

SEAFDEC AQD Matters

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

AQD celebrates 40 years of R&D

Only good things to say

Stakeholders take center-stage at AQD's ruby jubilee celebration on 11 July at its main station in Tigbauan, Iloilo. They gave testimonials of AQD's work from three perspectives: that of a regional (Southeast Asia) policy-making body, R&D sector, and private sector. Basically, they only have good things to say.

The Philippine government through the Department of Agriculture sent a message of support which was read by AQD's technology verification & demonstration head Dr. Emilia Qunitio. In addition, AQD Chief Dr. Felix Ayson and SEAFDEC Secretary-General Dr. Chumnarn Pongsri gave a state-of-AQD-address and an inspirational speech, respectively, to an audience of stakeholders and past & present employees.

With the AQD Chief Dr. FG Ayson (leftmost) are SEAFDEC Deputy Secretary-General Mr. Hajime Kawamura and Secretary-General Dr. Chumnarn Pongsri



PHOTOS THIS PAGE BY GK FAIGANI / MIT CASTANOS

Mr. MIAO WEIMIN, aquaculture officer, FAO Regional Asia-Pacific Office, Bangkok, Thailand:

"My experience in SEAFDEC/AQD is very unique... very important to my life and to my career... AQD conducted a lot of training programs that favor Asia's aquaculturists; many of them are now very active in the national and regional even global aquaculture development. We have one senior alumnus who is currently the Chief of Aquaculture Management of FAO; there are also many other trainees working in Thailand, Philippines and China (in high-ranking positions)... FAO highly appreciates the contribution of AQD to aquaculture development in this region and in other parts of the world..."

View the full video of Mr. Miao's interview at <http://www.youtube.com/watch?v=z-H-M2nNLKI&feature=youtu.be>. He was interviewed in Cebu City in April during SEAFDEC's 2013 Council meeting (top photo; inset: Mr. Miao with the AQD Chief) and the interview shown on 11 July



AQD researcher Ms. Didi Baticados with Mr. Antonio Villaluz, son of the first AQD Chief Domiciano Villaluz; (center photo, forefront) scientist Dr. Vern Alava and admin-&-finance head Ms. Kaylin Corre; (upper right, in red) associate scientist Dr. Fiona Pedroso and scientist Dr. Myrna Teruel; (lower right) finance assistant Ms. Marivic Decafe, senior technical assistant Ms. Gemma Arnaldo and retired employee Ms. Rose Mallo



Dr. CESARIO PAGDILAO, deputy executive director, DOST-PCAARRD, Los Baños, Laguna:

“Because of the quality of their research work, AQD researchers have been consistent recipients of the Dr. Elvira Tan Memorial Awards for best papers in aquaculture. (At present) AQD is involved in DOST - funded programs on milkfish, shrimps in collaboration with UPV; and in 2012, we started (directly funding) AQD for the mudcrab program... We appreciate as well the efforts being done by AQD and UPV in capacitating other academic institutions by working with them.

We share the same vision for the aquaculture industry ~ improving productivity of commodities and make the industry globally competitive...”

View the full video of Dr. Pagdilao's testimonial at <http://www.youtube.com/watch?v=S77aA1vsS18&feature=share&list=UUihZ45LMZ5d8qRpptqADKzg>



Dr. CRISPINO SACLAUSO, director, UNIVERSITY OF THE PHILIPPINES VISAYAS - INSTITUTE OF AQUACULTURE, Miag-ao, Iloilo:

“What really galvanized the relationship (of UPV and AQD) was the institution of the graduate program in mid-70s intended to produce the critical mass of researchers for AQD, UP College of Fisheries, and institutions across Asia-Pacific... Undeniably, collaborative research generated the knowledge base of R&D in aquaculture and fisheries in the years that follow. (Today, the relationship is) reinvigorated by mutual agreements where AQD researchers serve as advisers, co-advisers or members of thesis committees at UPV, and as project leaders in R&D projects being funded by DOST-PCAARRD...”

View the full video of Dr. Saclauso's testimonial at <http://www.youtube.com/watch?v=TzVfXzYL13g&feature=share&list=UUihZ45LMZ5d8qRpptqADKzg>



Dr. JAIME GISON, medical doctor and fish farmer, Oton, Iloilo:

“I went to AQD and tried to inquire for training in 2007. They gave a lot of help in the culture of varied species including abalone and sandfish. After the training, I now have new friends, new colleagues, and AQD became a good family to me.

Thank you AQD for giving me all these unselfish data which in turn, I passed on to farmers. I am always reminded of what US President Kennedy had said: “Do what you can do for your country and not for yourself”. Happy anniversary and more power to SEAFDEC!”

View the full video of Dr. Gison's testimonial at <http://www.youtube.com/watch?v=G-CkuoiT1YM&feature=share&list=UUihZ45LMZ5d8qRpptqADKzg>



[Left] A trainee on marine fish hatchery from Myanmar, Mr. Aung Thein Tun, carries his country's flag during the processional; [below and bottom left] the other flags of member-countries and of SEAFDEC were carried by AQD staff.

[Bottom right] To give the celebration a Southeast Asian feel, emcees and scientists Dr. Ma. Rowena Eguia and Dr. Edgar Amar stated the status of aquaculture of each country as its respective flag comes in. Brunei Darussalam, for example, is developing an aquaculture industry with an estimated value of US\$200 million by the year 2023, and this is about 50% of its overall fisheries industry. Several areas and strategic locations have been developed for fish and prawn breeding and farming



[Above] AQD's research head Dr. Relicardo Coloso and Deputy Chief Dr. Teruo Azuma gave the welcome and closing remarks, respectively. Dr. Coloso expressed pleasure at AQD's achievements in its first 40 years of research-and-development, while Dr. Azuma thanked stakeholders for celebrating with AQD

PHOTOS THIS PAGE BY RH LEDESMA / GK FAIGANI / JM DELA CRUZ

“AQD originals” made it happen!

PHOTOS THIS PAGE BY RH LEDESMA / GK FAIGANI / JM DELA CRUZ



Mr. Terio Borlongan with wife Dr. Ilda Borlongan were cited by the AQD Chief as part of the original shrimp hatchery and feed development teams, respectively; Dr. Oseni Millamena also worked on feeds & feeding, ex-AQD Chief Dr. Joebert Toledo used to be on the fish breeding team as were Dr. Luis Ma. Garcia and Dr. Gerald Quintino



AQD originals Dr. Felicitas Pascual (feed development), Ms. Marietta Duray and Dr. Clarissa Marte (fish breeding & hatchery); Dr. Emilia Quintino (crustacean breeding & hatchery); and Dr. Zubaida Basiao (freshwater fish breeding & hatchery)

The AQD Chief acknowledges current AQD partners and collaborators who gave funds for its R&D, eg. DOST-PCAARRD, UPV, ACIAR, GOJ-TF, RIHN, Japan Ministry of Education and JIRCAS [represented below by Dr. Hiroyuki Sudo, here with Dr. FG Ayson; and Dr. Satoshi Watanabe who is with his wife Nahoko]

Forty years old, and still going strong” is how AQD Chief Dr. Felix Ayson described AQD in his address during the ruby jubilee. He told of the accomplishments of AQD and acknowledged the “AQD originals” who were present at the foundation day program [photos above] and who have contributed to the development of aquaculture technologies during their stint at AQD.

The Chief noted that AQD’s first impact was in the development of the tiger shrimp industry after AQD scientists completed the life cycle of *Penaeus monodon* in 1975. Next was milkfish which spontaneously spawned one evening in 1980. “The breakthrough in milkfish was done by local scientists on a local species but the work has global scientific significance,” Dr. Ayson said. Milkfish is important not only in the Philippines but also in Taiwan and Indonesia.

Other commodities soon achieved their own captive breeding milestones: rabbitfish in 1983, seabass in 1983, groupers in 1990, red snapper in 1992, abalone in 1994 and mud crab in 1997. Hand-in-hand with marine fish R&D was freshwater aquaculture, and this included tilapia, native catfish, carps and freshwater prawn. AQD also worked on mussels, oysters and the kapis shell.

“But to truly make an impact,” the Chief said, “technologies have to reach the end-users through technology & information dissemination and extension activities.” By the ruby jubilee year, AQD has produced 54 extension manuals and more than 10,000 training alumni (42% are from the Philippines, AQD’s host country) in 413 courses. AQD trainees are found in 30% of the 192 member-states of the United Nations. “This is our contribution to global aquaculture,” he pointed out. “The challenge for AQD is how to increase fish production through intensification of culture systems without harming the environment and in view of the changing climate. The overall goal is still food security and economic prosperity.”



SEAFDEC Secretary-General Dr. Chumnarn Pongsri:
“AQD has (been successful in its) turning points brought about by internal concerns and external changes in the global and regional fisheries environment. AQD (has also) addressed the changing priorities and needs of SEAFDEC member-countries ... The number 40 (is significant biblically) as it is followed by a period of restoration, revival and renewal. May AQD sustain its momentum so that our stakeholders could fulfill their hopes for a better life.”



UPV came in full force with (L-R, middlephoto) vice-chancellors Dr. Emilia Santos-Yap, Dr. Evelyn Belleza; aquaculture institute director Dr. Saclauso and chancellor Dr. Rommel Espinosa. [Bottom] Ms. Sylvia de la Cruz, provincial agriculturist of Capiz with Ms. KG Corre; and Tigbauan town mayor Atty. Suzette Alquisada (foreground)



AQD scientists/researchers with fishfarmers (sitting at right, or at forefront)



Based on the number of farmer/stakeholders who queued for the commodities (numbers were given by AQD's technical assistants above), marine fish and abalone are the most popular topics

PHOTOS BY JIM DELA CRUZ

Forum for fishfarmers

AQD welcomed more than 150 participants to its *Technology forum* on 12 July. The event started with five presentations by AQD: (1) use and culture of natural food by Ms. Milagros de la Peña; (2) sea cucumber production by Dr. Jon Altamirano; (3) rabbitfish culture by Dr. Felix Ayson; (4) seaweed culture by Ms. Ma. Rovilla Luhan; and (5) emerging diseases by Dr. Edgar Amar.

The presentations included new techniques / information that AQD would like to promote or see adopted as these can profit farmers.

After the lunch break was the one-on-one consultation between fish farmers and AQD scientists/researchers. Farmers mostly asked about marine fish & abalone culture and small-scale/backyard freshwater hatcheries.



Stakeholders at the forum

Mall exhibit for the ruby jubilee

To showcase its aquaculture technologies to the public, AQD was at SM City Iloilo from 3 to 9 June for its *40 years of aquaculture R&D: an exhibit of sustainable and viable fishfarming technologies developed by AQD*.

Iloilo City Mayor Hon. Jed Patrick Mabilog was the guest-of-honor at the opening-of-exhibit program on the first day. The mayor spoke of the importance of fish supply, with seafood restaurants very popular in Iloilo City, and this boosts tourism and gives employment. AQD Chief Dr. Felix Ayson, on the other hand, noted that aquaculture is now producing or supplying more than 40% of the worldwide fish requirement.

The exhibit featured fish aquaria, consultation, posters on AQD accomplishments and souvenir give-aways. A slideshow can be found at: <http://www.seafdec.org.ph/2013/40-years-of-aquaculture-rd/>

[L-R] AQD and UPV officials ceremonially open the exhibit on 3 June; stakeholders consult with AQD staff; a young person enjoys the fish figures meant for photo ops



PHOTOS BY RH LEDESMA

PHOTO BY MT CASTANOS

DKV lecture on sustainability



PHOTOS BY JIM DELA CRUZ

DKV lecturer Dr. ML San Diego - McGlone answers a question from the audience. Dr. McGlone is a Professor at UP Diliman's Marine Science Institute (MSI) who, with her colleagues, was awarded the prestigious 2008 *Elvira Tan Memorial Award* for best published paper in marine fisheries for their work on eutrophic waters, algal bloom and fish kill in fish farming areas in northern Philippines

Dean Domiciano K. Villaluz (DKV) was AQD's first Chief, and for his very able leadership in AQD's formative years, a lecture series is held yearly in his honor.

The ruby jubilee DKV speaker was Dr. Ma. Lourdes San Diego - McGlone who spoke on *Fish production and the environment* on 10 July.

Dr. McGlone noted that the growing demand for fish to feed an increasing Philippine population has seen the expansion of fish culture to coastal waters (mariculture) as a government strategy to satisfy the demand for fish.

"The case study of Bolinao, Pangasinan is a clear illustration of the link from expansion of mariculture activities to eutrophic waters, HABs or

harmful algal blooms, and fish kills," she said.

"The fish kills in Bolinao can occur in many other coastal waters," she further noted. "Mitigation measures such as monitoring from simple to high-tech, and modeling using hydrodynamic & depositional models must be considered to prevent history from repeating itself."

A field guide and 3 manuals

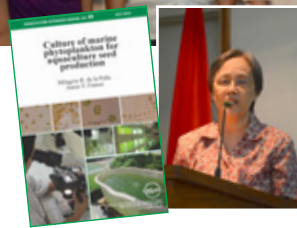
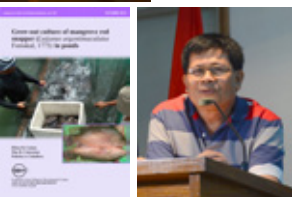
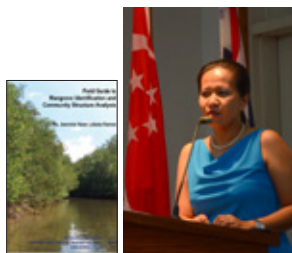
Launched on 10 July are the new publications of AQD from late 2012 to mid-2013:

- (1) *Field guide to mangrove identification and community structure analysis* by MJH Leбата-Ramos
- (2) Aquaculture extension manual (AEM) #55 (see photos at right)
- (3) AEM #54 on *Cage culture of high-valued species in brackishwater ponds* by JM Ladja, N Opiña, M Catacutan, E Vallejo and V Cercado
- (4) AEM #53 on *Grow-out culture of mangrove red snapper in ponds* by EB Coniza, MR Catacutan and PA Caballero
- (5) *2012 SEAFDEC/AQD Highlights* by Development Communication Section (Devcom)
- (6) AQD folder, 7 updated flyers, bookmarks, and notepad also by Devcom



PHOTOS BY EVANTOLINO / RS SUBALDO

AQD launches its latest manual on *Culture of marine phytoplankton for aquaculture seed production* (33 pages, inset) written by Ms. Milagros de la Peña and Ms. Annie Franco: [L-R] training & information head Dr. EG de-Jesus Ayson, research head Dr. RM Coloso, Ms. Franco and Ms. de la Peña, Mr. Aung Thein Tun of Myanmar (one of the three stakeholder-recipients of the manual), and AQD Chief Dr. FG Ayson



Lead authors talk of their journey in writing the field guide / manuals and acknowledge their sources of inspiration. All thanked AQD's Publications Review Committee which is composed of Dr. RM Coloso (chair); Dr. EG Ayson, Dr. MR Eguia, Dr. LM Garcia, Dr. ML Aralar, Dr. RV Pakingking Jr and Dr. ND Salayo

Open house & orientation

Four batches of stakeholders arrived at AQD's Tigbauan Main Station during the ruby jubilee open house, on 8 and 12 July.

The first was a group of farmers from Pavia, Iloilo who wanted to see freshwater aquaculture, and they visited AQD's tilapia hatchery and ponds.

The second to fourth batches were students from Tigbauan National High School (NHS), Ramon Avancena NHS, and Hokkaido University.



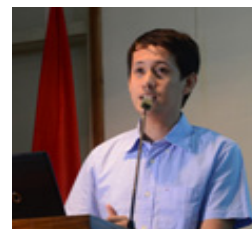
Fishfarmers at AQD's tilapia facilities; students cluster around the scanning electron microscope



PHOTOS BY RH LEDESMA

On 10 July, stakeholders were oriented on *Access to journal database and other resources at the AQD Library* by Mr. Stephen Alayon (below, inset), officer-in-charge of AQD's library & databanking section. This year, AQD has been granted access to *Proquest Central* courtesy of the Philippine e-lib, a collaborative project of the National Library of the Philippines, UP, DOST, DA, and the Commission on Higher Education. *Proquest* is a journal database that covers more than 160 subject areas.

Librarians and staff, present and past (Ms. Amy Arisola and Ms. Luisa Pacino, in black / red), are honored during the foundation day program for developing AQD's award-winning institutional repository, accessible at <http://repository.seafdec.org.ph>



PHOTOS BY GK FAIGANI / R SUBALDO

Retirees & service awardees

As an anniversary tradition, AQD paid tribute to its retirees and 20-year service awardees by handing out certificates of appreciation at the foundation day program. To the first group belong Dr. Relicardo Coloso, Mr. Dan Baliao, Mr. Eufredo Dumaran, Ms. Jocelyn Ladja, Mr. Ludovico Manzano, Mr. Sotero Magallanes, Dr. Emilia Quintio and Mr. Romulo Ticar.

To the second group are: Dr. Felix Ayson, Mr. Florito Pudadera Jr, Ms. Marivic Decafe, Mr. Alessandro Babol, Dr. Leobert de la Peña, Ms. Josette Gonzaga, Mr. Ludovico Manzano.

They all have given the best years of their lives to AQD's service and this is much appreciated by the AQD community.

TREES FOR REMEMBRANCE

[L-R] Retiree-researcher Mr. Dan Baliao, technical assistant Mr. Sotero Magallanes, and dispatcher/mechanic Mr. Eufredo Dumaran join the AQD community in planting a total of 74 trees (calamansi, jackfruit, pomelo, talisay, bulobitoon) in six areas within AQD's main station in Tigbauan. More photos on the tree planting and the motorcade that preceded it (see page 14) can be viewed at: <http://www.seafdec.org.ph/2013/trees-visits-cars/>



PHOTOS BY JIM DELA CRUZ

BFS celebrates, too!

AQD may be 40 years old, but one of its four stations ~ Binangonan Freshwater Station or BFS ~ is three years younger, celebrating its 2013 anniversary on 26 July by showcasing technological breakthroughs on giant freshwater prawn and tilapia.

“BFS represents SEAFDEC in Luzon,” said AQD Chief Dr. FG Ayson, “and it is tasked to protect freshwater resources from unsustainable aquaculture practices and to seek closer collaboration with agencies having similar thrusts as AQD.”

BFS held a farmers’ consultation-dialogue with scientists Dr. Ma. Lourdes Aralar and Dr. Rolando Pakingking Jr as resource persons. In addition, students from five schools vied for the best prawn/tilapia dish while seven farmers contested the biggest fish title.



PHOTOS AND STORY BY HAYDEE STINSON

Judges in the cook off are (L-R) BMEG’s Mr. Mike Vallesteros, former BFS station head and LLDA general manager Mr. Andy Santiago and DLSU’s Dr. Carmen Lagman

In first place is University of Rizal - Cardona with dishes named *Kuhala’s idol supreme* and *Lovely bothan prawns* (above). In second and third places are Polytechnic University of the Philippines (top, right) and Catalino Salazar National High School (right), respectively



Guests joining AQD staff include former colleagues; local officials from Cardona, Pipindan, and Kalinawan in Rizal; BAR staff; and BMEG personnel



Based on length and weight, the best and biggest freshwater prawn was won by Mr. Edmark Aragonos of Navotas, Cardona, Rizal while the best tilapia was won by Mr. Alex Ditablan of Pipindan, Binangonan, Rizal

Aquaculture week @FishWorld

Winners, Sci-Art AquaWeek, 22-26 July 2013

Biodiversity Lab: "Mollusk diversity around Panay and Guimaras" (7 high schools participated)

Prize	Names	Age	Yr	School
1 st	Lindric Ricardo Dino III Dyan Emilyn Segovia Coaches: Wilfredo Torrecampo Ivy Grace Solas	16	4	Colegio del Sagrado Corazon de Jesus
1 st	Khaessha Jhae Arcenal Kye Aelxandrea Velasco Coach: Angela Balista	16	4	Colegio de San Jose
1 st	Ma. Arabella Espartero Ronielle Emmanuel Coach: Angelo P. Olvido	15	4	Philippine Science High School-WV

Powerpoint Seminar: "40 years of aquaculture R&D at SEAFDEC/AQD" (6 high schools HS participated)

Prize	Names	Age	Yr	School
1 st	Karra Alexandria Casanares Coach: Angelo P. Olvido	15	4	Philippine Science High School-WV
2 nd	Frennie Tababa Coach: Mark S. Tacadao	15	4	Tubungan National HS
3 rd	Iana Frances Gatpatan Coaches: Wilfredo Torrecampo Ana Maria Daguay	16	4	Colegio del Sagrado Corazon de Jesus

Painting: "Pagpaanak kag pagpadako sang isda, sugpo, alimango, abalone" (10 HS participated)

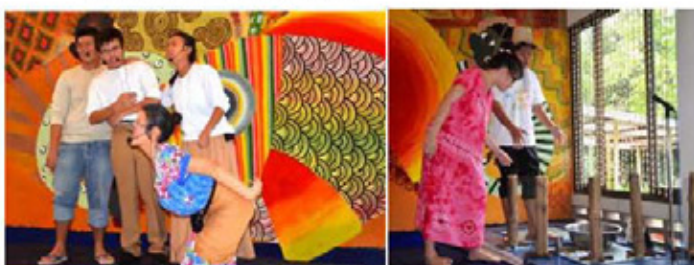
Prize	Names	Age	Yr	School
1 st	Antonio V. Sibug Coach: Amel G. Dologmanding	14	3	Iloilo City National HS
2 nd	Joseph Eleria Tabilona Coach: Arfou T. Geca	16	4	Tubungan National HS
3 rd	Daniel Christian Halaba Coach: Winniebert S. Labroda	14	3	San Joaquin School of Fisheries

Fish Play: "Ang pangabuhi sa punong" (6 HS participated)

Prize	Names	Age	Yr	School
1 st	Jester Samones Venise Buenafior Marianne Irish Ang Karl Dominique Torres Coaches: Wilfredo Torrecampo Raquel Cachuela Harold James Enriquez Everard Vicente	16	4	Colegio del Sagrado Corazon de Jesus
2 nd	Jason Anthony Supena Nathaly Kate Bohulano Sarah Mae Inosanto Magin Benedict Ferrer Coach: Hijasmin S. Muyuela	15	4	Philippine Science High School-WV
3 rd	Skara Drae Sapul Marc Joshua Tacsagon Steven Tajonera Jessa Baylon Coach: Ma. Crizilda Fabularcon	16	4	Tubungan National HS

Seafood Festival: "Farmed seafood as appetizer, entrée, and dessert" (9 high schools participated)

Prize	Names	Age	Yr	School
1 st	Joselito F. Barcas Jr. Christian Oliver Enriquez Mary Mae J. Galaura Coach: Ernancita Colomer	16	4	Colegio de San Jose
2 nd	Kitlyn Joy Deducin Rogelyn Sugcang Mary Elizabeth Anne Esteves Coaches: Achilles Capuso Rameilyn Monsale	16	4	Colegio del Sagrado Corazon de Jesus
3 rd	Vincent Mclat Lance Louie Barranco Joshua Palacios Coach: Salvacion de la Cruz	15	4	Saint Louise de Marillac School of Miagao



Bring, Show, and Tell: "Crustaceans for food"
(8 elementary schools ES participated)

Prize	Names	Age	Gr	School
1 st	Kaye Pauline Larroder Maria Isabel Layson Coach: Valerie May Belleza	10	5	SPED-ISEC
2 nd	Jamile G. Salcepuedes Ryona Franchesca R. Valdez Coaches: Cinderela Sotaridona Rogelio Cautivar	10.5	5	Hibao-an ES
3 rd	Chelsea Anne Lagon Ritchel Mercado Coach: Grace Ann B. Segovia	11	6	Iloilo Central ES

Nutrition and Aquaculture Quiz
(18 schools, 36 pupils participated)

Prize	Names	Age	Gr	School
1 st	Erika Jane Tubiano Coaches: Daisylyn Tantiado Myrna Gautier	12	6	Tigbauan Central ES
2 nd	Angela Isabelle D. Ecube Coaches: Tessie C. Po Lachelle Taclahan	12	6	Kinaadman ES
2 nd	Jenel Madronero Coaches: Anecia Dilag Melba Gemino	12	6	Nanga ES
3 rd	Julia Lyn Karmeli Laurea Coach: Ana Maria Daguay	10	5	Colegio del Sagrado Corazon de Jesus
3 rd	Gea Mae C. Germinal Coaches: Tessie C. Po Lachelle Taclahan	12	6	Kinaadman ES
3 rd	JV Galan Coaches: Valerie May Belleza Renelita Sayno	11	6	SPED-ISEC
3 rd	Caelan Philip Diaz Coach: Liberty Sulit	12	6	Jaro I ES
3 rd	Chloe Ann Dulos Coach: Mary Breth Gallinero	12	6	Iloilo Central ES

Aquarium Quiz
(17 schools, 34 pupils participated)

Prize	Names	Age	Gr	School
1 st	Jhea Lou Porras Coach: Ana Maria Daguay	11	6	Colegio del Sagrado Corazon de Jesus
1 st	Lara Isabel Atas Coach: Lani Binobo	11	6	Colegio del Sagrado Corazon de Jesus
1 st	Reya Carmelle Jaspe Coach: Diana Ross Custodio	10	5	Santo Domingo ES
2 nd	Ma. Elaine Grace Infiesto Coach: Vivian V. Anatan	12	6	Molo I ES
2 nd	Jonathan S. Molinos Coaches: Jessica S. Sequito Leni S. Solutan	11	6	Santa Barbara Central ES
3 rd	Josua James Angelo Galotera Coach: Valerie May Belleza	11	6	SPED-ISEC
3 rd	James Matthew Young Coach: Sofia Fanuga	11	6	SPED-ISEC
3 rd	Marchelle Fae Esmalla Coaches: Luisa Janeo Jenelyn E. Cajolo	11	6	Colegio de San Jose
3 rd	Mary Angeli Leonida Coaches: Mae Joy Palomo Kay Silla	12	6	West Visayas State University

Write and Draw a Children's Story: "Paglaki ko, I want to be a fish farmer"
(12 teams from 12 ES participated)

Prize	Names	Age	Gr	School
1 st	Diane Grace Pudadera Deborah Faith Monsalud Coach: Michael Caesar Tubal	12	6	WVSU Integrated Lab School
2 nd	Danielle Marie Yorac Joshua Paltuob Coaches: Grace Ann Segovia Delie Bell Manalo	11	6	Iloilo Central ES
3 rd	Chayanne Dominic Salcedo Alexandra Dasmarias Coaches: Willie Torrecampo Raquel Cachuela	12	6	Colegio del Sagrado Corazon de Jesus
3 rd	Izabelle O. Deloviar Milagros Therese P. Tutanes Coach: Julius Y. Reyes	11	5	Baluarte ES



Angola? What is AQD doing there?

Technical assistance. AQD's ABOT Aqua-Business or Agree-build-operate-transfer program has gone beyond Southeast Asia to the African continent. MicroTREND Enterprises of Luanda, Angola, requested AQD to assess the site of a proposed tilapia hatchery, nursery and grow-out operation in Quanza Norte. AQD sent researcher Mr. Dan Baliao from 4 to 10 June, and he noted that: "Aquaculture in Angola is small-scale and focused on inland freshwater aquaculture both by the communities and the private sector."

The 10-ha Luanda site was found feasible, with a good freshwater source and some structures (eg. concrete gate) already in place. AQD's recommended design of farm operations, Mr. Baliao further noted, is typical of a free-flowing impounded freshwater pond or reservoir for tilapia production in the Philippines. He suggested that, in addition to *Oreochromis niloticus*, an endemic African species, freshwater prawn can also be raised in the farm. Next to site evaluation is the implementation of farm improvement and cropping cycle plans.

AQD assesses the site of a proposed tilapia farm in Lu-calá, Angola. Middle photo shows the investor, local guide, and officers of MicroTREND Enterprises



PHOTOS BY D BALIAO

AQD conducts training on mudcrab and mangroves

Mangroves-and-mudcrab is a tandem that bodes well for both profit-oriented fish farmers and environment-oriented resource managers. For the former, AQD successfully completed its international course offering on "Mud crab hatchery, nursery and grow-out operations" on 12 June 2013. The three-week course at AQD's main station in Iloilo was attended by participants from Indonesia (1), Philippines (7) and Bangladesh (2). Lecture topics and practical exercises included broodstock management, induced spawning techniques; production of natural food organisms; larval, nursery and grow-out culture techniques.

For mangroves, the ELTI (USA-based Environment Leadership & Training Initiative) funded, and partnered with ZSL (Zoological Society of London) and AQD in conducting the training course on "Community-based mangrove rehabilitation" from 17 to 21 June. A total of 22 trainees from three clusters of people's organizations in the Philippines (Luzon, Palawan and Northern Samar) attended. Their feedback on the course was positive, with most participants indicating that their (technical) learnings can be applied within 3-6 months in their respective project sites.



PHOTOS BY RF BOMBEO

[TOP TWO AT RIGHT] Mud crab training participants at their hatchery practicals, and measuring crab broodstock. [BOTTOM RIGHT] Mangrove training attendees doing some planting, and [LEFT] identifying species using the mangrove key published by Pews Fellows Program, ZSL and AQD



Marfish training

Seven trainees coming from Kenya (4), Myanmar (1) and Philippines (2) finished the international course on *Marine fish hatchery* conducted from 25 June until 31 July at AQD's Tigbauan Main Station in Iloilo.

The month-long course included lectures on biology of marine fishes, broodstock management, larval rearing and hatchery operations as well as feed development, fish health management and marketing strategies. The participants also had hands-on experience on rearing marine commodities. They visited private hatcheries and fish farms where they saw how an actual commercial marine fish hatchery functions.

Trainee Mr. Anthony Mutua of Kenya's Marine Fisheries Research Institute shared his thoughts: "Capture fisheries could not sustain the needs of the people anymore and we need to find alternatives. Kenya is strongly promoting aquaculture. At AQD, we were able to gather in-depth knowledge of techniques to rear marine fish species — grouper, siganid, pompano and milkfish which are also available in Kenya — and I would like to thank AQD resource persons and staff for training us."

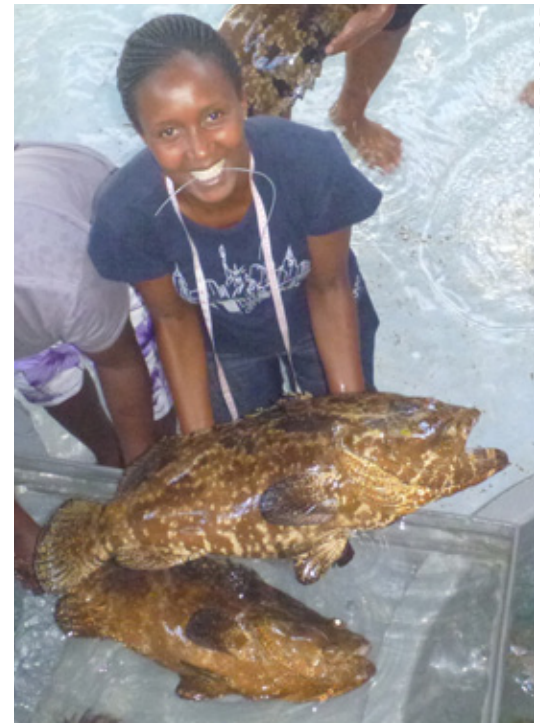


PHOTO BY RR PAGADOR

A trainee from Kenya sampling grouper broodstock as part of the training course

AQD @ Aquatech and tilapia R&D review

Four AQD scientists were tapped as resource persons / moderators for the 4th Aquaculture expo and convention (Aquatech) held 30-31 May in Tagaytay City.

Dr. Ma. Rowena Eguia, Dr. Ma. Lourdes Aralar, Dr. Nerissa Salayo, and Dr. Rolando Pakingking Jr. talked, respectively, on: (1) genetic technologies for improved fish production; (2) culture of giant freshwater prawn in lake-based cages; (3) economics of fish farming, and (4) development & application of anti-nervous necrosis virus vaccine in marine fish hatcheries.

Aquatech's opening was graced by BFAR IV director Ms. Remedios Manalang and former PBA / basketball player Mr. Alvin Patrimonio. The event was attended mostly by fish farmers, government personnel, academe, and the private sector esp. feed companies. AQD co-organized

the event, providing technical support and promoting Aquatech in tri-media.

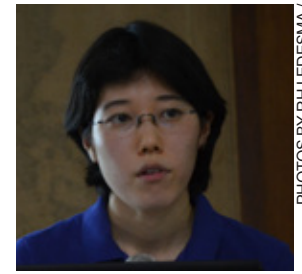
Meanwhile, Dr. Eguia was invited as evaluator during the *Tilapia research & development program review cum industry consultation* held 19-20 June in Muñoz, Nueva Ecija. In this consultation, DOST-funded projects of CLSU-Freshwater Aquaculture Center and UP Diliman-Institute of Biology were reviewed. Tilapia projects funded by BFAR-NFRDI, CHED and DA-BAR were also presented.

Opening of exhibit at Aquatech; co-organizers including AQD (represented by scientist Dr. MR Eguia, seated leftmost below) receive certificates of appreciation



PHOTOS COURTESY OF MR EGUIA

Research seminars



PHOTOS BY RHILDESMA JIM DELA CRUZ

Ms. Ma. Rovilla Luhan of SEAFDEC/AQD presented her study on *Agars of some Gracilarioids from the Philippines* on 13 June, noting that different genotypes of *Gracilaria* have varying gel strengths. Furthermore, alkali treatment can increase gel strength and decrease sulphate content in *Gracilariopsis heteroclada*.

Dr. Michele Nishiguchi of New Mexico State University (USA) spoke on *How a luminous bacterium-squid mutualism can help decipher the evolutionary mechanisms involved in shaping beneficial associations* on 7 June. She noted that vibrios are good experimental bacterial species because they are transmitted to new hosts with every generation, and a researcher can study how changing environmental conditions may effect bacterial infection, colonization, and persistence in different hosts.

Vibrios encounter potentially conflicting selective pressures, competing with one another to colonize the sepiolid light organ, but also competing for resources in the environment outside the squid. The “fit” or “fittest” vibrios eventually adapt and make a successful beneficial association with their hosts.

On 26 June, Dr. Michael Rice of the University of Rhode Island (USA) talked to AQD staff about *Modeling of aquaculture and use of common water bodies: a research and extension program for Southeast Asia*.

Dr. Rice said that the United States Soybean Export Council (USSEC) has funded a project to educate extension professionals and local government officials with responsibilities for regulating common water bodies within their jurisdictions about the concepts of aquaculture carrying capacity and associated social costs. The project is being done in cooperation with BFAR stations in Pangasinan. Mathematical modeling of aquaculture carrying capacity and social cost (of fish kills) is being taught with the aim of getting local government units to adopt these scientific tools in managing their aquatic resources.

Evolution of hatching enzyme genes in teleosts fishes was the topic of Dr. Mari Kawaguchi’s seminar on 26 June. She is from the Sophia University (Tokyo, Japan).

She investigated the hatching of the black rockfish *Sebastes schlegelii* embryos, and noted that a hatching enzyme is secreted from hatching gland cells to digest the chorion or egg envelope. The enzyme consists of a high choriolytic enzyme (HCE) and low choriolytic enzyme (LCE) which cooperatively digest the chorion. HCE swells chorion, then LCE digests the swollen chorion completely. She also found two kinds of HCE and studied their gene expression. The hatching enzyme is considered as well adapted to the natural hatching environment of rockfish embryo.



Dr. M Nishiguchi receives a certificate of appreciation from AQD’s training & information head Dr. Evelyn Grace de Jesus - Ayson (right)

RESA 2014

**International Workshop on
Resource Enhancement and Sustainable
Aquaculture Practices in Southeast Asia**

Challenges in Responsible Production of Aquatic Species

5-7 March 2014 Punta Villa Resort, Iloilo City, Philippines

For more information, contact:
 Dr. Maria Rowena Eguia
 Secretariat, RESA 2014
 E-mail: iwresa@seafdec.org.ph
 Telefax: +63 33 5119070
 Website: <http://www.seafdec.org.ph>

Homecoming party

PHOTOS BY IAN CONIZA / JIM DELA CRUZ



First the formalities: (1) registration, (2) signing the “I-wish-AQD-the-best-and-more-power-for-the-next-40-years” wall, (3) welcome remarks by AQD Chief Dr. FG Ayson, and (4) the batch photo shoot (from the originals to the newest hires). After the eats, anything goes! All these on the night of 12 July at AQD’s Tigbauan Main Station for the 2013 employee-alumni homecoming. More photos are posted at the AQD website (slideshow).



KUDOS!
AQD congratulates one of its originals, scientist emerita Dr. Jurgenne Primavera (above with three gentlemen colleagues) for bagging the *Outstanding book award* given by the National Academy of Science & Technology for the book *Beach forests and mangrove associates in the Philippines* that she co-authored with UP Visayas professor Dr. Resurreccion Sadaba. The award was given on 11 July in Manila. The book was published by AQD in 2012 with funding from UNESCO Jakarta through its Man & the Biosphere Programme and Japanese Trust Fund.





JUBILEE MOTORCADE

A prayer and a bit of firecrackers and the motorcade was off! Nearly 30 vehicles joined, starting from Jaro Plaza through Iloilo City streets to AQD's main station in Tigbauan, Iloilo on 9 July

Dancers & singers



PHOTOS THIS PAGE BY GK FAIGANI / JM DELA CRUZ / RH LEDESMA



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2010 Publications Review Committee
Dr. RM Coloso, Dr. EG de Jesus-Ayson, Dr. MRR Eguia,
Dr. LMB Garcia, Dr. MLC Aralar, Dr. RV Pakingking Jr,
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Circulation to friends of AQD: SB Alayon
For contributions and feedback, kindly email:
devcom@seafdec.org.ph



Devcom staff @ruby jubilee [L-R] JM de Pili, JM dela Cruz, MT Castañios, GK Faigani, RH Ledesma, R Subaldo