



# AQDMatters

Newsletter of the SEAFDEC Aquaculture Department (AQD), Tigbauan, Iloilo, Philippines

## Enhancement of catadromous eel resources in SEA

PHOTO BY IFRDMD/NI KOMANG SURYATI

**F**ormer AQD Chief Dr. Felix G. Ayson and Research Division Head Dr. Evelyn Grace de Jesus-Ayson participated in the *First Workshop on Enhancement of Catadromous Eel Resources in Southeast Asia* in Palembang, Indonesia organized by SEAFDEC's Inland Fishery Resources Development and Management Department (IFRDMD) last 26 to 29 April 2016. The objectives of the workshop include the 1) review of the status of tropical catadromous eel resources and aquaculture activities in SEAFDEC member countries, 2) review of R&D on tropical catadromous eels, 3) review of eel resources management and conservation and measures adopted by governments, and



Participants of the *First Workshop on Enhancement of Catadromous Eel Resources in Southeast Asia*

4) formulation of action plans and policy recommendations for the sustainability of tropical catadromous eel resources in the region.

Dr. FG Ayson co-chaired the technical sessions and workshop with IFRDMD Acting Chief and Deputy Chief Dr. Satoshi Honda

while Dr. EDGJ Ayson presented a review of the R&D needs for sustainable production of catadromous eels through aquaculture.

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## R&D for sustainable aquaculture of tropical catadromous eels

**E**els of the genus *Anguilla* spawn in the open ocean. The larvae are carried by ocean currents to coastal habitats where they metamorphose to glass eels and then to elvers. The juveniles, which are also known as yellow eels then enter river systems and other freshwater bodies where they remain until they reach sexual maturity. Mature eels which

are also known as silver eels migrate downstream to the ocean where they spawn and die.

In Southeast Asia, the Indonesian short-finned eel (*Anguilla bicolor*) is one of the most important species farmed for the Japanese unagi kabayaki market. Culture of *A. bicolor* however, is solely dependent on glass eels collected from



PHOTO COURTESY OF FFISH.ASIA

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Indonesian short-finned eel (*Anguilla bicolor*)

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## Enhancement of...

Also present in the Workshop were Dr. Achmad Poernomo (SEAFDEC Alternate Council Director for Indonesia); Dr. Kom Silapajarn (SEAFDEC Secretary General), representatives from Malaysia, Myanmar, the Philippines, Thailand and Viet Nam; Mr. Shigeru Matsushita (President of PT Seagerland Unagi Jaya) representing the Indonesia eel aquaculture industry; Mr. Ichiro Nomura (Japan International Cooperation Agency, Jakarta Office); Dr. Taweekiet Amornpiyakrit (Senior Policy and Program Officer); Ms. Nualanong Tongdee (Information Program



SEAFDEC Secretary-General Dr. K Silapajarn (left) and former AQD Chief Dr. FG Ayson (right)

Coordinator, SEAFDEC Secretariat); representatives from academic and research institutions involved in eel R&D in Indonesia; and

officials from the Ministry of Fisheries (AMAFRAD, MMAF), Research Institute for Inland Fisheries (RIIF) and IFRDMD.

The workshop was capped with a tour of the new IFRDMD-RIIF campus.

- EGDJ AYSON

## R&D for...

the wild. Concerted R&D efforts on various aspects of eel aquaculture are needed to make production sustainable.

This review of R&D needs was presented during the First Workshop on Enhancement of Catadromous Eel Resources in Southeast Asia in Palembang, Indonesia organized by SEAFDEC's Inland Fishery Resources Development and Management Department (IFRDMD) last 26 to 29 April 2016.

- EGDJ AYSON

Challenges in eel aquaculture	R&D areas that need to be addressed
Total reliance on wild seeds	<ul style="list-style-type: none"> <li>• Broodstock development</li> <li>• Reproductive biology</li> <li>• Breeding</li> <li>• Seed production</li> </ul>
Low survival from glass eels to elvers	<ul style="list-style-type: none"> <li>• Collection, handling and transport</li> <li>• Nutritional approaches                             <ul style="list-style-type: none"> <li>• Feeding biology</li> <li>• Feed development</li> <li>• Feeding management</li> </ul> </li> <li>• Environmental/physiological requirement</li> </ul>
High feed costs	Feed development using locally-available ingredients
Occasional disease problems	Health management
Focus on species that are in high demand	Development of culture techniques for other potential species

## AQD helps analyze issues on exploited aquatic species

AQD Acting Chief and Deputy Chief Dr. Chihaya Nakayasu and Scientist Dr. Maria Lourdes Aralar together with other representatives from SEAFDEC Departments and ASEAN-SEAFDEC Member Countries convened during the SEAFDEC Expert Meeting on the Commercially-exploited Aquatic Species on 16-17 May, in Bangkok, Thailand.

Organized by SEAFDEC Secretariat, the assembly discussed the possible impacts of the proposed inclusion of commercially-exploited aquatic species in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendices on the sustainable development



Participants of the ASEAN-SEAFDEC Regional Consultation

of fisheries in SEAFDEC Member Countries. A set of technical recommendations on the issues related to conservation and sustainable utilization of commercially exploited aquatic species (CEAS) was developed from the meeting.

Subsequently, a Regional Consultation for Development of the ASEAN-SEAFDEC Common Position on the Proposed Listing of Commercially-exploited

Aquatic Species in CITES Appendices was held 19-20 May in the same venue.

Mr. Edwin Alesna of the Philippine Bureau of Fisheries and Aquatic Resources (BFAR) was unanimously elected and chaired the consultation. The participants discussed the ways and means of seeking cooperation of the ASEAN authorities through the ASEAN mechanism and ASEAN Experts Group on CITES (AEG-CITES). The

Consultation agreed that the positions of the ASEAN-SEAFDEC Member Countries on the proposed listing of commercially-exploited aquatic species into the CITES Appendices would be submitted to the SEAFDEC Council ad referendum for consideration. Then the said countries' positions would be submitted to the ASEAN Working Group on Fisheries (ASWGFi) for consideration and endorsement.

- GK FAIGANI

## Climate resiliency workshop taps AQD scientists

Workshop on Climate Resilient Aquaculture Operation organized by the Inland Fisheries and Aquaculture Division of the Philippines' Bureau of Fisheries and Aquatic Resources tapped AQD scientists Drs. Felix G. Ayson and Emilia T. Quinitio as resource speakers.

Dr. Ayson talked on the Environmental Physiology of Milkfish and High-value



Dr. Felix G. Ayson (left) discusses the environmental physiology of milkfish and high-value species and Dr. Emilia T. Quinitio (right) entertains a question from a workshop participant

Species (Grouper) while Dr. Quinitio discussed the Environmental Physiology of Shrimp and Mangrove Crab. Former SEAFDEC/AQD researcher, Engr. Angelito Gonzal, also presented the Generalized Implications of Agro-meteorology Parameters on Water Quality in Brackishwater.

Held last 3-4 May 2016 in Quezon City, the workshop aimed to discuss aquaculture operations in a closed-system environment (hatchery and brackishwater ponds) in order to identify issues and concerns related to risks caused by the changing climate condition as well as to identify approaches to mitigate such risks, and to

be resilient in such an event. Attendees of this workshop were fish farmers from selected regions where there is high production of crustaceans, milkfish and grouper.

- ET QUNITIO/RH LEDESMA/RD DIANALA



## Molocaboc Island and AQD celebrate five years of stock enhancement success

PHOTO BY ND SALAYO

It has been five years since AQD and its collaborators first released abalone and sandfish in the Community-Based Stock Enhancement (CBSE) Project Demonstration Site (locally known as ‘Semilyahan’) and now, it’s been successfully replenishing abalone and sandfish wild stocks in Molocaboc Island.

Last 22 June 2016, these achievements were commemorated in a meeting attended by the three-party collaborators of the CBSE Project including: 1) the local government of Sagay City through the Protected Area Management Board of the Sagay Marine Reserve (PAMB-SMR) led by Mayor Alfredo Marañon III and Molocaboc Barangay Council (MBC) led by Chairman Antonio Pasaylo; 2) the Barangay Fisheries and Aquatic Resources Management Council (BFARMC) led by its President Mariano Jarina through the Molocaboc Sea Ranchers’ Association (MOSRA) led by its President Terso Cordova; and 3) the Government of Japan-Trust Fund (GOJ-TF) Project of AQD led by Deputy Chief/ Acting Chief Dr. Chihaya Nakayasu.

from the CBSE demo-site. Meanwhile, the local fisherfolk gleaners reported collecting more abalones in rocky areas outside of the CBSE demo-site compared to prior years. Local students and fisherfolk who have actively participated in the nursery rearing and release of sandfish likewise attest to more sandfish gleaned around the intertidal flats than in previous years. In view of the protection of the CBSE demo-site, corals have recovered and now host various fish and shell species that now attract local tourists in Molocaboc. Hence, the engagement of Molocaboc stakeholders in the promotion and implementation of eco-tourism projects of the Sagay City LGU were asserted by BFARMC, MOSRA and MBC during the anniversary meeting.

The first release of abalone and sandfish was in June 9, 2011 as a key activity of two GOJ-TF studies led by AQD Scientist Dr. Nerissa D. Salayo and Former AQD Visiting Scientist Ms. Frances Nievaes. In 2015, AQD Scientist Dr. Jon Altamirano was requested to lead the release of sandfish. However, the socioeconomic baseline surveys, information



The corals in the CBSE demo-site recovered due to protection by local stakeholders

dissemination and community organizing activities in preparation for releases officially started during the first courtesy call with SMR-PAMB and MBC in November 2006.

The celebration honored the active participation of previous GOJ-TF co-managers and AQD Deputy Chiefs Dr. Teruo Azuma and Dr. Takuro Shibuno in the CBSE activities in Molocaboc. Also cited were AQD Senior Technical Assistants Ms. Raisa Castel, Mr. Charlemagne Recente, Technical Assistant Ms. Roselyn Noran and

Technician Mr. Rafael Barrido, as well as other previous staff, and the abalone and sandfish hatchery staff at AQD who have contributed to the success of the CBSE in Molocaboc.

Indeed, the GOJ-TF and AQD project with local stakeholders has led to the recovery of the rich marine ecosystem in the intertidal flats of Molocaboc. It also helped organize fisherfolk and pursued socioeconomic challenges in an island community through community-based resource enhancement initiatives.

- ND SALAYO/JM DELA CRUZ

PHOTO BY JM DELA CRUZ



AQD Acting Chief, scientists and staff with some of the members of BFARMC and MOSRA with their families during the simple 5th year anniversary celebration.

During the meeting, the key project activities that led to the achievements that are now the pride of fisherfolk in Molocaboc Island were recalled. The released abalones established and proliferated in coral patches in the intertidal flats such that the BFARMC and MOSRA are able to obtain operational funds from the sale of abalone harvests

## AQD, HEKS, TFM organize grouper culture training

AQD in collaboration with the Hilfswerk der Evangelischen Kirchen Schweiz (HEKS) and Task Force Mapalad (TFM), held a training course on *Grow-out Culture of Grouper and Oyster Culture* in Pilar, Capiz on 30-31 May and 3-4 June, respectively.

The training on grouper helped 20 fishfarmers and micro-entrepreneurs enhance their technical and practical knowledge on grouper culture. AQD Research Division head Dr. Evelyn Grace Ayson gave lectures on the overview of marine fish culture, biology and physiology of grouper, broodstock management, seed production, and nursery and grow-out culture. The participants also had practical sessions that include site assessment activity and stocking of grouper fingerlings in net cages.

Moreover, 30 fishfarmers participated in the oyster culture training course. AQD scientist Dr. Ma. Junemie Hazel Lebata-Ramos talked about the biology and ecology of oyster and other bivalves as well as techniques on grow-out culture. There were also lectures on oyster diseases & pathogens harmful to humans and post-harvest depuration and relaying by AQD scientist Dr. Rolando Pakingking Jr. In addition, AQD associate scientist Ms. Jocelyn Ladja discussed about broodstock management & seed production, hatchery culture in remote setting, and nursery culture in ponds & estuary. Lastly, Ms. Ernestina Peralta of the University of the Philippines Visayas gave a lecture on oyster products.

HEKS is a Swiss Church Aid that helps rehabilitate vulnerable households in municipalities affected by typhoon Haiyan. Together with its local partner organization TFM, it provides assistance through diversifying the livelihoods of the people and increasing their resilience against natural disasters.



AQD Research Division Head Dr. Evelyn Grace Ayson lectures on how to culture grouper



Participants stock grouper fingerlings at Brgy. Binaobawan, Capiz



Participants of the oyster culture training course with resource persons (R-L) Dr. R Pakingking Jr, Dr. MJHL Ramos, Ms. J Ladja and Ms. E Peralta; and training coordinator Ms. Richelle Bautista

## AQD inks agreement with QualiMed Hospital

AQD and QualiMed Hospital Iloilo signed a Memorandum of Agreement on 6 June 2016 wherein the latter will provide health care services for AQD employees.

The coverage of the agreement includes a 10% discount on hospitalization and all outpatient procedures for AQD regular employees with their qualified dependents and fixed-term employees. QualiMed Hospital Iloilo is located at the Atria Park District, Don Donato Pison Avenue, Brgy. San Rafael, Mandurriao, Iloilo City.

- RH LEDESMA



(L-R) QualiMed Hospital Iloilo’s finance manager Mr. Argie Arenga and president/CEO Dr. Henry Tupas seal agreement with AQD’s Acting and Deputy Chief Dr. Chihaya Nakayasu and Human Resource Management Section OIC Ms. Nira Grace Llona



## AQD provides training on sandfish

Seventeen participants finished the course on *Sandfish hatchery, nursery operations and management* held from 22 April to 6 May at AQD's Tigbauan Main Station and Igang Marine Station. The participants were from Kiribati (2), Iran (1), Maldives (3), and Mauritius (1).

Among the topics covered were biology & ecology of sea cucumbers; sea ranch

site assessment & evaluation; broodstock preparation for spawning; spawning induction; egg collection, counting & stocking in larval rearing tanks; production of natural food organisms; larval rearing; media preparation for culture of selected algal species; basic water quality parameters & monitoring; and impact of climate change on aquaculture production. The participants also had their practical activity on nursery and sea ranching monitoring at Molocaboc, Sagay City, Negros Occidental.

In behalf of the participants, Dr. Nafisi Mahmoud from Iran thanked AQD for giving

## Fifteen complete 3-week mangrove crab course

Fifteen participants from the Philippines (13), Germany (1) and Singapore (1) finished the training course on *Mangrove crab (mud crab) hatchery and nursery operations* from 11 May to 1 June 2016 at AQD's Tigbauan Main Station and Dumangas Brackishwater Station.

The trainees learned from AQD experts about broodstock management, induced spawning techniques,

production of natural food organisms and larval, nursery & grow-out culture techniques through a series of lectures and practical activities.

During the closing ceremonies, class chairman Mr. Rolando Salamat said that this course is a good learning experience. He said that the course did not only introduce new knowledge but also made him aware of the hurdles. "It only shows that putting up a hatchery [is] not an easy job, it is actually a complex one that requires more effort, more study and more dedication which we [trainees] are willing to do," he said.

AQD's Technology Verification and Demonstration Division Head Dr. Fe Dolores Estepa has high hopes for the trainees. "A closing ceremony



AQD Associate Scientist Ms. Milagros dela Peña demonstrating algal isolation technique to the participants

them useful information about sandfish. He also said that this training served as an avenue to meet different people and be able to impart their culture. "After this course I hope to

share my knowledge to other technician and to be involved in the aquaculture industry in order to lead in the production of healthy food for our society," he added.

- GK FAIGANI



Trainee Mr. Henzun Clarito during the ablation and tagging activity

means the end of your stay with us but that should not mean it is the end of the ties between you and AQD. It would be good to know when all of you successfully venture into mangrove crab (mud crab) hatchery and nursery operations. We hope you'll share your experiences and

techniques with each other and with us because we will be happy to hear from you soon," Dr. Estepa said.

Following this course, AQD also conducted a mangrove crab (mud crab) nursery and grow-out operations training course last 13-22 June 2016.

- JM DELA CRUZ

PHOTOS BY R PAGADOR

PHOTO BY CV GENZOLA

## Mangrove crab nursery and grow-out course concludes

"I would like to thank our speakers [resource persons from AQD] who enlightened us about aquaculture especially growing mangrove crabs... thank you for imparting your knowledge and expertise... we are [now] more equipped and more updated... and we can teach this to our students... let's continue to be productive... helping our neighborhood and building our fishery industry for the next generation...." said Ms. Rosario Villaruel, an instructor at Carlos Hilado Memorial State College, during the Closing Ceremony of the

training course on *Mangrove Crab Nursery and Grow-out Operations*.

Ms. Villaruel together with 11 other participants completed the 10-day training course on 22 June 2016 held at AQD's Tigbauan Main Station and Dumangas Brackishwater Station.

The training course had lectures and practical sessions such as biology, identification, and anatomy; hatchery operations; diseases and health management; nursery management; grow-out culture in ponds and pens; feed formulation; and pond water management. There were also lectures on concepts and principles of sustainable aquaculture, food safety in aquaculture production, mangrove management, and marketing among others.

- RH LEDESMA



A practical activity on acclimation and stocking of crab instar in hapa nets



Trainees learn to conduct sampling and monitoring of crabs in ponds

PHOTOS BY CV GENZOLA

## Organization and policy orientation at BFS

To ensure the efficiency of the implementation of the department's policies and employee benefits, AQD's Human Resources Management Section conducted an *Organization and Policy Orientation* for its Binangonan Freshwater Station (BFS) and Manila Office staff on 4 May at BFS.

The orientation covered AQD's existing policies, office procedures, flow of transactions, employees' welfare benefits and incentives. The last orientation conducted in BFS was in February 2011.

- GK FAIGANI



Attendees of the organization and policy orientation

PHOTO BY MHS STINSON



## Research Seminars



**M**r. Norwell Brian Bautista, AQD Laboratory Microscopist, talked about “Scientific presentation principles and correct use of presentation software” on 9 June 2016.

Mr. Bautista discussed that scientific presentations are meant to produce interaction between scientists leading

to collaborations, that result in scientific innovation. Therefore, it is important that scientific communication is clear, simple and structured.

According to Mr. Bautista, in making a presentation, the presenter must see to it that the flow of thought is clear and information is logically arranged. In addition, the

presenter must also use common terms (as much as possible) that are easily understood by listeners.

Lastly, improper use of presentation software such as PowerPoint™ often leads to poor thought retention among listeners. 🐾

- RH LEDESMA



**D**r. Mae Catacutan, AQD Scientist discussed her study “Practical diet for the grow-out culture of the snub nosed silver pompano, *Trachinotus blochii*” on 23 June 2016.

Dr. Catacutan conducted a series of feeding experiments to determine optimum levels of crude protein (CP) and crude fat (CF) in pompano diet. In her first experiment, pompano fingerlings (ABW

1.6 g) were fed practical diets with different levels of crude protein and crude fat. The results showed that regardless of lipid level the weight gain, specific growth rate and feed conversion ratio were significantly highest at 54% crude protein. In another experiment, bigger pompano (ABW 70 g) were fed four diets (CP levels 46%, 49%, 52% and 55%) and reared for 14 weeks. The fish fed with 55% protein diet has

significantly highest weight gain, specific growth rate and feed conversion ratio. She also discussed that diets may lack essential amino acids since growth did not reach a plateau even when fish were fed high protein diets. Furthermore, she noted that if the dietary crude protein level is lower than 50%, the growth of pompano can be enhanced by supplementing taurine. 🐾

- GK FAIGANI



**A**QD Scientist and FishWorld Museum Curator Dr. Teodora Bagarinao presented her research “High biodiversity at the SEAFDEC/AQD aquaculture research stations in different marine habitats in Iloilo and Guimaras: focus on mollusks” at AQD’s FishWorld Museum on 24 June 2016.

Dr. Bagarinao reported on the results of her species inventories made around AQD research stations [Tigbauan Main Station (TMS), Igang Marine Station (IMS) and

Dumangas Brackishwater Station (DBS)] to determine the present biodiversity and enable future monitoring.

In TMS, at least 579 species from 213 families (including 252 species of fishes, 228 mollusks, 48 crustaceans, 12 cnidarians, 9 echinoderms, 16 seaweeds, sea turtles, and sea snakes) were found inhabiting the nearshore areas after sampling at the sand-gravel intertidal and monitoring of the catch of various gears. In IMS, there were around 786 species in 261 families collected

or photographed, including 74 species of fishes, 40 crustaceans, 391 mollusks, 44 echinoderms, 87 cnidarians, 47 poriferans, 24 ascidians, and 12 bryozoans, and sea snakes living among 48 seaweeds and 4 seagrasses. Lastly, 90 species of non-crop fishes lived in DBS ponds, along with 35 crustaceans, 60 mollusks, three echinoderms, two cnidarians, and a water snake. According to Dr. Bagarinao, aquaculture farms should be managed for high biodiversity to ensure sustainability. 🐾

- JM DELA CRUZ

## AQD staff changes

### Change of employment status



**Ms. Erish Estante**, former DOST contract for service employee, has been hired on a fixed-term contract as *Senior Technical Assistant* at the Breeding and Seed Production Section



**Ms. Mary Anne Mandario**, former DOST contract for service employee, has been hired on a fixed-term contract as *Senior Technical Assistant* at the Breeding and Seed Production Section



**Ms. Mechil Somera**, former DOST contract for service employee, has been hired on a fixed-term contract as *Technical Assistant* at the Fish Health Section



**Ms. Ellen Grace Tisuela-Ledesma**, former DOST contract for service employee, has been hired on a fixed-term contract as *Technical Assistant* at the Breeding and Seed Production Section



**Mr. Charles Eugene Villanoche**, former DOST contract for service employee, has been hired on a fixed-term contract as *Technical Assistant* at the Fish Health Section

### New personnel



**Ms. Jacqui Lou Valenzuela**, has been hired on a fixed-term contract as *Senior Technical Assistant* at the Technology Verification and Demonstration Division



**Mr. Joey Arboleda**, has been hired on a fixed-term contract as *Technical Assistant* at the Fish Health Section



**Mr. Rex Delsar Dianala**, a former employee, has been hired on a fixed-term contract as *Information Specialist 2* and designated as *OIC* at the Development Communication Section



**Mr. Dan Joseph Logronio**, a former employee, has been hired on a fixed-term contract as *Senior Technical Assistant* at the Fish Health Section



## CONGRATULATIONS GRADUATES!!!

**Dan Joseph Logronio**, Senior Technical Assistant, finished his Master of Science in Genetics (minor in Molecular Biology & Biotechnology) degree at the University of the Philippines (UP) Los Baños

**Norwell Brian Bautista**, Laboratory Microscopist, finished his Master of Chemistry degree at UP Visayas (UPV)

**Jeralyn Panizales**, Chemist, finished her Master of Chemistry degree at UPV

**Richelle Bautista**, Information Assistant, finished her Master of Science in Fisheries-Aquaculture degree at UPV

**Rossea Ledesma**, Information Assistant, finished her Master of Management-Public Management degree at UPV

**Aishwarya Isabel de la Peña**, daughter of Associate Scientist **Milagros de la Peña**, finished her degree on Bachelor of Science in Business Administration (Marketing) at UPV

**Regina Marielle Arnaiz**, daughter of Laboratory Manager **Margarita Arnaiz**, finished her degree on Bachelor of Science in Chemistry at UPV

**Nic Franz Mallare**, son of Senior Technical Assistant **Mae Mallare**, finished Junior High School with Best in Research Paper award at Iloilo National High School-Special Science Class

**Leobert Jul de la Peña**, son of Scientist **Dr. Leobert de la Peña**, finished Elementary as First Honors and Most Outstanding Graduate at Kinaadman Elementary School Inc.

**Yoko Ysabel Abroqueña**, daughter of Administrative Officer **Kimberly Dianne Abroqueña**, finished Kindergarten at Kinaadman Elementary School Inc.

**Gabriel Gelvero**, son of AFD-OIC **Ms. Jasmine Gelvero** and **Engr. Arnel Gelvero**, finished Kindergarten at Kinaadman Elementary School Inc.

# AQD scientist receives award for contributions in freshwater research

**D**r. Maria Lourdes Cuvin-Aralar, an AQD scientist, was given a special award for her contributions to freshwater biodiversity and ecosystems science during the *1st Philippine Symposium on Freshwater Biodiversity and Ecosystems* held at the University of Santo Tomas, Manila, Philippines from 7 to 10 June 2016.

During the event, Dr. Cuvin-Aralar also talked about the *Impact of aquaculture on fish biodiversity in the freshwater lake Laguna de Bay, Philippines* and served



AQD scientist Dr. Maria Lourdes Cuvin-Aralar (2nd from right) together with the other recipients of the *1st Philippine Symposium on Freshwater Biodiversity and Ecosystems* special awards for contribution to freshwater biodiversity and ecosystems science

as one of the judges during a *Graduate Student Oral Competition*.

Dr. Cuvin-Aralar has worked with AQD for about 30 years where her expertise in freshwater species was underscored when she became leader of the Small-holder freshwater aquaculture program. She obtained her BSc

Zoology and MSc Biology degrees from the University of the Philippines (UP) Diliman in Quezon City, Philippines and MSc Zoology from the University of Glasgow in United Kingdom through a grant from the British Council Scholarship. She graduated magna cum laude from Hohenheim University in Germany with a Dr. Sc. Agr.

through the German Academic Exchange Service Scholarship. Dr. Cuvin-Aralar has also taught at UP Diliman Institute of Biology and has been invited as a resource person for various training courses on giant freshwater prawn culture, water quality, and site selection. 🐡

- RH LEDESMA

## Outstanding library award given to AQD Library

**K**udos to AQD Library for bagging the *2015 Outstanding Academic/Research Library Award* given by the Philippine Association of Academic and Research Librarians, Inc. (PAARL).

The award recognizes the AQD Library for its contributions to academic and research librarianship; outstanding leadership in national and regional library development in the areas of management, education, training, information and documentation services; as well as commitment to information networking and linkages.

Mr. Stephen Alayon, OIC of AQD Library and DataBanking Services Section, received the award during PAARL's awarding ceremony held at the Far Eastern University in Sampaloc, Manila on 29 January 2016. 🐡

- RH LEDESMA



### AQD Matters

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