.

> Under the MOU, an ad hoc consultative committee would be organized to advance a unified regional, sustainable and responsible fisheries agenda with participation from relevant regional organizations such as the ASEAN, Coral Triangle Initiative for Coral Reefs, Fisheries and Food Security (CTI-CFF) and the Regional Plan of

Practices including Combating Illegal, Unreported and Unregulated Fishing in the Region (RPOA-IUU).





U.S. Ambassador Kristie Kenney, Director Michael Yates and USAID team observing TD facilities including the M.V. SEAFDEC before taking pictures with the Secretary-General, Deputy Secretary-General and SEAFDEC crew members

# DEPARTMENTAL ACTIVITIES

#### Japan's Parliamentary Secretary of MAFF visits AQD

Dr. Shinichi Yokoyama, Japan's Parliamentary Secretary of Ministry of Agriculture, Forestry and Fisheries, together with Japanese Fisheries Agency officers visited AQD in Iloilo, Philippines on 28 June 2014 to get acquainted with the current research projects of the Department. Dr. Yokoyama and party had a short tour of AQD's mud crab and milkfish ponds in Dumangas Brackishwater Station. They also visited AOD's hatchery facilities on mud crab, abalone, milkfish and seaweeds in Tigbauan Main Station.





Japanese dignitaries at AQD mud crab (top) and AQD abalone hatchery (down) hatchery with AQD Chief Dr. Ayson





from Tigbauan and seaweed farmers from Guimaras (who are AQD's partners in its seaweed project which received funding from the Japanese Trust Fund) to discuss about the fisherfolks' livelihood and how aquaculture, particularly was able to understand the problems seaweeds farming has improved their



AQD scientist Dr. Nerissa Salayo shows Dr. Yokoyama the seaweed project site (2003) of AQD in Tigbauan, Iloilo, Philippines

The group also met with fisherfolks way of life. During the meeting, AQD Socio-economics Section Head Dr. Nerissa Salayo, also promoted AQD's activities with the fishing communities.

> Through this visit, Dr. Yokoyama and concerns of the fisherfolks in the

> > Philippines. Furthermore, he appreciated AQD for utilizing the fund from the Japanese Government to help Filipino fisherfolks by disseminating aquaculture technologies it has developed. Dr. Yokoyama also mentioned that the Japanese Government increased its funds for SEAFDEC to widen its reach to fishing communities.





AQD scientist Dr. Evelyn Grace Ayson shows the seaweed plantlets grown at AQD



The Japanese delegates with Tigbauan and Guimaras fisherfolks and AQD staff

#### AQD training courses exceed expectations

academe, local government units & private sectors) attended AQD's 12 (regular & specialized) training courses from January 2014 up to the latest. The courses were mainly on aquaculture technologies (nursery, hatchery and grow-out) of various commodities, aquafeed formulation & preparation and fish & crustacean diseases. A course on information dissemination & data management was also organized for the Philippines' Bureau of Fisheries and Aquatic Resources-National Fisheries Research & Development Institute (BFAR-NFRDI).

Trainees, coming from different parts of the world, come to training with great expectations and AQD always endeavors to meet and even exceed them. As one



Trainees for "aquafeed formulation & preparation" course at AQD's pilot-scale feed mill with AQD scientist Dr. Veronica Alava (yellow shirt)

A total of 123 trainees (from the of the Kenyan trainees who attended the aquafeed formulation & preparation course, Mr. Agwata Ototo said, "I am very grateful for the experience that I have here; we wanted a training that will transform the academic knowledge that we have into practice and indeed we achieved it here".

> The training course on mud crab hatchery, nursery and grow-out operations garnered a good number of 23 participants this year including partners in the Department of Science and Technology's national mud crab R&D program and private individuals. AQD Chief Dr. Felix Ayson said the number of participants reflects the popularity of mud crab aquaculture at present. The Chief also encouraged the trainees to go into soft-shell crab production because of its increasing demand in the market. The training taught the trainees to produce crablets by following proper broodstock management and hatchery procedures.

A 9-day course on information dissemination and data management was requested by NFRDI. The course of science writers like news writing, design & layout, photography, website & social network mechanics; and accessing published information found in library databases, among others. With AQD December 2011.



Trainees in "mud crab hatchery, nursery and grow-out operations" training during practical sessions in the hatchery



Trainees of the "capacity-building on information dissemination and data management" training

providing training mainly on aquaculture primarily covered the skill set required technologies, this is the first time that a non-technical course was offered. The course for NFRDI was not the first session though; the first was conducted for SEAFDEC information officers in ×

# Short-term training for university students

Some 40 students from six universities of Thailand and Hokkaido University participated in the training course on "Ecosystem Approach to Fisheries Management" from 3 to 13 June 2014 at the TD premises in Samut Prakan, Thailand. The training course imparted knowledge on ecosystem approach to fisheries management, responsible fishing, small-scale fishing gears, and principles of oceanographic equipment.

The deployment of crab trap and gill net, along with basic oceanography samplings was carried out in most of these fishing operations in the estuarine drainage from a huge watershed (about fishing ground along the inner Gulf of one third of the area in the country) of Thailand. This well-known bountiful the Chao Phraya River system. fishing ground covers is enriched by the





Thai and Japanese students observing fishing gears and facilities on-board the

### SEAFDEC participates in 5th APFIC Regional Consultative Forum Meeting

General Dr. Chumnarn Pongsri, SEAFDEC team participated in the 5th APFIC Regional Consultative Forum Meeting (RCFM) convened in Hyderabad, India on 19-21 June 2014. The Meeting was attended by representatives from APFIC Members and partner organizations including SEAFDEC as well as public-private organizations.

The Meeting was convened in two parallel sessions. The first session on "Lessons learned and future directions of the marine environmental and fisheries initiatives in the Asian Region" was aimed at improving coordination between on-going and pipeline GEF and GEF/IW project in the region on marine ecosystems, capture fisheries and marine

activities, which took place in 2013 International Waters Learning process. It representatives. also drew together best practice lessons, identified gaps and needs, and made recommendations on actions and areas Meeting was the updated progress of two for future cooperation.

The second session on "Promoting sustainable intensification of aquaculture for food and nutritional security in Asia-Pacific" focused on promoting sustainable intensification of aquaculture (SIA) in the region. It shared the experiences and progress in different areas related to sustainable aquaculture intensification, identified gaps and recommended policy strategies to promote the SIA. In particular, it focused on the roles

Led by the SEAFDEC Secretary- environment projects in the region. The of public and private sectors and areas session built on previous networking for cooperation and coordination, and comprised governmental, research, and will also contribute to the GEF non-governmental and private sector

> Presented by SEAFDEC during the projects of SEAFDEC on Strategies for Trawl Fisheries Bycatch Management (REBYC-II CTI), and Fisheries and Habitat Management, Climate Change and Social Well-being in Southeast Asia, as presented by Mr. Richard Gregory, Regional Coordinator of REBYC-II CTI Project, and Ms. Pattaratjit Kaewnuratchadasorn, Program Manager of the SEAFDEC Secretariat, respectively.

Recommendations from the RCFM were presented and endorsed by the 33rd Session of APFIC, held during 23-25 June 2014 at the same venue. Besides endorsing the result from RCFM, the APFIC Session also updated the development of fisheries and aquaculture in the APFIC region and discussed the work program particularly the significant developments and achievements in national fisheries and aquaculture programs, as well as updated activities of regional partner organizations.





#### SEAFDEC takes part in the 31st Session of FAO/COFI

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of database development to facilitate information sharing among the ASEAN Member States. Furthermore, SEAFDEC is also in the process of developing a Regional Catch Documentation System with the objective of enhancing intraregional within ASEAN as well as international trade.

Securing Sustainable Small-Scale Fisheries in the Context of Food Guidelines of FAO. Security and Poverty Eradication,

while congratulating FAO for sustaining the negotiation processes to come up with the Guidelines, it was noted that SEAFDEC would further work closely with its Member Countries and relevant partner organizations to develop the Regional Strategic Approach for the ASEAN to ensure that improvements in terms of policies, strategies and actions On the Voluntary Guidelines for at regional, national and local levels are inline with elements in the SSF

During the COFI Session, SEAFDEC also presented the progress on the establishment of its new Inland Fishery Resources Development and Management Department (IFRDMD), which will be located in and hosted by Indonesia. This new department is envisioned to advance the efforts of SEAFDEC in promoting and assisting the SEAFDEC Member Countries on the sustainable development of inland fisheries in the near future. X

#### AQD scientists participate in aquaculture convention

AQD scientists Dr. Rolando Dr. Nerissa Salayo were among the speakers of the 5<sup>th</sup> Aquaculture Expo and Convention (AQUATECH 2014) held in Dagupan City, Pangasinan, Philippines from 29 to 31 May 2014. They talked on the diseases in tilapia, updates on the softshell crab production in the Philippines and market & development issues in coastal resources management in the Philippines, respectively. Moreover, AQD scientists Dr. Maria Lourdes Aralar, Dr. Mae Catacutan, Dr. Quinitio and Ms. Jocelyn Ladja were among the resource persons during the convention's aquaculture clinic; while Dr. Maria Rowena Eguia and Dr. Salayo served as moderators during the technical conference.

The AQD Chief Dr. Felix Ayson, Pakingking Jr., Dr. Emilia Quinitio and Deputy Chief Dr. Takuro Shibuno, Research Division Head Dr. Ma. Junemie Hazel Lebata-Ramos, and Dr. Veronica Alava also attended the event.

> Aside from the technical conference, AQD also participated in the trade show with Ms. Grace Garcia as the technical resource person and booth in-charge. In addition, during the networking night, AOD was able to re-launch its latest publications released in 2013, namely: (1) Culture of Marine Phytoplankton for Aquaculture Seed Production; and (2) Field Guide to Mangrove Identification and Community Structure Analysis. The book on Coastal Resource Management: Perspectives from the Social Sciences published by the Philippine Department





AQD scientists Dr. Emilia Quinitio (top), and Dr. Rolando Pakingking Jr.(down) speak during AQUATECH's technical conference

of Agriculture-Bureau of Agricultural Research (DA-BAR) and the University of the Philippines Visayas (UPV) which includes a chapter on Market and Fisheries Development Issues in Coastal Resource Management written by Dr. Salayo was also re-launched. Complimentary copies of these publications were given to about 15 participants of the convention.

In joining this event, AQD was able to disseminate its science-based aquaculture technologies and technical services. Also, this event helped broaden AOD's visibility to aquaculture stakeholders throughout the Philippines. X



Participants from SEAFDEC/AQD including former Chief Dr. Joebert Toledo gather as AQD received a plaque of appreciation in recognition of its 40 years contribution to the aquaculture industry during the Networking Night. Incumbent AQD Chief Dr. Ayson and Dr. Toledo also received plaques of appreciation in recognition of their supports to the aquaculture industry.

#### TD presents crab bank model at the national fisheries exhibition in Thailand

(TD) joined the Thai Department of Nomklao" organized this year at the Future 10-day exhibition beginning 27 June

The SEAFDEC Training Department at the annual national fair "Pramong Province, just north of Bangkok. At the

Crab bank model presented at Pramong Nomklao exhibition

Fisheries in staging a fisheries exhibition Park Department Store in Pathumthani 2014, TD presents Crab Bank activities. With the distribution of various technical publications, brochures, VCDs and fishery-related souvenirs to the audience, the SEAFDEC visibility was promoted.

> Crab Bank is an activity to protect gravid swimming crab. Gravid crabs are deposited in cages until their eggs have hatched. Crabs in the cages are regularly checked and those having spawned are removed and sold to buyers.

# SPECIAL REPORT

### **Towards Sustainable Mud Crab Farming in the Philippines**

By SEAFDEC/AQD



Mud crab research started early at the SEAFDEC/AQD in 1977 followed by intermittent pauses until it resumed in earnest in 1997. First, in collaboration with Australian Centre for International Agricultural Research (ACIAR) with the aim of easing dependence on wild mud crab seed-stock and feed from fish by-catch (trash fish) and to eventually transition to hatchery-produced seed-stock and formulated diets. This was followed by a project funded by the European Union in collaboration with the University of Wales Bangor (U.K.), University of Ghent (Belgium), and Can Tho University (Vietnam). The main objectives were to improve the reliability and economic viability of mud crab hatchery and nursery production for mangrovepond aquasilviculture production systems and for stock enhancement. The Government of Japan Trust Fund partially funded the study on the domestication of mud crab in 2007 and recently on selective breeding programs.

Sustainable farming approaches for mud crabs using net pens in mangrove areas was developed by SEAFDEC/AQD both to conserve mangrove forests and to expand mud crab production areas. In 1995, SEAFDEC/AQD initiated studies on mud crab culture in mangrove pens in Panay Island. Then trials on mud crab monoculture in tidal flats with existing mangroves were verified in various places in the Philippines. An AQD study was also conducted to evaluate the effects of crab net pen systems on mangrove macroflora, and the replacement of dietary fish by-catch with low-cost pellets.

A decade ago, mud crab farmers in the Philippines were still a little cautious in the use of hatchery produced stock. Their main concerns were: will hatchery-produced crablets be as robust as those sourced from the wild?, will they grow as fast?, and will they be more prone to disease? Recently,

however, all these concerns have eased and farmers are now more confident in using hatchery crablets to stock their growout ponds or pens.

This transition of the mud crab industry from dependence on wild-sourced mud crab seed stock and wild feed resources of mostly fish by-catch, to hatchery produced seed stock and low cost formulated diets has moved mud crab farming in the Philippines to a more commercial scale. In 2007, SEAFDEC/ AQD started a 30-month project on Enhancing the Adoption of Mud Crab Technology in Northern Samar, implemented under the Community Agricultural Technologies Project of ACIAR. The framework was based on the Institutional Capacity Development on Sustainable Aquaculture (ICDSA) of SEAFDEC/AQD where science-based technologies are disseminated to coastal communities, Local Government Units and other stakeholders. Mud crab culture has also been one of the activities promoted under the SEAFDEC/AQD's Agree-Build-Operate-Transfer (ABOT) program, which is meant to disseminate science-based aquaculture technologies to entrepreneurs and fish farmers.

The list of technology adopters and collaborators, both local and international are enumerated at AQD's website, as well as the list of primary scientific publications by AQD researchers. Also available at the SEAFDEC/AQD bookstore are extension manuals on the mud crab written by SEAFDEC/AQD resource persons and scientists. These are: Biology and Hatchery of Mud Crabs *Scylla* spp. by ET Quinitio, FD Parado-Estepa (2008, 2<sup>nd</sup> edition) 47 pp AEM 34; Mud crab nursery



AQD scientist demonstrating to Timor Leste participants the technique of assessing sexually mature mud crab

in ponds by SEAFDEC/AQD, ACE, MODE/SPPI, BFVMC, ACELT, BFAR, ACIAR/CATP (2010) 27 pp AEM 47; Seed production and grow-out of mud crab (Scylla paramamosain) in Vietnam by NC Thach (2009) 29 pp AEM 42; Soft-shell Mud Crab Farming by ET Quinitio and Noe Lwin MM. (2009) 19pp; Nursery and grow-out of mud crab by ET Quinitio, EM Rodríguez and FD Estepa 2009 In: Training Handbook on Rural Aquaculture. Chapter 4.4. p. 87-95. SEAFDEC/AQD, Iloilo; and a very informative color poster on the life cycle of mud crab by ET Quinitio that includes an illustrated guide on the identification of the four mud crab species. Science-based technologies developed by SEAFDEC/AQD on the various phases of the mud-crab production cycle are described in detail for hatchery at: http://www.seafdec.org.ph/?p=5651; for nursery: http://www.seafdec.org.ph/?p=5657; for grow-out in ponds: http://www.seafdec.org.ph/?p=5670; and for grow-out in pens: http://www.seafdec.org.ph/?p=5677.

Since 2001, SEAFDEC/AQD has conducted training courses on mud crab, *Scylla serrata*. This training aims to provide participants with theoretical knowledge and practical skills in hatchery, nursery, grow-out operations and fattening of the mud crab. The participants are also taught mud crab broodstock management, production and preparation of natural food organisms, feeding, water management, disease prevention, proper harvest and post harvest packing and transport. The trainees are further taught the economics and proper business management on all phases of the mud crab production cycle. They are also made aware of their environmental responsibilities in conserving wild stocks and preserving mangrove areas to ensure the sustainability of the mud crab industry. To date, the Training and Information Division of SEAFDEC/AQD has trained a total of 242



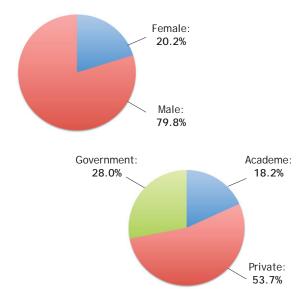
International mud crab training: during practical session on ablation and tagging of mud crabs (above) and measuring the carapace length (right)







participants, the majority of these came from SEAFDEC Member Countries while some 26 of these participants came from non-Member Countries. In line with the policy of SEAFDEC/AQD on inclusive growth and gender equality, women are well represented in this long-running training program. Below is a graph showing the distribution of training participants based on gender, and on the sectors of society that the participants represent.



Training participants based on gender (top), and sectors (above)

Mud crab aquaculture may indeed be the next sunshine industry especially if some of the existing constraints on its growth are met. Still much work needs to be done to improve production in the various phases of mud crab culture. In the seed production phase, there is a need to develop alternatives to live feeds, improve larval health and increase survival to crablet phase on a consistent basis. In the nursery and growout phases, there is a need to reduce cannibalism through improved shelters, continuous harvesting techniques and optimum feeding strategies. Finally, there is a need to develop cost-effective formulated diets through ingredient selection, nutritional requirements studies, pellet size, shape and stability suitable to mud crab feeding habits. All these constraints are being actively addressed by SEAFDEC/AQD researchers and the results of all these efforts will soon put mud crab farming on a more sustainable footing. X

# REGIONAL PROGRAMS

#### Joint program for tuna research in Sulu-Sulawesi Seas

and Management Department (MFRDMD) Group Meeting of SEAFDEC Joint Meeting was supported by the Japanese

The SEAFDEC Training Department and Fisheries Research Institute in Program for Tuna Research in Sulu-(TD) in collaboration with SEAFDEC Bintawa - Sarawak, Malaysia organized Sulawesi Seas from 27 to 28 May 2014 Marine Fishery Resources Development the Sub-regional Technical Working in Kuching - Sarawak, Malaysia. The



Trust Fund. Twenty-four participants from three SEAFDEC Member Countries surrounding the Sulu-Sulawesi Seas, namely Indonesia, Malaysia, and the Philippines joined the Meeting. Agreement of the work plan for 2014 to 2016, draft contents of information/data to be collected in participating countries, set of standardized methodology for data collection in some topics to facilitate data compilation and analysis, are among the outputs of this Meeting.

# SEAFDEC facilitates the charting of joint fisheries management accord for Cambodia and Lao PDR

SEAFDEC with support from the SEAFDEC-Sweden Project convened the 1st Meeting of the Technical Working Group for Fisheries Management in Trans-boundary Areas between Cambodia and Lao PDR on 2-4 June 2014 in Siem Reap, Cambodia. Guided by the MOU between the Fisheries Administration of the Ministry of Agriculture, Forestry and Fisheries, Kingdom of Cambodia and the Department of Livestock and Fisheries of the Ministry of Agriculture and Forestry, Lao PDR signed in July 2010, as well as the draft Memorandum of Agreement (MOA) which was recently developed by representatives from these two countries in February 2014, the Meeting was mainly tasked to compile the recommendations that could be used to improve the provisions in the said draft MOA.

Thus, after initiating a review of the relevant legal frameworks of the two countries, and the issues and constraints that should be addressed under the collaboration, the Meeting came up with the final draft MOA and identified the preliminary activities to be carried



Participants of the First Meeting of the Technical Working Group for Fisheries Management in Trans-boundary Areas between Cambodia and Lao PDR

by the Deputy Director-General of the Department of Livestock and Fisheries of Lao PDR. Moreover, the activities to be carried out until the end of 2014 were mapped out which could include: continue the review of laws and regulations, and policy statements; compile data on the information and experiences.

out under the MOA. The Meeting past and current status of their respective agreed that the revised draft MOA fishery resources and habitats; and would be finalized by fisheries-related evaluate the livelihood patterns and authorities of both countries and signed livelihood options, including traditional norms/local knowledge in both countries. Fisheries Administration of Cambodia Furthermore, the Meeting also agreed and the Deputy Director-General of the that members for the "joint technical working group" from both countries should be appointed as soon as possible in order to facilitate the implementation of the joint activities and capacity building, and promote the sharing of relevant

#### SEAFDEC fosters the development of joint approaches for fisheries management in North Andaman Sea

Through the SEAFDEC-Sweden Project, SEAFDEC continues to move towards developing suitable fisheries management actions for the sub-regional areas of Southeast Asia. On 27-28 May 2014, the Sub-regional Consultative Meeting on the Collaborative Fisheries Management around the North Andaman Sea/Myeik Archipelago was organized by SEAFDEC in Phuket, Thailand, to provide platform for Thailand and Myanmar to identify the joint approaches that could be adopted for the management of fisheries habitat, trans-boundary stocks, and fishing capacity, as well as for combating illegal and destructive fishing. Attended by representatives from Thailand and Myanmar, as well as those from relevant projects, initiatives and organizations, and senior officials of SEAFDEC, the Meeting was convened to specifically follow-up on the recommendations and





(left) Representatives from Myanmar; and (right) Representative from Thailand during the Sub-regional Consultative Meeting on Collaborative Fisheries Management around the North Andaman Sea/Myeik Archipelago

regional consultative for organized in both countries with cooperation from Bangkok, Thailand on 13-14 March 2012 relevant agencies that would address and in Phang-nga Province, Thailand on the prioritized key issues. The Meeting 28-29 August 2012.

a Collaborative Action Plan for Fisheries Management around the North Andaman Sea/Myeik Archipelago, which includes

decisions made during the previous sub-joint activities to be carried out by also enhanced the collaboration between Thailand and Myanmar, especially As a result, both countries agreed on in terms of exchanging and sharing information on the technical aspects of sustainable fisheries management.



# SEAFDEC-Sweden project promotes sub-regional arrangement on effective fisheries management between Malaysia and Thailand

Through sub-regional approach, the SEAFDEC-Sweden project has been providing avenues for the SEAFDEC Member Countries bordering the Gulf of Thailand, namely: Vietnam, Cambodia, Thailand, and Malaysia, to discuss and look for effective ways of improving the management of fisheries to sustain the fisheries resources in the sub-region. As a follow-up of the 4th Meeting of the Gulf of Thailand Sub-region, SEAFDEC with funding support from the Government of Sweden conducted the Sub-regional Technical Meeting on Effective Fisheries Management between Malaysia and Thailand from 14 to 15 May 2014 in Penang, Malaysia. The Meeting was attended by representatives from Malaysia and Thailand and officials from SEAFDEC/Secretariat, TD and MFRDMD.

This Meeting was convened in order that Malaysia and Thailand could discuss their mutual interest in developing a collaborative fishery resources management, considering that the nature



of fisheries, migration of fish, and mobility of people and vessels in the fisheries sector are important factors that could not be disregarded. In a sense, cooperative management is necessary in order to address trans-boundary issues in fisheries.

During the Meeting, information on transboundary/shared stocks, systems and procedures of vessel registration/ deregistration and issuance of licenses to fish, landing of catches by foreign fishing vessels, among others, were shared. The two countries subsequently discussed the key issues and agreed on the actions that need to be undertaken for management in the future.

better management of the transboundary/ shared fishery resources in the Gulf of Thailand. Through the discussion, better understanding on fishery issues in transboundary areas of the Gulf of Thailand shared by Malaysia and Thailand could be obtained, while ways and means of addressing such issues through joint approaches were also identified. It is anticipated that through such sub-regional arrangement between Malaysia and Thailand, cooperation could be further built up between the two countries towards the the final goal of promoting effective fishery resources

#### Training of trainers on elasmobranch taxonomy

Trainers on Elasmobranch Taxonomy this region from freshwater to deep sea. was co-organized by the SEAFDEC This includes 178 species of sharks from Training Department (TD) and Marine 8 orders (29 families), 144 rays from 5 Fishery Resources Development and orders (19 families) and seven species of Management Department (MFRDMD) chimaeras from two families. from 18 to 22 May 2014 at MFRDMD in Kuala Terengganu, Malaysia. The Meeting was supported by the Japanese Trust Fund. Fifteen biology-oriented officers from SEAFDEC Member Countries who will lead shark data collection and are experts on sharks and rays attended to training which aimed to improve techniques in data collection for sharks and rays in the region.

The Southeast Asian region water is a home to a rich diversity of sharks, rays, skates and chimaeras (Class Chondrichthyes). At least 329 species

The Regional Training of the of chondrichthyan are found to inhabit





Practical session of training of the trainers on elasmobranch taxonomy including sharks and rays



### Working group meeting on sharks in Southeast Asian region

Supported by the Japanese Trust Fund responsible for national shark's data to SEAFDEC, a three-day Regional collection participated in this Meeting. Technical Working Group Meeting on Data Collection for Sharks in Southeast Asian Region was organized from 22 to 24 April 2014 in Phuket, Thailand by the Training Department, to acquire more detailed and comprehensive information on the fisheries of sharks and rays species, as well as to have common understanding on the significance of such fisheries in the region.

Twenty-one representatives from SEAFDEC Member Countries who are

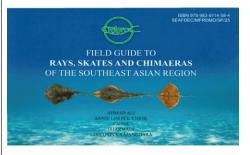






Observing the identification of shark species (above); and Regional Technical Working Group Meeting on Data Collection for Sharks in Southeast Asian Region (left)

# **New MFRDMD's publication**



New MFRDMD's Publication: Field Guide to Rays, Skates and Chimaeras of the Southeast Asian Region

Field Guide to Rays, Skates and Chimaeras of the Southeast Asian Region was launched by Chief of SEAFDEC/ MFRDMD, Hjh Mahyam Mohd Isa during the training of the trainers course on Elasmobranch Taxonomy on 18-22 May 2014 at Kuala Terengganu, Malaysia. This book was based on the knowledge and experiences of the authors through their researches, especially in Malaysia, Indonesia, Thailand and Brunei Darussalam and also on compiled information from SEAFDEC Member Countries, as well as references made from various sources available locally and internationally.



#### Regional training course in biotoxins analysis: ASP, AZA and BTX

The Regional Training Course for the project on Biotoxins Monitoring in ASEAN Region; ASP, AZA and BTX was successfully organized from 2-6 June 2014, in Singapore, with support from the Japanese Trust Fund.

This training course was jointly conducted under the Marine Fisheries Research Department (MFRD) programs by the Post-Harvest Technology Department and the Veterinary Public





Participants in the Regional Training Course in Biotoxins Analysis: ASP, AZA and BTX

Health Laboratory, Agri-Food & Veterinary Authority of Singapore, ASEAN-SEAFDEC Member Countries, together with two biotoxins expert, Dr. the purpose of this training course was Toshiyuki Suzuki from the National to upgrade the regional laboratory Research Institute of Fisheries Science, capabilities and credibility for testing Fisheries Research Agency, Japan and of Amnesic Shellfish Poisoning (ASP), Dr. Dao Viet Ha from the Institute of Oceanography, Vietnam.

Attended by 21 participants from the

(Continued on Page 15)

## Training course on EEAFM for trawl fisheries

The SEAFDEC Training Department (TD) in collaboration with the project on Strategies of Trawl Fisheries Bycatch Management Project (REBYC-II CTI) organized training course on Essential Ecosystem Approach for Trawl Fisheries Management from 24 to 30 April 2014 at the TD in Samut Prakan, Thailand. This training was an activity of FAO and SEAFDEC as project Regional Facilitation Unit (RFU), in collaboration with the Asia-Pacific Fisheries Commission (APFIC) and the Bay of Bengal Large Marine Ecosystem (BOBLME) Project.



Group discussion on EEAFM for trawl fisheries

(Continued on Page 15)

# SEAFDEC and REBYC-II CTI training on project development and management

FAO and other partners organized the Evaluation Approach, resulting in more Regional Training Course on Project effective trawl fisheries management Development and Management Using plans. Logical Framework Approach on 1-3 May 2014 in Thailand for 15 participants from REBYC-II CTI countries. This course was held immediately after the Essential Ecosystem Approach for Fisheries Management (EEAFM) training course, and right before the Regional Workshop on Work Planning 2014-2015.

The concepts of Logical Framework Analysis (LFA) and Results-based Management (RBM) have already been applied by the participating countries, however, advanced training in particular issues related with LFA analysis and RBM, project management, and monitoring & evaluation will further strengthen project implement. The skills and knowledge of Essential Ecosystem Approach for Fisheries Management (EEAFM) was consolidated through an improved understanding of the LFA

SEAFDEC/TD in collaboration with and RBM, as well as the Monitoring and ×





Regional Training Course on Project Development and Management Using LFA

# FUTURE ACTIVITIES

Date	Venue	Title	Organizer(s)
7-11 July	lloilo, Philippines	41st Anniversary of SEAFDEC/AQD: Sharing and promoting sustainable aquaculture technologies towards a prosperous ASEAN community	AQD
7-11 July	Palawan, Philippines	Ecosystem Approach to Fisheries Management (EAFM) Training	BFAR, Philippines
14-19 July	Semar, Philippines	Training/Workshop on Essential EAFM for Trawl Fisheries Management for Semar Sea	BFAR-FAO-GEF- SEAFDEC
28 July-1 Aug	Cambodia	On-site Training Course on Practical Approach to Co-management in Marine and Inland Fisheries of Cambodia	TD
4-30 August	Igang, Philippines	Training Course on Marine Fish Culture	AQD
11-15 August	Binangonan, Philippines	Training Course on Tilapia Hatchery and Grow-out Operations	AQD
13-15 August	Da Nang, Vietnam	Training of Trainer on Facilitating Fisheries Information Gathering Through Introduction of Community-based Fisheries Management	TD
18-22 August	Binangonan, Philippines	Training Course on Catfish Culture	AQD
19-21 August	Tawau, Malaysia	Sub-regional Technical Meeting for Finalizing Work Plan of Activities of SEAFDEC Joint Program for Tuna Research in Sulu and Sulawesi Seas	TD
20-21 August	Chonburi, Thailand	Regional Workshop on Regional Fishing Vessels Record (RFVR)  Database Development and Management	TD
26-28 August	Kuala Lumpur, Malaysia	Core Experts Meeting on Purse Seine Fishery in the Southeast Asian Region	MFRDMD
31 August - 1 September	Palembang, Indonesia	2 <sup>nd</sup> Regional Consultation on Sustainable Management of Eel Fisheries Resources and Aquaculture Production in the Region	Secretariat
1-9 September	Tigbauan, Philippines	Training Course on Detection of Viral Diseases in Marine Fish & Crustaceans	AQD
1-12 September	Igang, Philippines	Training Course on Seaweed Farming	AQD
2-4 September	Palembang, Indonesia	4 <sup>th</sup> International Conference on Southeast Asian Inland Waters	Indonesia
8-12 September	Binangonan, Philippines	Training Course on Freshwater Prawn Hatchery and Grow-out Operations	AQD
8 Sep-22 Feb 15	Internet	Distance Learning Course: Basic Principles of Health Management in Aquaculture	AQD
15-29 September	Samut Prakan, Thailand	Regional Training Course on Essential EAFM and Extension Methodologies	TD
23-25 September	Kota Kinabalu, Malaysia	Regional Technical Consultation on Guidelines on Preventing the IUU Fish and Fishery Products to Supply Chain	MFRDMD
13-17 October	Binangonan, Philippines	Training Course on Catfish Hatchery and Grow-out Operations	AQD
14 Oct-5 Nov	Tigbauan, Philippines	Training Couse on Mud Crab Hatchery, Nursery & Grow-out Operations	AQD
20-22 October	Malaysia	1 <sup>st</sup> Regional Technical Consultation on Regional Catch Documentation System	Secretariat & MFRDMD
4-6 November	Carins, Australia	7 <sup>th</sup> RPOA Coordination Committee Meeting	RPOA/IUU
25 Nov-4 Dec	Philippines	Training Course on Community-based Freshwater Aquaculture for Remote Rural Areas of Southeast Asia	AQD
1-3 December	Ubon Ratchathani, Thailand	37th Meeting of SEAFDEC Program Committee	SEAFDEC
4-5 December	Ubon Ratchathani, Thailand	17 <sup>th</sup> Meeting of the Fisheries Consultative Group of the ASEAN-SEAFDEC Strategic Partnership (FCG-ASSP)	ASEAN & SEAFDEC

#### SEAFDEC participates in the 22<sup>nd</sup> ASWGFi Meeting

(Continued from Page 16)

ASWGFi appointed Philippines to serve as ASEAN Lead Country for first project, and Malaysia for the latter.

During the Meeting, the project on "Promotion of Sustainable Aquaculture and Resource Enhancement in Southeast Asia", which was implemented by SEAFDEC as part of its Japanese Trust Fund-Supported Programs, was presented by Mr. Hajime Kawamura on behalf of the Japanese Government under the ASEAN Plus Three Cooperation.



#### **EEAFM** for trawl fisheries training course

(Continued from Page 13)

The course was designed for 22 local and national level fishery staff from the five REBYC-II CTI countries, especially those involved in trawl fisheries planning and economic development. The course provided knowledge on the Ecosystem Approach to Fisheries Management (EAFM) process, how this can assist decision-making for responsible and sustainable capture fisheries, the crucial skills of effective communication, facilitation and conflict management including the formulation of trawl fisheries management plan. The draft plans for each participant's local situation was developed during the course.

#### Regional training course in biotoxins analysis

(Continued from Page 13)

Azaspiracids (AZA) and Brevetoxins (BTX) biotoxins for fish and fish products, to improve knowledge and understanding on the levels of ASP, AZA and BTX biotoxins occurrences and incidences in fish and fisheries products in the ASEAN region, as well as to facilitate the exchange of information among Member Countries.

The training course comprised a series of lectures on the general introduction to marine toxins, analytical tools for the detection, characterization and quantification of ASP, AZA and BTX via instrumental analysis, as well as practical sessions on the sample preparation and the use of High Performance Liquid Chromatography Tandem Mass Spectrometer (LC/MS/MS) method and High Performance Liquid Chromatography method for detection of ASP, AZA and BTX. A tour to the various laboratories within the Veterinary Public Health Centre was also conducted for the participants. Following the training course, Member Countries would commence their biotoxins monitoring surveys for a period of one and a half years in their respective countries.

#### **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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#### Regional Plan of Action on Sustainable Utilization of Neritic Tunas in the ASEAN Region drafted

SEAFDEC-Sweden Project organized the Experts Group Meeting on Regional Plan of Action on Sustainable Utilization of Neritic Tunas in the ASEAN Region in Krabi Province, Thailand on 18-20 June 2014. The Meeting was attended by representatives from Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Thailand and Vietnam. together with their respective delegations, and senior officials of SEAFDEC. The Meeting was also attended by resource persons and representatives from the Embassy of Sweden in Thailand, ASEAN Tuna Working Group, ASEAN-USAID MARKET Project, Sustainable Fisheries Partnership, and the USAID Regional Development Mission for Asia.

After the discussion, the Experts Group Meeting adopted the 1st draft agreed that these draft documents should mechanisms.



Group discussion during the Experts Group Meeting on Regional Plan of Action on Sustainable Utilization of Neritic Tunas in the ASEAN Region

of the Regional Plan of Action on be discussed more thoroughly by the Sustainable Utilization of Neritic Tunas ASEAN Member States before the final in the ASEAN Region (RPOA-Neritic draft documents could be submitted Tuna) and the draft Capacity Building for consideration of the ASEAN and Program to support the implementation SEAFDEC authorities through the of the RPOA-Neritic Tuna. The Meeting respective ASEAN and SEAFDEC

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## SEAFDEC participates in the 22<sup>nd</sup> ASWGFi Meeting

General, Dr. Chumnarn Pongsri, attended fisheries-related authorities should also the 22<sup>nd</sup> Meeting of the ASEAN Sectoral be invited to the AEG-CITES Meeting Working Group on Fisheries (ASWGFi) in the case where aquatic species is convened with warm hospitality of the proposed to be listed by CITES. Government of Malaysia on 25-27 June 2014 in Kuala Lumpur.

presented the updated progress on 2014 under the Fisheries Consultative international fisheries-related issues, Group of the ASEAN-SEAFDEC including the Listing of Commercially- Strategic Partnership (ASSP), with a exploited Aquatic Species under the note that the project on "Utilization CITES Appendices, the Regional Fishing of Freshwater Fish for Value Added Vessel Record (RFVR) for Vessels Products" implemented by MFRD 24 Meters in Length and Over, and the ASEAN Catch Documentation System. On the CITES-related issue, the request made during the FCG/ASSP for the possibility of developing ASEAN common position to be reflected at CITES was reiterated. In response, the Meeting was informed that the matter could be conveyed for consideration of the ASEAN Experts Group on CITES at its next Meeting. Nevertheless, the Member

The ASWGFi subsequently endorsed the 22 ongoing projects implemented During the Meeting, SEAFDEC by SEAFDEC in 2013 and proposed for

SEAFDEC Mission, led by Secretary- States viewed that representatives from was already completed in 2013. The ASWGFi also endorsed two new projects to be implemented starting in 2014: 1) Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand; and 2) Enhancing Coastal Community Resilience for Sustainable Livelihood and Coastal Resources Management. While noting that these two projects are still subject to consideration of respective donor agencies, i.e. the Global Environmental Facility (GEF) and the Islamic Development Bank (IDB), the

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