

# SEAFDEC AQUACULTURE DEPARTMENT (AQD) Matters

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

## Aquaculture Workshop in Butuan City, Caraga Region

SEAFDEC/AQD had successfully conducted the Aquaculture Workshop: Technology Updates and Producers' Clinic in Butuan City last September 8-9, 2014. This is a USDA-funded Philippine Cold Chain Project by Winrock International, an international non-government organization that implements developmental projects worldwide.

A total of 210 eager participants attended the workshop which was more than the number expected by the joint organizers composed of Winrock International, SEAFDEC Aquaculture Department, United States Department of Agriculture, the Philippine Department of Agriculture, the Department of Trade and Industry Region 13, the Bureau of Fisheries and Aquatic Resources, and Northern Mindanao School of Fisheries. More than 60% of the participants came from the sector of the producers, 20% from government offices and agencies while seven percent came from the academe.



PHOTOS BY JME ALMENDRAS



(Clockwise) **Break-out Sessions.** Stream 1: Mud Crab, Blue Crab and Shrimps headed by Drs. Emilia Quinitio and Fe Dolores Estepa; Stream 2: Marine Fish facilitated by Dr. Evelyn Grace de Jesus Ayson, Mr. Eliseo Coniza and Ms. Jocelyn Ladja; Stream 3: Freshwater Species discussed by Dr. Frolan Aya; Stream 4: Seaweeds and Abalone moderated by Ms. Ma. Rovilla Luhan and Ms. Milagros de la Pena

(Top, left to right) The first morning lecture was on Mud Crab Aquaculture given by AQD's Dr. Emilia T. Quinitio. Her talk was followed by a lecture on Fresh Water Aquaculture presented by Dr. Frolan Aya. The third lecture was on Nursery Culture of Marine Fish in Ponds delivered by Ms. Jocelyn Ladja. The afternoon session started with the lecture on Grow-out of Marine Fish in Ponds and Cages by AQD's Mr. Eliseo Coniza and Dr. Evelyn Grace de Jesus-Ayson. Their talk was followed by a lecture on Seaweed Culture by Ms. Ma. Rovilla Luhan, then by a lecture on Abalone Farming by Ms. Milagros de la Pena. The second day of the workshop was the Aquaculture Clinic, moderated by Dr. Fe Dolores Estepa. The Panel of Experts was composed of AQD's Dr. Mae Catacutan on Nutrition, Feeds and Feeding Technologies; Dr. Rolando Pakingking Jr on Fish Health Management and Diseases; Dr. Ma. Junemie Hazel Ramos on Resource Management, Enhancement and Environmental Monitoring and Dr. Nerissa D. Salayo on The Economics of Aquaculture and Social Issues

## SEAFDEC/AQD joins scientific convention on microbiology

SEAFDEC/AQD took part in the 2014 Philippine Society for Microbiology Incorporated (PSM) Visayas Regional Chapter annual meeting and regional scientific convention from 16 to 17 October at Iloilo City.

Scientists, researchers and members of the academe gathered in this annual event. This year's scientific meeting served as a venue for local researchers to present their



PSM Visayas Regional Chapter officers (2013-2014) during the convention

results. PSM invited these local researchers to do a series of plenary lectures in relation to the theme "local and global trends in emerging and re-emerging infectious diseases". It also became an avenue for budding microbiologists, both professionals and students, to develop their presentation skills by participating in an oral and poster session competition.

Four of the PSM Visayas Regional Chapter officers are from AQD, namely, senior technical assistants Mr. Demy Catedral (corresponding secretary) & Mr. Joseph Faisan Jr. (business manager) and scientists Dr. Rolando Pakingking Jr. (aquatic microbiology division representative) & Dr. Edgar Amar (environmental

microbiology division representative).

PSM is an organization that aims to promote scientific knowledge in the field of Microbiology and other related fields. The organization conducts various activities such as workshops, publications, hosts a bi-annual symposia and an annual conference.

PHOTO BY AD BILBAO

## PTAC meets in Makati City



(Right to left) A/QD Chief Dr. Felix Ayson, BFAR Assistant Director for Technical Service Mrs. Drusila Esther Bayate, Dean of UPV College of Fisheries and Ocean Sciences Dr. Crispino Saclauso, and A/QD Deputy Chief Dr. Takuro Shibuno during the PTAC meeting

The Management Committee of SEAFDEC/AQD and senior representatives of the relevant Philippine Government institutions (Department of Agriculture and its attached agencies, Bureau of Fisheries and Aquatic Resources and Bureau of Agricultural Research; Department of Foreign Affairs; and University of the Philippines in the Visayas) gathered on 16 October in Makati City for the 24th Meeting of the Philippine Technical Administrative Committee (PTAC). PTAC comprises the high level representatives of relevant Philippine Government agencies and is tasked to

provide close coordination between the host government and SEAFDEC with regard to the operations of AQD.

The meeting was convened to review the accomplishments of AQD in 2014 (R&D Programs, and Administration and Finance) and plans for 2015, for endorsement to the SEAFDEC Program Committee and the Philippine Government, and to discuss the pressing issues that concern the operations of AQD. This year's PTAC meeting was chaired by SEAFDEC Alternate Council Director for Philippines and BFAR Assistant Director for Technical Services, Mrs. Drusila Esther Bayate.

PTAC noted the significant

progress on AQD's R&D programs in 2014 and endorsed its 2015 planned activities, including the proposed budget for 2016. The Committee also gave the following recommendations on R&D activities which include: (i) giving preference to the use of feed conversion efficiency which shows calculations on the usage of fish from the wild being converted into fish meal/fish oil; (ii) assessing the impacts of aquaculture activities in actual commercial aquaculture farms; (iii) coming up with a mechanism that will assess the impacts or the success of the technological interventions used by AQD to address the issue on poverty alleviation; (iv) applying a monitoring system in AQD's training and ABOT programs to assess the effectiveness in terms of transfer of knowledge and skills to targeted clientele. With regard to the proposed budget in 2016, PTAC noted the suggestions given to SEAFDEC/AQD and to BFAR, as SEAFDEC's focal agency in order to make a strong case or justifications for the requested budget increase.

— B Acosta

## NFRDI taps SEAFDEC/AQD experts as resource persons on technical writing course

PHOTO COURTESY OF NFRDI



(Top) The participants with the resource persons. (L-R) SEAFDEC/AQD resource persons Dr. Maria Rowena, Dr. Fe Dolores Estepa, and Dr. Nerissa Salayo during their lectures. Library OIC Mr. Stephen Alayon orients the participants on scientific literature and patent searches

Four SEAFDEC/AQD senior staff were among the resource persons during the National Fisheries Research and Development Institute's (NFRDI) training on *Research methodology and technical writing*. NFRDI organized this course to enhance the skills of its researchers in the preparation and analysis of technical papers or reports.

SEAFDEC/AQD scientist Dr. Ma. Rowena Eguia

talked about the research and development process, writing of research proposals, and technical writing for publication in peer-reviewed international scientific journals. There were also lectures on research designs for social science and biological science discussed by AQD associate scientist Dr. Nerissa Salayo and scientist Dr. Fe Dolores Estepa, respectively. SEAFDEC/AQD Library officer-in-charge Mr. Stephen

Alayon also taught the participants how to search for scientific literatures and patents relevant to their research.

In addition to the lectures, the participants also had exercises in writing research proposals and technical writing which were then critiqued by the resource persons.

The training was held at La Breza Hotel, Quezon City, Philippines from 8 to 12 September.

# SEAFDEC/AQD hosts 15th ISP meeting

PHOTOS ON THIS PAGE BY IT TENDENCIA



ISP 2014 participants coming from various SEAFDEC departments

**S**EAFDEC information staff and officials from Thailand, Malaysia, Indonesia and the Philippines reviewed the information-related activities of SEAFDEC especially on raising SEAFDEC's image and visibility at international, regional and national levels. The Fifteenth SEAFDEC Information Staff Program (ISP) meeting was convened on 28-30 October 2014 at Makati City, Philippines.

Most of the information performance metrics, such as number of publications, number of visitors to the stations, to the websites, to exhibition booths and media exposure have markedly increased over the past year. But despite these positive indicators, Dr. Chumnarn Pongsri, SEAFDEC Secretary

General, observed that "considering the high number of reports on SEAFDEC events, research staff of SEAFDEC should come up with research findings that could be transformed into information packages for dissemination to end users."

On the strategy of improving information sharing within SEAFDEC and with other institutions, the meeting suggested that SEAFDEC could consider promoting the Knowledge Management scheme implemented by the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA). A collaboration with SEARCA could be raised by the Secretariat during the next SEAFDEC Program Committee Meeting. This collaboration will

focus on public education in conservation and sustainable use of fishery resources in the ASEAN region.

The SEAFDEC/AQD information staff and library personnel briefed the other Departments of SEAFDEC on how to set up and maintain a database system. Information officers of the SEAFDEC Departments were keenly interested on SEAFDEC/AQD's database the Executive Information Support Group (EISG) and on the highly successful SEAFDEC/AQD Institutional Repository (SAIR).

The next ISP meeting will be held in Malaysia hosted by the Marine Fishery Resources Development and Management Department of SEAFDEC.

## Possible collaboration between SEARCA and SEAFDEC eyed



Dr. Chumnarn Pongsri, SEAFDEC Secretary-General (center), and Dr. Hajime Kawamura, Deputy Secretary-General (left), listen as Dr. Maria Celeste Cadiz shares on SEARCA's 10th FYP and KM program

**M**AKATI, Philippines – The Secretary-General of the Southeast Asian Fisheries Development Center (SEAFDEC) has expressed an interest to partner with the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) toward food and nutrition security and rural poverty alleviation in the region.

Dr. Chumnarn Pongsri, SEAFDEC Secretary-General and concurrently Chief of its Training Department, expressed this interest during the 15th Meeting of his Center's Information Staff on 28-30 October at the Best Western Plus Antel Hotel, Makati City, Manila, Philippines. He noted SEARCA and SEAFDEC's aligned mandates during a presentation made by SEARCA's Dr. Maria Celeste

H. Cadiz, Program Head, Knowledge Management (KM) Department, about SEARCA's KM Program on 29 October 2014.

Dr. Pongsri elaborated that his center could provide the fisheries component in the overall inclusive and sustainable agricultural and rural development (ISARD) thrust of SEARCA in its Tenth Five-Year Plan (FYP). Dr. Cadiz acknowledged the importance of the fisheries sector in ISARD as they are among the poorest sectors of the rural population.

During her presentation, Dr. Cadiz gave an overview of SEARCA and the three arms of its KM strategy that promotes a culture of adaptive and social learning, knowledge sharing and use, and knowledge creation toward ISARD.

— MC Cadiz

## SEAFDEC/AQD goes to ASFA 2014



Mr. Superio (front; second from right) ASFA participants visit the Great Wall of China

PHOTO COURTESY OF DL SUPERIO

SEAFDEC/AQD, represented by senior information assistant Mr. Daryl Superio, attended the 43rd ASFA (Aquatic Sciences and Fisheries Abstracts) advisory board meeting held at the National Marine Data and Information Service in Beijing, China from 13 to 17 October.

Mr. Superio presented SEAFDEC/AQD's ASFA Trust Fund Proposal entitled Digitization, Open Access Deposition and the Provision of URL's to Existing ASFA Records of SEAFDEC/AQD Publications (SEAFDEC

Asian Aquaculture, Aqua Farm News and SEAFDEC Quarterly Research Report). The proposal was approved by the Advisory Board and the project is expected to start late this year or early next year.

As the Chairman for the IAMSLIC (International Association of Aquatic and Marine Science Libraries and Information Centers) Resource Sharing Committee, Mr. Superio also presented a tutorial for "Z39.50 Distributed Library or Z Catalog" that ASFA had been enthusiastically promoting.

With the aim of being a comprehensive database in the field of aquatic sciences, matters on the status of ASFA partnership; the quality, development and improvement of ASFA database; and the expansion of ASFA's subject scope were discussed.

ASFA is an international cooperative information system which comprises an abstracting and indexing service covering the world's literature on the science, technology, management, conservation and other aspects of fisheries and aquatic resources. It has 31 board members and partners from Argentina, Chile, China, Ecuador, France, Germany, India, Indonesia, Iran, Japan, Kenya, Mexico, Mozambique, Norway, Peru, Philippines, Poland, Russia, Senegal, Tunisia, Uganda, Ukraine, UK, Vietnam, FAO, Intergovernmental Oceanographic Commission (IOC), SEAFDEC and from Publishing Partner ProQuest.

## Training courses

**On seed production, disease detection and feed formulation**



(Left) The catfish trainees weigh a female catfish for the computation of hormone dosage. Trainee Mr. Abdulmohsen Ibrahim Alasous collects blood and other organs from a pompano. Trainees during feed formulation and feed milling practicals



PHOTOS BY RF BOMBEO, CV GENZOLA & DEVCOM SECTION

SEAFDEC/AQD conducted three courses on catfish seed production (19-22 August), disease detection in marine fish & crustaceans (1-9 September) and feed formulation & feed evaluation for aquaculture species (1-5 September) at Tigbauan Main Station, Iloilo.

Nine trainees from the private sector attended the special training course for catfish seed production. A series of lectures and practical exercises were done to enhance the trainees skills and knowledge in various techniques for seed production like broodstock selection, hormone preparation & injection and egg incubation.

The course for disease detection in marine fish

and crustaceans was by one government-funded intern from Saudi Arabia. This course was designed to provide the knowledge on the methods of detection of occurrence and surveillance of spread of diseases as well as skills in the prevention, treatment and control. The exercises spanned from the detection of major viral & bacterial diseases to histological techniques.

Due to the insufficient number of adequately trained researchers in aquaculture nutrition, the need of upgrading the researchers' technical skills in this area is vital. Hence, the DOST's Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-

PCAARRD) partnered with AQD to conduct a course on "feed formulation and feed evaluation for aquaculture species". The training provides the participants (25 researchers from 10 colleges and universities) with the knowledge on nutrient requirements, feed preparation & other practical tools in feed evaluation. Also included in the course are lectures on feeding management and economics. A roster of top-caliber resource persons coming from AQD, University of the Philippines-Visayas and DOST-PCAARRD handled the lectures and practical exercises of this five-day course.

## On marine fish, shrimp and seaweeds

PHOTO BY R LACIERDA



Trainees at a grouper cage farm in Capiz

**T**hree special courses on marine fish nursery and grow-out culture, shrimp nursery and grow-out culture & seaweed farming were simultaneously conducted from 1 to 12 September attended by trainees from Oman (13) & private participants from Malaysia (1) and the USA (1).

The training was requested by the Ministry of Agriculture

and Fisheries of the Sultanate of Oman to update their technical staff with new operation and management protocols in the production of the aforementioned commodities. Lectures and practical activities were conducted at AQD stations in Tigbauan, Igang and Dumangas.

The trainees were taken to a shrimp farm (Negros Occidental), a grouper cage farm (Capiz) and seaweed net cages (Guimaras) were organized to give them the opportunity to interact with private aquaculture practitioners and expose them to the daily practices done at fish farms.

## On giant freshwater prawn

PHOTOS BY MHS STINSON



(Left) Trainees listen as Mark Neil Samoranos demonstrated the preparation of the artificial half-strength seawater required for larval rearing of giant freshwater prawn larvae. Trainees during feed preparation for *ulang*

**T**he SEAFDEC Aquaculture Department conducted its 3rd session of the Special Training Course on Freshwater Prawn (*Ulang*) Hatchery and Grow-out Operations from September 8-10, 2014 at the Binangonan Freshwater Station, Binangonan, Rizal. A total of eight participants attended the said training, with six local participants and two from Brunei Darussalam.

The 5-day training course included both lectures and practicals wherein the participants were taught the biology and reproduction of giant freshwater prawn; natural food production; larval management; feed preparation

and feeding; health and disease management; nursery and grow-out culture in tanks, ponds and cages; rice-prawn integrated farming; design of tanks, cages and ponds and fabrication of fish farm implements; as well as the economics and feasibility of freshwater prawn aquaculture.

During the closing ceremony, the trainees were very thankful to the resource persons for generously imparting their knowledge and expertise on the culture of this high value species. They were also grateful to the BFS staff for the kind assistance extended to them while at SEAFDEC/AQD. The training also gave the

trainees the opportunity to build friendships among themselves and for networking as well. Trainees from Brunei Darussalam, who admitted it is their first time to travel to the Philippines, are looking forward to attend another fruitful training course at SEAFDEC/AQD. A local trainee, however, felt that he needs to learn more about the culture of “*ulang*” and intends to come back for internship training. The tour around fish cages and pens of milkfish and other freshwater fish species in Laguna de Bay and visit to some historical places in Manila such as Fort Santiago capped the 5-day training courses. — **F Aya**

## On mud crab culture in Zamboanga

“This course is a great learning opportunity for me,” said one of the trainees from the private sector. The training had

around 60 participants from Zamboanga State College of Marine Sciences & Technology (ZSCMT), the private sector and the local government

unit of Zamboanga City, Philippines. They completed the “Mud crab Hatchery and Nursery” training on 24 September held at ZSCMT.

The three-day course had lectures and practical sessions on mud crab biology, broodstock management & larval rearing, nursery rearing and natural food production. The resource persons for mud crab culture were AQD scientists Dr. Emilia Quintio and Dr. Fe Dolores Estepa and researcher Ms. Milagros dela Peña for the natural food production. In addition, the Industry Strategic S&T Plans (ISPs) manager of the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) Dr. Adelaida Calpe presented the ISP for mud crabs.

This course was organized by AQD in collaboration with ZSCMT with funding support from PCAARRD.



PHOTOS BY CV GENZOLA



(Left) Ms. Milagros dela Peña teaches the trainees how to culture natural food. Dr. Fe Dolores Estepa shows the participants how to identify the different mud crab species

## On catfish breeding and culture

PHOTOS BY MHS STINSON



(Left) AQD's Information Specialist Ms Ruby F. Bomboe dissects one of the male catfishes and shows the trainees the different organs particularly the testes. Trainees weigh the feed ingredients to prepare a moist diet for catfish broodstock at the feed laboratory of SEAFDEC/AQD's BFS

SEAFDEC/AQD's Freshwater Station in Binangonan, Rizal held the Special Training Course on Catfish Hatchery and Grow-out Operations on October 13-17, 2014. It was attended by eight participants from Brunei Darussalam, Sudan and the Philippines. The trainees came from various disciplines such as medicine, engineering, education, and fisheries and aquaculture.

The 5-day training course, which is offered once a year, provided the participants with technical knowledge

and skills on the biology, hatchery, nursery and grow-out culture of catfishes. The specific topics taught during the training include the breeding, hatchery and nursery techniques, site selection and water quality management, natural food production, design and fabrication of net cages, nutrition and feeding of catfish, innovative techniques for improved survival of catfishes in grow-out and aquaculture economics. Each lecture topic was followed by a practical session.

After the awarding of

certificates, the trainees said they were thankful to SEAFDEC/AQD's resource persons for the technical information on catfish culture. Most of them, especially the catfish growers, admitted they are happy and ready to produce their own seeds after learning the hatchery techniques at AQD. Hatchery production of catfish fry will help catfish growers sustain their operations.

Foreign participants visited some historical places in Manila which capped the 5-day training. — F Aya

## On sandfish seed production, nursery and management

PHOTO COURTESY OF JP ALTAMIRANO



Trainees with AQD associate scientist Dr. Jon Altamirano uring their practicals on sea ranching site assessment at AQD's Igang Marine Station

**S**even participants from Singapore (2), India (2), United States of America (1), and the Philippines (2) completed AQD's 15 day training on Sandfish seed production, nursery and management on 21 October at AQD's Tigbauan Main Station in Iloilo.

Among the topics covered were biology and ecology of sea cucumbers; spawning induction & egg collection;

larval rearing, phytoplankton culture; nursery system & grow-out culture; water quality monitoring; sandfish sea ranching as a sustainable livelihood option and impact of climate change on aquaculture production.

The trainees were also given practical sessions on broodstock selection; setting-up of tanks; identification and preparation of larval food; larval rearing; identification

of larval stages; broodstock transport; stocking of broodstock in sea pens and sea ranch site assessment.

In behalf of the participants, Dr. Ambithamaru Laxminarayana from India thanked the AQD experts for giving them useful information about the theory and practice of sandfish aquaculture. He also said that this training is a rewarding experience to all of them.

## On mud crab II



PHOTOS BY CV GENZOLA



(Left) A practical session on the identification and anatomy of mud crab with SEAFDEC/AQD scientist Dr. Fe Dolores Estepa. Training participants stock crab instar in nursery ponds at SEAFDEC/AQD's Dumangas Brackishwater Station in Iloilo

**T**he second session of SEAFDEC/AQD's training course on "Mud Crab Hatchery, Nursery and Grow-out Operations" had 13 graduates from Malaysia (2), Singapore (1), and the Philippines (10). The training was held at SEAFDEC/AQD's Tigbauan Main Station, Philippines and ran for 23 days which concluded on 29 October.

A trainee shared during the Closing ceremony that at first, he was reluctant to train at SEAFDEC/AQD but after meeting the mud crab and natural food experts (resource persons of the course) of the institution, he realized the he came to the right place. He was appreciative of the knowledge shared to them by the SEAFDEC/AQD experts and at the same time happy to

have gained a "new family" during his stay.

The course had lectures and practical sessions on biology & identification of mud crabs, nursery management, aquasilviculture, crab fattening, soft-shell crab farming, hatchery construction, disease & health management, economic evaluation of hatchery & nursery, and culture of microalgae among others.

## Research seminars



**D**r. Carlo Lazado discussed the results of his doctorate thesis "Molecular basis of daily rhythmicity in fast skeletal muscle of Atlantic cod (*Gadus morhua*)" at SEAFDEC/AQD's in-house research seminar on 24 October.

Circadian or biological clocks are time-keeping systems that enable organisms to adjust behavior and physiology to the daily light-dark cycles. In vertebrates, these circadian clocks are located in central (e.g. pineal gland) and peripheral structures (e.g. muscle). According to Dr. Lazado, there has been an increasing interest in studying peripheral clocks since they can have direct control over biochemical and physiological processes in their respective tissues.

In his thesis, he found out that the Atlantic cod has multiple copies of clock genes wherein eight displayed daily rhythmicity in the fast skeletal muscle. He also found out that the molecular clock

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in skeletal muscle was not autonomous, in relation to the central clock, as reflected in the cell and tissue culture models. Dr. Lazado explained to SEAFDEC/AQD research staff that the daily light-dark cycle had a remarkable influence on the transcriptome (set of all RNA molecules produced in one or a population of cells) of the skeletal muscle. He also observed that genes that displayed daily rhythmicity are involved in muscle growth & development, metabolism, protein processing and structural integrity.

Therefore, this study paved the way to better understand the importance of peripheral clocks especially in the physiology of skeletal muscle in teleosts (ray-finned fishes).

Dr. Lazado finished both his doctorate degree in aquatic biosciences and master's degree in aquaculture at the University of Nordland (UiN), Norway.



**A**QD technical assistants Ms. Joana Joy de la Cruz-Huervana and Mr. Michael Ray Burlas shared the results of their master's degree theses, "Induction of molting in hatchery-reared mud crab *Scylla serrata* juveniles" and "Evaluation of commercial shrimp larval diet as replacement of live feeds in mud crab larval rearing," to AQD research staff on 4 September, respectively.

Ms. de la Cruz-Huervana studied the effects of temperature and autotomy or removal of chelipeds on the growth, survival and molting of mud crab juveniles. She exposed hatchery produced mud crab with internal carapace width of 2-3 cm and body weight of 1.7-2.2 g to various temperatures (ambient, 29, 32 and 35°C) during the intermolt stage. Based on the results, it is suggested that the optimum temperature level for rearing mud crab juveniles is at 29°C. There were three treatments for the experiment on autotomy: (1) the control where the chelipeds are intact, (2) one cheliped was autotomized and (3) two chelipeds were autotomized. The results showed that autotomy of one cheliped promoted molting without adversely affecting the growth and survival of mud crab juveniles.

Mr. Burlas on the other hand evaluated four commercial shrimp larval diet as a replacement to the natural food used in mud crab larval rearing. He tested the effects on growth and survival of these commercial shrimp larval diets on the growth and survival of various larval stages of mud crab compared to feeding with natural food. It was found out that artificial diet can be given beginning Zoea 2 since growth and survival at this stage is comparable in groups fed the artificial diets and those fed with natural food. Moreover, he also tested various natural food-artificial diet ratios to determine how much of the natural food can be replaced with artificial diet. The results showed that 25-50% of the natural food can be replaced with commercial larval shrimp diets.

Both presenters were recent graduates of MS Fisheries (Aquaculture) at the University of the Philippines Visayas.

## AQD Matters



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## AQD staff learns about organization policy

**T**o enhance the AQD staff's awareness and understanding of department operations and policies an Organization and Policy Orientation was organized on 16 September at the Tigbauan Main Station. The activity covered topics on the rules on personnel conduct /discipline, statutory benefits & incentives, policy on attendance and processing of requests for financial support under the staff development program. The employees were also briefed about the office procedures and flow of documents and transactions in the Material and Control Unit, the Accounting Section, the Budget and Cashiering Section as well as in Internal Audit. "I hope that after this activity all of us will be familiar



PHOTOS BY IT TENDENCIA



(Top) The management committee with (above) AQD staff during the general assembly meeting

with the proper procedures and processes on various transactions and operations of the department," said Ms. Kaylin Corre, officer-in-charge of Administration and Finance division during her welcome remarks.

Moreover, in a related activity, AQD Chief Dr. Felix Ayson presented with the staff the 2012-2013 financial status of the department during the general assembly held on 19 September. He also mentioned some major projects that

will help improve the overall efficiency of operations of AQD such as improvement of seawater supply system, rehabilitation of internet network system, etc. He assured everyone that the management will continue to be transparent in managing the department's finances. He concluded the meeting by requesting the cooperation of everyone to put AQD on top. "We should work together happily to achieve all our goals," said Dr. Ayson.