



# AQD Matters

In-house newsletter of the SEAFDEC Aquaculture Department (AQD), Tigbauan, Iloilo, Philippines

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# Make cheer! 'Tis the season of hope!

*From the AQD Chief*  
**Dr. Joebert TOLEDO**

I join everyone in wishing the AQD family and our stakeholders a brighter future through aquaculture!

Year 2008 is drawing to a close with AQD making very significant progress. First of all, despite the increase in R&D activities and higher spending in infrastructure, our prudent fiscal management has resulted in significant savings. We may now replace our badly damaged research equipments and buy a new shuttle bus. Second, our work targets were mostly achieved, with the Research Division and Training & Information Division both exceeding projected income targets. Third, there has been increased visibility of AQD in international meetings; increased collaboration with national, regional and international partners; and increasing requests for our technical support. Even in this last month of December, AQD was able to sign a US\$350,000 collaborative project on technology transfer and training on marine fish aquaculture with the National Institute of Fisheries of Ecuador. This would be our first foray into South America, an aquaculture hotspot in the world.

With all of that ahead of us, next year would be quite exciting; and let us look forward to another busy and productive year. We must not fail the Philippine Government who has, once again, put their trust in AQD's capability by increasing its contribution for the third successive year. We must not fail our collaborative national and regional partners; in particular, the GOJ Trust funded projects whose annual assessment was just completed. Year 2009 is the last year of the GOJ-TF 4, and another set of GOJ-TF programs will be implemented in 2010.

We must also not fail the SEAFDEC member countries, the academe and our other stakeholders who look to us as a global leader in the generation and transfer of tropical aquaculture technologies. And we must not fail AQD itself, who must maintain its integrity and core competence. We will continue next year the implementation of AQD's strategic plans and other programs or policy modifications.

I have faith that we will succeed once more with these two ingredients that AQD requires from all of us: **teamwork** and a **high degree of professionalism**. Once again, let us give our hearts and minds to AQD, our stakeholders and our partners.

Thank you to all of you, and a very Merry Christmas to you and your family!

*From the AQD Deputy Chief*  
**Dr. Hiroshi OGATA**

Dear Friends,  
I wish you all A Merry Christmas and  
A Happy New Year. Please kindly pass my best  
wishes to your families.

This is a season in which all of us in our  
organization think about the past year and look  
ahead to the upcoming one. Although I would like  
to say "What a wonderful year it has been", we  
had not only some good news but also some bad  
news. Nevertheless, if SEAFDEC/AQD was not  
successful we wouldn't be here today. I would say  
that most important of all, we are still here by our  
good teamwork and mutual confidence. I think we  
can all thank each other for the success, even if it  
was a small step. I believe everyone did a good job  
this year by trying and continuing to develop and  
grow in the course of a year.

I look forward to working again with you in the  
upcoming year.

In closing, I trust that the New Year will bring  
to you and your families continued good health and  
happiness.

Thank you and again, a Merry Xmas and a  
Happy New Year.

*From the Research Division Head*  
**Dr. Evelyn Grace DE JESUS -  
AYSON**

2008 is about to end - the days  
just seemed to fly amidst all of our  
activities. As we start our annual  
vacation, enjoy the parties with  
families and friends, and celebrate  
this blessed season in thanksgiving,  
let us also spend a moment to reflect  
on the year that was and the year  
that will be. In spite of the crises  
and calamities, we have a lot more  
blessings to be thankful for...  
many blessings to share. As we  
march into 2009, let us keep in our  
hearts and minds that together, we  
have overcome, and will overcome  
challenges if we all give our best and  
always strive for excellence in our  
work, whatever our roles are in AQD.  
I pray not only for everyone to be  
always in God's grace, but for us to  
live to be a blessing to others.

A Merry Christmas and another  
fruitful new year to all!

*From the Training & Information Division Head*  
**Mr. Renato AGBAYANI**

Christmas is a season of thanksgiving and sharing.

We thank the Lord for a productive 2008. We thank the Lord for a healthy and conducive working  
environment at AQD where management and staff work harmoniously. We thank the Lord for all the ICDSA and  
Training and Information projects that gave us the opportunity to build the capacity for sustainable aquaculture  
of the fisherfolk, local government extension workers, NGO personnel, teachers and students of fisheries. We  
thank the Lord for the hard working TID staff and ICDSA team members and for the unselfish support from the  
management group led by Chief Joebert, RD and TVDD researchers and technical staff, and AFD personnel that  
helped us do our work easier and more efficiently. We thank the Lord for the donors, partners and benefactors for  
their financial support and sincere cooperation for the success of our projects in fishing communities. We thank  
the Lord for our supportive families that encourage us to do our work well. We thank the Lord for the salaries,  
bonuses, and other fringe benefits which we have received this year. We thank the Lord for keeping us safe in all  
our travels. We thank the Lord for our good health and happiness.

I thank the Lord for our first "apo", baby girl Zoey.

In the true spirit of Christmas let us all share our blessings to others especially those who have less in life.  
Sharing is not only monetary. Let us unselfishly share our time, knowledge, skills and talents to our compatriots.

*Maligayang Pasko and Manigong Bagong Taon sa inyong lahat!*

*From the Administration & Finance Division Head*  
**Atty. Jerry OPINION**

PEACE!

Christmas is the time when we celebrate God's coming as man. The Son of God was born in a lowly manger and lived an ordinary life among men.

Today, the whole world is in crisis brought about by too much materialism and greed. We can all learn from contemplating the "Belen". The simplicity of Jesus' birth and life on earth has a profound lesson for all: to be simple and uncomplicated, to be meek and humble, and to be true and sincere.

May we all discover the many simple joys of the season.

Merry Christmas!

*From the Technology Verification & Demonstration Division Head*  
**Dr. Clarissa MARTE**

Merry Christmas and  
a Happy New Year!!!

# snapshots

CHRISTMAS CELEBRATION 12.12.08

@ AQD's Tigbauan Main Station



*Deputy Chief Dr. H Ogata makes beautiful music*



*The communities around AQD were recipients of the gifts bought with funds raised from the bidding sale of Christmas parols made by the various sections and divisions, and from donations. Chief JD Toledo leads the gift-giving*



*The AFD presentation (left); note the dancing gentlemen in the second row - Zaldy Suriaga, AFD Head Atty. J Opinion and Engineering Section Head Rex Tillo. The RD presentation, above.*



## Agreement with Ecuador's National Institute of Fisheries

Having very similar goals of responsible aquaculture/ fisheries, AQD and Ecuador's National Institute of Fisheries signed an agreement on 3 December for a two-year collaboration to establish aquaculture facilities (eg. multi-species marine fish hatchery/nursery and demonstration grow-out ponds & cages) and to conduct training (also on marine fishes) in Ecuador. NIF is allocating over US\$350,000 for AQD's technical assistance on species/site assessment, among others.

*General Director Mr. John Gumbs of the National Institute of Fisheries - Ecuador and AQD Chief Dr. Joebert Toledo agree to collaborate on marine fish culture technologies*



## Progress of GOJ trust-funded projects

In December 9 and 10, proponents and reviewers of Government of Japan Trust-funded projects gathered in Amigo Terrace Hotel, Iloilo City to review the work progress for 2008 and present plans for 2009.

The proponents attending the meeting include scientists and research staff from AQD, RIA-2 of Vietnam, Inland Aquatic Animal Health Research Institute of Thailand, and Research Institute for Freshwater Aquaculture of Indonesia.

The external reviewers were Dr. M Sano (Director of Fisheries Research Agency, Japan), Dr. EC Lacierda (Kagoshima University), Dr. LMB Garcia (University of the Philippines Diliman) and Dr. C Baylon (UP Visayas). They congratulated the study leaders for their "great efforts in implementing the studies as planned." Since 2009 is the last year of the GOJ-TF 4, they also urged the proponents to construct an information network and share the results of the studies. The manual on viral nervous necrosis (VNN) is one of the awaited results. There would also be the revised textbook on aquatic animal health, revised manual on diseases of penaeid shrimps, new manual on fish nursery, and new proceedings of the 2007 international workshop on fish disease. Already in press are two manuals: identification of commercially important freshwater prawns, and seed production & grow-out of mudcrab in Vietnam.

Dr. Hiroshi Ogata, AQD Deputy Chief and GOJ-TF manager of aquaculture projects, was also pleased with the progress of the three projects which cover: (1) development of fish surveillance system; (2) development of technologies and human capacity building for sustainable aquaculture; and (3) stock enhancement for threatened species of international concern. The GOJ-TF team is working on VNN and other viruses like WSSV, an "indigenous" probiotics, chemical residues in aquaculture; shrimps & prawns, freshwater prawn, mudcrab, sea cucumber, abalone, angelwing clam, giant clam, rice-fish culture, *Kappaphycus*, sea bass, seahorses, humpback wrasse; and socioeconomic analysis of stock enhancement and technology adoption.



*Dr. Junemie Ramos and Ms. Frances Nievales describe their studies on seed production and stock enhancement. On angelwing clam, Dr. Ramos has documented its stages of larval development until 21 days when larvae have settled onto diatom plates. Giant clams are growing well in Malalison Island, Igang Cove and Sagay Marine Reserve (SMR) in west central Philippines while diet-tagged 2-3 cm long abalone were released in July in SMR. Post-release monitoring continues. On sea cucumber, Ms. Nievales has set-up a small pilot-scale sea cucumber hatchery at AQD where several batches of <3 g juveniles have been produced, and later stocked in sea pens in Igang Cove. In Vietnam, as reported by Dr. H Ogata, sea cucumber has been released in Nha Trang Bay Marine Protected Area. This year's studies focus on determining biomass density in nursery pond and pen, and finding out the best release size. These experiments are ongoing, too.*



*RD Head Dr. Evelyn Grace de Jesus-Ayson discusses the studies on sea bass and humpback wrasse. On seabass, it appears that maintaining water temperature of 29-31 degrees Celsius extends the spawning season year-round. Dr. Ayson would like another year / season to validate this data before recommending the measure to hatchery operators because the add-on investment would be costly. On the wrasse, AQD is being helped by Palawan Aquaculture Corporation which maintains breeders that have been spawning for more than 3 years though seed production has not been very successful. AQD has made arrangements with the company to transport wrasse larvae to make parallel larval rearing runs in its Tigbauan Main Station for better monitoring.*

*TID Head RF Agbayani (above, right) on the other hand moderates one of the three sessions. On training, GOJ-TF has supported the conduct of international courses on marine fish hatchery, abalone hatchery, and crab seed production that were held at AQD with a total of 22 participants, 9 with GOJ-TF fellowships. GOJ-TF also sent an AQD staff to the Ishigaki Tropical Station in Japan to train on evaluation methods for genetic diversity of mudcrab; another two AQD experts were dispatched to Myanmar to give an seminar on crab culture (see related story this issue). Onsite training courses were conducted twice in Cambodia (30 attendees), and the eLearning course on the principles of health management ended on 14 December after about 5 months with 14 online learners.*

## Meetings in Wuxi, China

**A**QD Chief Dr. JD Toledo was in China for two meetings. First at the Freshwater Fisheries Research Center (FFRC) of the Chinese Academy of Fishery Sciences in Wuxi on 29 October to discuss recent developments in aquaculture research which directly affects, and may apply to, farmers; possible fields of research and training activities between the two institutions; and strategies to ensure the efficient exchange of trainees and research staff.



Then at the 9th NACA (Network of Aquaculture Centre in Asia-Pacific) technical advisory committee meeting or TAC9, also in Wuxi, from 30 October to 1 November. TAC9 was hosted by the Freshwater Fisheries Institute, NACA's Regional Lead Center in China. The objective of the meeting was to formulate the Work Plan for regional aquaculture development for the period January 2009 - December 2011.

- K CAUMBAN



The NACA meeting (left); Dr. Toledo with Prof. Xu Pao of FFRC

## Davao Oriental's mariculture park launched

The Pujada Bay Mariculture Park in the City of Mati, Davao Oriental in southeastern Philippines was launched 16 October with AQD Chief Dr. JD Toledo, Technology Verification Division Head Dr. Clarissa Marte and Igang Marine Station Head Mr. Albert Gaitan attending. More on the agreement signed by AQD there next issue.

## Filariasis seminar and treatment



### DOH filariasis lecture.

AQD thru the Human Resource Management Section (HRMS) invited a team from the Municipal Health Office of Tigbauan to lecture on the lymphatic filariasis disease. The lecturers discussed the origin, acquisition, symptoms, and treatment of the disease. Myths and misconceptions were also discussed.

The team was headed by municipal health officer Dr. Josefa Monserate, Dr. Jeffrey Rivas, and Ms. Milagros Torrato. HRMS later scheduled the administration and distribution of medication by the Medical Unit and AQD's medical retainer to interested employees.



**DOH filariasis staff** at Tigbauan Main Station's clinic with AQD's medical doctor and employees who availed of medications. *Standing, L-R:* AQD nurse Dofra Tupas, medical doctor Eileen Tupas, dentist Therese Hilomen, Salve Gotera, Virgie Nemiz, and Nestor Bayona. *Seated:* DOH staff Ninfa Torreto and a patient being interviewed.

- BY HRMS



# RURAL AQUACULTURE

## AQD is first in the SEAFDEC- wide training of trainers



The trainers are warmly welcomed to AQD by Chief Dr. JD Toledo, Deputy Chief Dr. H Ogata and TID Head Mr. RF Agbayani (first row). They listened to lectures first before heading out to meet two communities of aquaculture stakeholders



AQD is the first among the SEAFDEC departments to conduct the *Training of trainers*, a series of 10-day courses that is being funded by the Japan-ASEAN Solidarity Fund of the ASEAN Foundation. The training series is under the project *Human resource development (HRD) on poverty alleviation and food security by fisheries intervention in the ASEAN region* that is implemented by SEAFDEC as a center-wide project.

As Chief Dr. JD Toledo explained, AQD is responsible for the HRD thematic area on rural aquaculture while other SEAFDEC departments will train trainers on local/indigenous institution & co-management and responsible fishing technology (TD), backyard fishery post-harvest technology (MFRD), and inland fisheries development (MFRDMD).

Further, the Chief noted that AQD is offering all of its packaged technologies which are products of 35 years of research work. These technologies, along with AQD's extension strategies, were presented by 20 AQD senior staff.

Eight participants from SEAFDEC member-countries started the AQD course on 10 November and finished on the 19th. They were joined by an invited participant from AQD's ICDSA-Northern Samar

project and three students from Maejo University (Chiangmai, Thailand) who are undergoing their OJT at Tigbauan Main Station.

After the course, the next task of the eight participants, now fully considered trainers, is on-site training on their choice of technology for the fisherfolk community they have chosen in their home countries.

Class chair Ms. Hasnisa bt. Hj Abdul Hamid of Malaysia was all praises ("More than I expected!") for the resource persons and the training staff, though not for the schedule which most of her classmates consider as "tight". The participants worked through the weekend, conducting participatory rural appraisal of a land-locked but water-rich Dumarao and the coastal Igang community.

The technology selected by the trainers of Thailand, Vietnam, Lao PDR and Indonesia to be "echoed" is freshwater aquaculture. Myanmar chose to focus on mudcrab (see related story next page); and Malaysia on shrimp (*Penaeus monodon*) and ornamental fish.

The Philippines and Cambodia are preferring combinations of freshwater and marine fish cage farming.



At Dumarao and Igang to undergo participatory rural appraisal and to try their hands at netcage making



Trainees enjoy Filipino food and stress-relieving dance after their presentations



At Igang, practically the whole community came to the discussion of their needs



## On-site at Myanmar

# AQD conducts training on mudcrab farming

AQD scientists Dr. Emilia Quintio and Dr. Fe Estepa travelled to Yangon to conduct a training on *Mudcrab farming* and visit potential site for crab farming from 7 to 11 October at the behest of the GOJ-Trust Fund.

On their first day, the scientists paid a courtesy call on Director General Mr. Khin Maung Aye and Deputy Director-General Mr. Khin Ko Lay of the Department of Fisheries at the Myanmar Federation of Fisheries. The Director expressed his government's gratitude to the Government of Japan and SEAFDEC for the training course, the first lecture series on mud crab culture to be held in Myanmar.

Recognizing the accomplishments of SEAFDEC in the field of mud crab larval rearing, the Myanmar officials indicated

their plan to establish a crab hatchery in their country with the assistance of GOJ and SEAFDEC. They requested another trip for AQD to conduct site selection for the hatchery and hands-on training.

The AQD scientists also met the chairs of the Crab Entrepreneurs Association (Mr. U Knin Oo) and of the Fish Information Services Co. (Mr. Hla Win) and spent the next two days (8-9 Oct) training 64 participants who represented the private and government sectors. Mr. Hla Win translated some of the vital points in the lectures to Burmese.

The AQD scientists gave an overview of mudcrab industry, and lectured on identification & biology, broodstock management & larval rearing, natural food production, pond preparation, nursery rearing, and grow-out.

- FROM THE TRAVEL REPORT OF  
ET QUINTIO AND FD ESTEPA



[FAR LEFT] Participants of the training course with the AQD resource speakers and officers of the Department of Fisheries and Myanmar Fisheries Federation

[LEFT] Dr ET Quintio making her farewell speech

[BELOW] A soft-shell crab (*Scylla olivacea*) farm in Yangon

The group visiting the farm

## SIDE trip

### Visit to a soft-shell crab farm in Kyauk Tan Tsp

Wedged in the schedule of the two AQD scientists was a visit to a soft-shell farm in Kyauk Tan Tsp, Yangon. Dr. ET Quintio and Dr. FD Estepa gave these details:

The farm is located in an area which was formerly a shrimp culture zone, but has now been converted to crab culture area. It employs about 480 people who do various tasks such as: (a) stocking 80-100g crablets in plastic containers; (b) setting containers in rafts; (c) monitoring for molted crabs; (d) feeding with fish; (e) transferring newly molted crabs to freshwater to prevent hardening of exoskeleton; and (f) transferring crabs to the "factory" where these are subjected to contact freezing.

The whole farm consists of 10 ponds, each having an area of about one hectare. Each pond is stocked with 100,000 crabs of *Scylla olivacea* and about one million can be stocked at one time in the whole facility. Monitoring for molting crab is done every hour.

The soft shelled crabs are sold to local restaurants, but most are exported to Australia, Korea and Japan. The major problem facing the soft-shell farming in Myanmar is the declining crab population in the wild.

PHOTOS COURTESY OF ETQ / FDE





## **On-site in Mis Occ** **Trainees harvest grouper from cages**

A ceremonial harvest of 80 kg of grouper was made by the trainees of AQD's season-long course on grouper cage culture in Misamis Occidental. The trainees showcased their fish for investors of the Mis Occ Aquamarine Park (MOAP, Sinacaban) who visited Governor Leo Ocampos on November 26.

The fish sold averaged 520 g each.

The groupers (3,120 pieces) were first stocked in marine cages on May 16, initially weighing 25 g or measuring 4 inches in total length on average. After about six months, survival is estimated at 90%. Buyers are now awaited for the rest of the stock.

The Mis Occ project is a component of AQD's nation-wide *Institutional capacity development for sustainable aquaculture* project, and funded by PACAP-ACIAR and MOAVEC.



## **A special trainee on bacteria and three OJTs on infotech**

A French national underwent a *Special training on methods of bacterial isolation and identification* from 24 to 27 November at AQD's Tigbauan Main Station. He is Mr. Eric Vigne, the Chief Operating Officer of Genomar Supreme Philippines based in Pampanga.

Meanwhile, three students from the West Visayas State University are having their *On-the-job training on information technology* at the Development Communication Section and Library & DataBanking Services Section. The 400-hour training (3 Nov 08 'til 30 Jan 09) is a requirement for their degree BS Information Technology. They are Shella Grace Tanque, April Rose Ordoyo and Gibby Tropico.



Mr. Eric Vigne at AQD's Integrated Broodstock & Hatchery Complex with AQD's Ms. Bernadette Eullaran. Below are the WVSU students





# Sojourn in Singapore

## 31st PCM where AQD work is reviewed...



To ensure the effectiveness of program planning and implementation and facilitate review of these, SEAFDEC held its *31st Program Committee (PCM)* and *11th Fisheries Consultative Group (FCG) Meetings* on 3-7 November 2008 in Singapore.

These meetings, hosted by the SEAFDEC Marine Fisheries Research Department (MFRD), were attended by over 60 participants, representing the ASEAN and SEAFDEC member countries (Brunei Darussalam, Indonesia, Japan, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam), FAO, ASEAN Secretariat, Swedish International Development Cooperation Agency (Sida) and senior officials of the Secretariat and SEAFDEC Departments.

AQD was represented by the Chief, Dr. JD Toledo; Deputy Chief, Dr. H. Ogata; RD Head, Dr. EDJ Ayson; TVDD Head, Dr. CL Marte; TID Head, RF Agbayani; and the Special Departmental Coordinator for AQD, Ms. B Acosta.

AQD's senior management presented the progress of AQD programs in 2008 and plans for 2009. As a result, the participants acknowledged the significant work and achievements of AQD and other Departments and endorsed the program plans for 2009.

Recognizing the immense benefits that the poor sector of society could get from rural aquaculture, the PCM recommended that AQD continue giving priority to dissemination and transfer of viable technologies in the rural communities of less developed countries such as Cambodia, Myanmar, Lao PDR and Vietnam.

The meeting also suggested that AQD convenes, in the near future, a regional consultation on aquaculture to hasten the

dissemination of information from its activities and identify future directions in line with the needs of member countries and partners in the region.

The meetings also discussed the development of a revised SEAFDEC program framework to facilitate the scrutiny of SEAFDEC programs, clarify the linkages and raise the profile of SEAFDEC at the regional and international level.

Other issues discussed that have relevance to AQD's work programs include the implementation of ASEAN roadmap for *Integration of the fisheries sector*, climate change and its impact on fisheries and aquaculture, the implementation of the *Code of conduct for responsible fisheries in Southeast Asia*, the outcomes of the *1st Regional advisory committee meeting on fisheries management* and the *Technical guidelines on aquaculture certification*.

The meetings also noted the need for a follow-up activity to review the progress made by SEAFDEC since the millennium conference in 2001 (ie. *ASEAN-SEAFDEC conference on sustainable fisheries for food security in the new millennium*) and define future directions. In view of this, SEAFDEC presented its plans to convene a regional forum that will bring together important stakeholders in 2010 or 2011 in Thailand. The forum tentatively called 'SEAFDEC Special Event' is expected to include also a special session on aquaculture.

In summary, the various presentations and discussions that took place during the back-to-back meetings showed how SEAFDEC activities have progressed. At the same time, the challenges ahead as indicated in the proposed and pipeline programs for 2009 and beyond were recognized. - By **BELEN ACOSTA**

## ... 9th ISEP...

Information officers of the SEAFDEC Secretariat and Departments gathered in Singapore just before PCM (30 October to 1 November) to discuss the progress of SEAFDEC's strategies to enhance public visibility and information dissemination.

The 9th Meeting of the information staff exchange program (ISEP) was held at SEAFDEC's Marine Fisheries Research Department. Development Communication Section Head Ms. Milagros Castanos and Senior Information Assistant Luisa Pacino represented AQD.

Among others, the 9th ISEP suggested updates to SEAFDEC's information strategies formulated in 2005, clarified definition and coverage of information / success indicators, and made tentative plans for a survey on the extent

of stakeholders' awareness of SEAFDEC programs.

After the reporting and discussions, the ISEP group visited Nanyang Technological University to meet up with the Director-General of the Asian Media Information and Communication Centre. Dr. Indrajit Banerjee gave practical advice on launching a media campaign, saying that SEAFDEC must first document in one reference all its accomplishments then work with media professionals to package these information for public consumption.

The group went next to one of the library complexes of the National Library Board of Singapore, and was impressed by its full automation and book drop off points. The library collects all books published in, about, or by Southeast Asia; and has spaces for cultural mini-exhibits (on the old writings of Singapore at the time of the visit) as well.

## ... and a forum on governance

Experts and stakeholders gathered in Singapore from 3-5 November to give different perspectives on governing international waters that are not within national territories. This represents an area of 64% of the world's oceans.

AQD scientist Dr. Ma. Rowena Eguia was one of the invited experts, presenting a paper on the *Perspectives on the role of developing states in the sustainable use and management of marine genetic resources in global oceans*. Genetic resources is considered the "common heritage of mankind.

In her presentation, Dr. Eguia emphasized the fact that even as a developing state with meager resources to conduct research, the Philippines has an important role in conducting relevant research in marine bioprospecting for drug development as she especially pointed out the efforts of renowned Filipino

biochemist Dr. Baldomero Olivera who developed the first patented marine drug, an anti-pain one known as Ziconitide.

She also discussed the roles of SEAFDEC and AQD as a moving force in the sustainable use of marine fishery genetic resources in SE Asia by promoting responsible fisheries through the implementation of the *Regional code of conduct for responsible fisheries*.

Dr. Eguia's earlier paper on *Bioprospecting and management of Philippine marine genetic resources: issues and challenges* read by a member of the Philippine Mission at the *8th Meeting of the United Nations Open-Ended Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS)* in June 2007 in New York created a stir as it tackled the sensitive issue on biopiracy in the Philippines. This led to her invite to the forum.

The *Workshop on governance of marine areas beyond national jurisdiction: management issues and policy options* was organized by the Global Forum on Oceans, Coasts, and Islands; the National Parks Board, Singapore; and the University of Delaware Gerard J. Mangone Center for Marine Policy, with funding support from the Nippon Foundation-Japan, and the Global Environment Facility.

- FROM THE TRAVEL REPORT OF MR EGUIA

*Dr. MR Eguia participates in the discussions, BELOW, later meeting friends after the workshop: [RIGHT] Mr. Leonard Co from UP-Institute of Biology, former UP Diliman Prof. Dr. Benny Tan (now working at the Singapore Botanic Garden herbarium) and University of Delaware's Dr. Miriam Balgos (also a Filipina and formerly with WFC and PCARRD)*





# Guangzhou happening

PHOTOS and STORY  
by CL PITOGO



Dr. Cheng and Mr. Leung giving Ms. Pitogo copies of their manuals and book for the AQD Library



The *Global technical and trade conference on shrimp* was held on November 6-8 in Guangzhou (formerly Canton), PR China and was organized by FAO, the FishInfoNetwork, the Ministry of Agriculture - PR China and other government & private entities in China.

There were 250 participants from 22 countries, though most were Chinese. The Philippines was well-represented in the conference by Mr. Wilfredo Yap who was invited to talk about the status of shrimp culture in the Philippines, and by eight participants [Pastor Torres Jr, Celia Pitogo of AQD, Minvilu Casido, Susan Landoy, Kaylin Corre (also of AQD), Valeriano Corre, Christopher Co and Mrs. Co].

## Field trip: Guangzhou live fish market

Located along the scenic Pearl River, the market's main business is wholesale live aquatic products like fish, shrimps, crabs, mollusks, etc., and it is the largest in China with an annual traded volume of 190,000 tons. The products come from various parts of China and from 20 countries around the world. A scale model of the new fish market is shown at left (topmost photo). During the official briefing we were informed that everyday, around 200 tons of live fish from this market are delivered to HongKong, Macau and several cities in China.

Half of this complex is already in use and when the project will be completed, it will have two 15-storey towers to hold trading offices and 5 storeys of market area covering 5 hectares. The new Huangsha Aquatic Products Market area will have a total constructed area of 18 ha – a humungous structure!

The field visit also took us to various farms and a tilapia hatchery in Guangdong Province, but the most interesting farm we visited was not for shrimp, but for freshwater prawn, *Macrobrachium*.

The group with Dr. WW Cheng (in black coat and white shirt), Aaron Leung (in white shirt) and eLearners from HongKong



Because autumn has set in and evening temperature has started to drop (around 20 degrees C), the farm constructed a roof (made of plastic and looking like a “bubble”) over a 4-hectare area of freshwater prawn ponds for over-wintering (next two photos after the scale model). There was also “bull-culling” at the time of visit (4th photo at left) wherein male freshwater prawns are selected for on-growing to large sizes (above 80 g) in separate ponds with females, which are grown to relatively smaller sizes and harvested just before spawning (30-40 g).

## Face-to-face with AQD's eLearners, training alumni in HongKong

Our flawless trip to Guangzhou via HongKong was largely due to the advice given by a fish health training alumnus, Mr. Aaron Leung who was in AQD for 6 weeks in 1994. Working with HongKong SAR's Agriculture, Fisheries and Conservation Department, he is the point man in HongKong's fish health activities. Aaron met us at the Hongdum train station on our way back to HongKong. He was with his boss Dr. WW Cheng, Thomas Ng (AquaHealth alumnus 2004), Karen Fong and Leo Shum (currently enrolled in AquaHealth online). During lunch, Dr. Cheng explained to us their fish health activities, also saying how very thankful he is to SEAFDEC for having trained a significant number (a total of seven staff including four now actively participating) of their staff mainly through AquaHealth Online (AHOL).

SEAFDEC training alumni (left to right) with Celia Pitogo (center): Thomas Ng (AHOL 2004), Aaron Leung (Fish Health Management 1994), Karen Fong and Leo Shum (AHOL 2008)



# CHED, NRCP call on AQD expertise

 On November 6, AQD attended the last *Public hearing on the proposed policies and standards for Master of Science in Fisheries (MS Fi)* at the invitation of the Philippine Commission on Higher Education (CHED). The hearing was held in Quezon City with AQD represented by scientist Dr. Ma. Lourdes Aralar of the Binangonan Freshwater Station (BFS).



[FIRST ROW, L-R]  
Dr. RO Juliano,  
Dr. EEC Flores,  
and Dr. Tereso Abella  
(chair of CHED'S  
fisheries committee)  
who presented the  
proposed policies and  
standards to universities  
offering MS Fisheries  
[BOTTOM]  
Senator Angara with  
AQD's Dr. ML Aralar

The hearing was attended by deans and other representatives of fisheries schools in the country and organized by CHED's Technical Committee on Fisheries. Two committee members are AQD former Chiefs ~ Dr. Rogelio Juliano and Dr. Efren Ed. Flores.

It seems CHED will impose stricter policies for schools that are offering or planning to offer MS Fi. Graduates must be competent in research: from conceptualization to implementation of project proposals and publication of results in peer-reviewed scientific journals. Acknowledgment from the journal editor of manuscript submission is sufficient for graduation. In addition, graduates are also expected to be competent in technology verification. Deans, school chairs and a minimum six full-time faculty must have doctorate or master's degrees, publications in refereed journals, and a license to practice the profession of Fisheries Technologist.

## Consultative forum on basic research agenda

AQD was again invited to the *Consultative forum for national integrated basic research agenda (NIBRA)* organized by the National Research Council of the Philippines (NRCP) that was held 7 November in Pasay City. Attending for AQD were Dr. ML Aralar and Dr. Ma. Rowena Eguia, also of BFS.

NIBRA aims to cover immediate (2010), medium (2015) and long (2020) term periods; minimize duplication and maximize research; and involve all stakeholders with interest in the basic R&D in the country.

The forum invited Senator Edgardo Angara who encouraged NRCP members not to "waste too much time basic research" and go instead into applications. Because of limited resources, the focus, he said, must be on research that will immediately pay off and benefit the Filipinos.



Senator Angara specified four areas of research priority: biotechnology, information & communications technology, neurotechnology and nanotechnology. He also emphasized the importance of research on climate change and renewable sources of energy.

The AQD representatives joined the discussion in NRCP's Cluster IV (biological sciences / agriculture & forestry) as four parallel working sessions were conducted to review R&D resolutions.

Under Cluster IV, these were the identified priorities to be later presented to the Philippine President: (1) impact assessment of the introduction of exotic species in aquatic environment; (2) algae, in particular the biology, prevention and control of harmful algal blooms, biofuels and natural products from algae; (3) sustainable and environment friendly aquaculture, in particular, the biology and culture of indigenous species and environment friendly feeds and feeding management; (4) ornamental fish culture; (5) disease prevention, diagnosis; (6) fisheries management, ie. stock assessment, fishing technology, and studies on spawning grounds for sustainable management; and (7) post-harvest, ie. value addition and reduction of post harvest losses.



# Seminars

## @ AQD this November & December

### 06 November

#### Sediment quality in AQD's Igang Marine Station

By AQD's Sheila Mae Santander and Schedar Rose Novilla

Sedimentation rate, nutrient concentration, H<sub>2</sub>S presence, redox potential, dissolved oxygen, and faunal presence were considered in comparing the sediments in cage and no-cage areas in AQD's Igang Marine Station. The results show that fish cage areas generally has deep H<sub>2</sub>S presence, black sediments, lower DO at the sediment-water interface; and fauna is absent which is due to high nutrient deposition. In addition, fish farmer-friendly monitoring techniques and equipment (ie. fabricated water sampler, core sampler, and Ekman grab) are in various stages of development.

#### Biochemical characterization of bacteria isolated from the digestive tract of milkfish *Chanos chanos* and its use in the improvement of the nutritive value of ingredients for milkfish feed

By AQD's Dr. Relicardo Coloso and Francis Legario

Due to the high cost of aquaculture feeds nowadays, potential aquatic feeds such as *Leucaena* leaf meal, cassava leaf meal, cowpea meal, mung bean meal, and other agricultural by-products are being considered. Bacteria (*Bacillus cereus* and *Lactobacillus* sp.) isolated from the gut of milkfish reared in natural food were characterized for their ability to ferment specific substrates and activities of extracellular enzymes. The future plan is to inoculate the alternative feed sources with milkfish intestinal bacteria to increase feed efficiency.

#### Identification of *Lactobacillus* sp. isolated from the digestive tract of milkfish *Chanos chanos* Forsskal using 16S rRNA gene sequencing

By AQD's Relicardo Coloso and Francis Legario

The objective of the study was to identify *Lactobacillus* sp. isolated from the gut of milkfish fed with natural food using traditional methods (morphological and biochemical tests) and 16S rRNA gene sequencing. The result shows that the isolate is unidentifiable using the traditional methods and 16S rRNA gene sequencing needs to be carried out.

### 2 December

#### Research at the National Institute of Fisheries (NIF), Ecuador

By Mr. John Gumbs, NIF General Director

Ecuador's NIF [Instituto Nacional de Pesca, www.inp.gov.ec] is a 40-person organization tasked with R&D for fisheries and aquaculture, and, since 2007, is the country's competent authority on sanitary control of fish exported or sold in local markets. NIF deals with multi-stakeholder groups, from fishing vessels to artisanal fishers and fish exporters. The NIF commodities and areas of concern include small and large pelagic fishes, sharks, shrimps, mangroves (shells and crabs), and research cruises (*El Nino* studies). NIF recommends limits to fishing gears and areas, catch sizes and quota, level of fishing effort, and other sustainable practices. Ecuador's national plan for food safety, food hygiene and residue control is based on European Union legislation for aquaculture and fish products. [See also page 4, this issue.]

### 20 November

#### Production of soft-shell crab at Yangon

By AQD's Fe Estepa

[See page 7 of this issue]

#### Activities in Sagay Marine Reserve (SMR), Philippines

By AQD's Nerissa Salayo

The project activities of AQD in SMR in 2008 mainly focused on the delivery of information, education and communication (IEC) activities to support the stock enhancement of abalone and giant clams. Overall, the activities indicated the importance of information dissemination to various stakeholders prior to resource enhancement activities because stocked resources cannot be "separated" from the fisheries which is generally considered "common property".

### 27 November

#### Parasite fauna of bivalves and gastropods in the Philippines

By AQD's Gregoria Pagador

With the scarcity of published reports on parasitic diseases of marine bivalves and gastropods, a study was conducted at AQD aiming to screen these commercially-important commodities for their associated parasite fauna. Results show that the parasites present in slipper shaped oyster are cestodes, ciliates, and protozoan; in window-pane oyster, there are cestodes, ciliates, and trematodes; and in abalone, *Pseudoklossia*, ciliates, and an unidentified protozoa.

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### 3 December

#### Production of *Kappaphycus* from spores

By AQD's Ma. Rovilla Luhan

In response to the industry's problem of deteriorating seed stock quality, AQD began growing the spores of *Kappaphycus* in the laboratory to possibly replace seedling being farmed at present. The method is multi-step method, starting with inducing the seaweed to generate spores to growing the germlings for 15 months. The life cycle of *Kappaphycus* was thus observed in the laboratory, and three stages were noted: carposporophyte (spore-bearing), tetrasporophyte (matured from spores) and gametophyte (currently nursed to maturity or to become carposporophytes).

#### Immune responses of Asian sea bass *Lates calcarifer* (Bloch) against inactivated betanodavirus vaccine

By AQD's Rolando Pakingking Jr

Asian sea bass exhibit strong immune responses against a single injection of the formalin-inactivated red-spotted grouper nervous necrosis virus (RGNNV), a betanodavirus originally isolated in Japan. Sea bass produce neutralizing antibodies at high titer levels from days 10 (mean titer 1:480) to 116 (1:1280), with the highest titer at day 60 post-vaccination (1:4480). When fish were challenged with the homologous RGNNV at day 54 post-vaccination, there were no mortalities in both the vaccinated and unvaccinated control fish. However, a quick clearance of the virus was observed in the brains and kidneys of the vaccinated fish, and followed by a significant increase in neutralizing-antibody titers. Furthermore, the vaccine-induced antibodies potently neutralized the Philippine betanodavirus isolates (RGNNV) in a cross-neutralization assay. The present results indicate the potentiality of the formalin-inactivated RGNNV vaccine against viral nervous necrosis (VNN) of seabass.

# haw-as

A HARVEST FESTIVAL

Do history & culture and aquaculture go together? From October 28-31 they sure did, as the municipality of Dumangas, Iloilo celebrated its *Cultural and historical week*. AQD's Dumangas Brackishwater Station (DBS) took part in the celebration as one of the major sponsors.

The four-day activity kicked off with a parade and a re-enactment of the liberation of Dumangas by the Dumangas National High School, in commemoration of its 110<sup>th</sup> anniversary. The youth had the spotlight the next day with the *Araw ng mga kabataan*, which featured activities such as *alay lakad*, games and the

signing of a covenant of support against drug abuse. A job fair, bloodletting, *laro ng lahi*, the first day of the seafood & *bangrus* extravaganza, and a musical variety show were the highlights of the third day. The 138<sup>th</sup> birth anniversary of local hero Quintin Salas, the *haw-as* festival cultural presentation, day two of the seafood & *bangrus* extravaganza, and a concert capped off the very busy week.

Staff from DBS actively took part in the affair. The proof? Here are some pictures of DBS employees in historical/cultural mode.

- By the DUMANGAS BRACKISHWATER STATION



## Weekend combat

TIRUHAY SA CIUDAD

A daring band of AQD employees proved that they have what it takes to go to war.

They called themselves the *Vengeful assassins* and they spent their Saturday, November 29, at the UPV Iloilo City campus taking part in a fierce exchange of colorful pellets that was a paintball tournament.

The paintball tournament, dubbed as *Tiruhay sa ciudad*, is a yearly event organized by the UPV Vanguard Inc that aims to strengthen camaraderie and sportsmanship. The activity also aims to develop the appreciation of sports enthusiasts in paintball.

*Vengeful assassins* emerged fourth out of six teams. Not bad for first-timers since they played against last year's defending champions and a group of ROTC officers. Next year perhaps?

- RD DIANALA

