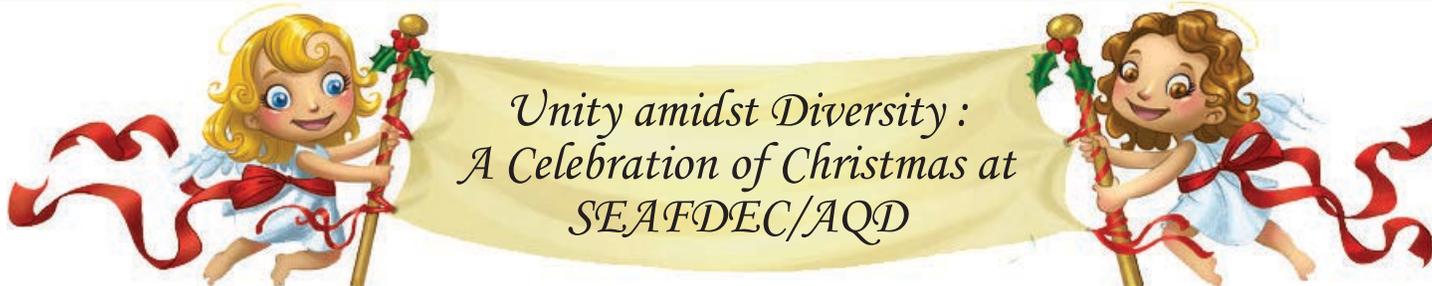




AQD Matters

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



Christmas is a time for joy since we celebrate the coming of our Lord, Jesus Christ. Aside from the birth of Jesus Christ, we certainly have plenty of reasons to be happy and thankful this Christmas season. We are thankful for being healthy, for being with our families, loved ones and friends. We may want to have some of the material things that we aspire, but having peace of mind, a clear conscience and a loving heart are what matters more in today's ever increasingly chaotic world. Let us remain focused on our purpose in life.

Merry Christmas and a fruitful 2015 for all of us in AQD!

Felix Ayson, D.Sc.
Chief
SEAFDEC/AQD



Christmas is a beautiful time of the year and one of its essences is to strengthen the family bonds. I am very happy to celebrate Christmas with the AQD family and I hope that all of us will unite to strengthen this bond. Let every challenge continue to improve in order for us to establish good relationship and strong partnership not only in AQD but also among SEAFDEC member countries. Let AQD be our home too and in order for it to be true, there has to be love, warmth, and fulfillment.

Lastly, let us be generous enough to share our blessings and take part in touching someone's heart with love and happiness.

Wishing everybody good times, good friends, and good cheers this Christmas and every day of the New Year.

Takuro Shibuno, Ph.D.
Deputy Chief and
GOJ Trust Fund Co-Manager



Last year, just a few weeks before Christmas, we were hit by a category 5 storm. That calamity dampened our spirits to celebrate Christmas joyfully. Instead, we joined hands in helping the victims of the typhoon and celebrated Christmas with our homeless brothers and sisters. This year, just 2 weeks before Christmas, we were again threatened by another strong typhoon. The threat has brought us together to prepare for the worst and also to fervently pray for the best. Our prayers were answered! Panay was spared from the wrath of typhoon Ruby. This alone is a good reason to celebrate and be thankful.

Although this might not be a good year for some of us, maybe even the worst for others, the birthday of our Saviour who was sent to save us all from our sins is worth celebrating. Because of His great love, God sent His only Son for our redemption. This season, let us build more bridges through this love and destroy more walls with forgiving hearts. May this love also bring us hope for a better year ahead. Wishing you and your families a very merry Christmas and a more prosperous 2015! God bless us all!

Ma. Junemie Hazel Lebata-Ramos, Ph.D.
Head
Research Division



Wishing you all the joys and wonders of Christmas. May the festive season fill your life with bright and precious moments and bring you lots of sweet and pleasant surprises. Merry Christmas!!!

Mae Catacutan, Ph.D.
Head
Technology Verification and
Demonstration Division



It's party time once again. In our celebrations, let us keep in our minds and feel in our hearts the real reason for the season. Let us give thanks for all the graces we have been blessed with; let us be especially thankful for being spared the wrath of the recent typhoon.

A joyous Christmas and a prosperous 2015 to all!

Evelyn Grace De Jesus-Ayson, D.Sc.
Head
Training and Information Division



As we again celebrate the birth of Jesus Christ, let's not forget to praise His goodness, His grace and His greatness. As His good followers, let's focus our eyes in doing what is right, look straight ahead to what is good, and keep our feet on the ground no matter how high we become. After all, it's not about the material things we gained but the legacy in life behind those people we touched.

Merry Christmas and a Blessed New Year to everyone!

Kaylin Corre, M.Sc.
OIC
Administration and Finance Division

Christmas Celebration @ AQD

Opening Salvo (15 DECEMBER)

PHOTOS THIS PAGE BY GK FAIGANI



AQD's Christmas celebration began with the parade of lanterns of six teams namely the **Blue Bells** (Administration & Finance Division, Security Guards and Agency personnel), **Green Hollies** (Technology Verification & Demonstration Division), **Jolly Purple Elves** (Training & Information Division and Management Group), **Orange Angels** (Nutrition & Feed Development and Socioeconomic Sections), **Red-nosed Reindeer** (Breeding & Seed Production and LFAAT), and **Yellow Guiding Star** (Farming Systems & Ecology Section, Fish Health Section and Office of the Research Division Head).

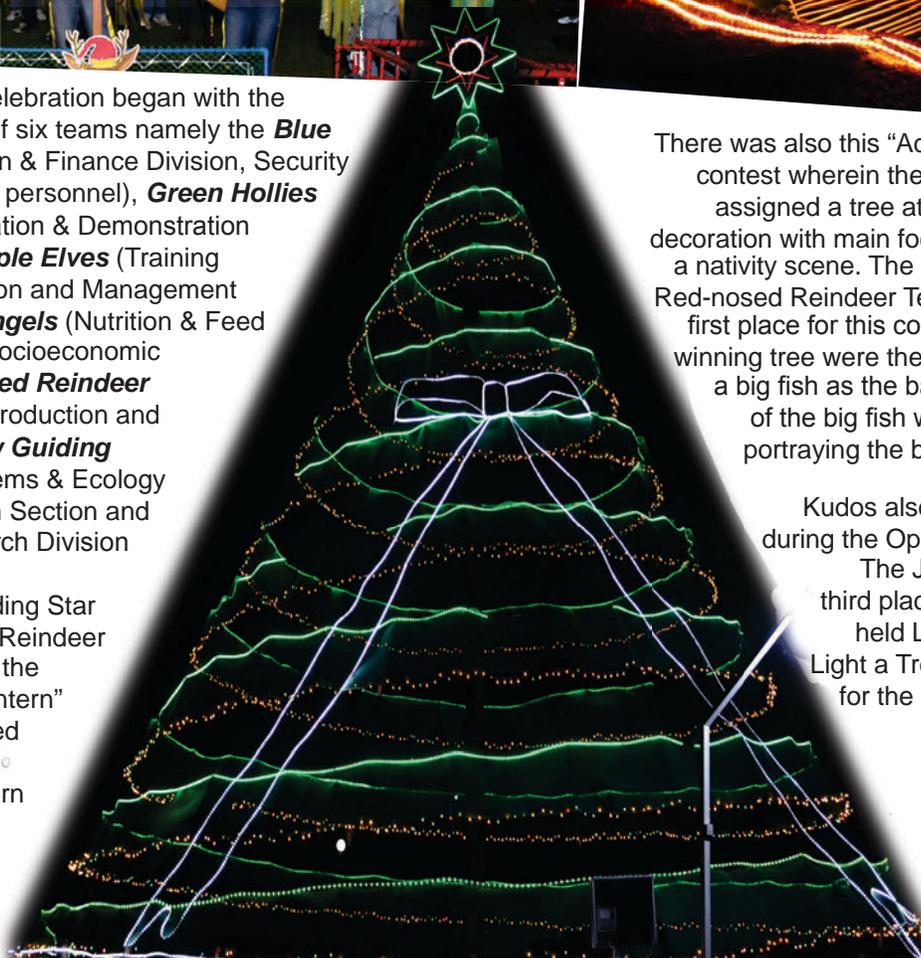
The Yellow Guiding Star and the Red-nosed Reindeer teams (top) bagged the "Best Hand-held Lantern" prize. The Red-nosed Reindeer team also won the "Best Lantern Parade Group." The lighting of the giant Christmas tree (right) completed the joyous event.

There was also this "Adopt and Light a Tree" contest wherein the six teams were each assigned a tree at the AQD grounds for decoration with main focus on the creation of a nativity scene. The creative design of the Red-nosed Reindeer Team won for them the first place for this contest. Hanging on the winning tree were the group's lanterns with a big fish as the base. Inside the mouth of the big fish was the nativity scene portraying the birth of Jesus Christ in the manger (inset).

Kudos also to the other winners during the Opening Salvo contests!

The Jolly Purple Elves got third place for the "Best Hand-held Lantern" & "Adopt and Light a Tree" and second place for the "Best Lantern Parade Group."

The Blue Bells was the third best group during the lantern parade and the Orange Angels won second place for beautifying their "adopted" tree.



A Star for an Apple (16 DECEMBER)

PHOTOS THIS PAGE BY RHILEDSMA



AQD employees shared their blessings through the fund raising activity "A Star for an Apple" organized by the Christmas Committee. The proceeds were used to buy apples & sweet treats and were given to about 300 pupils of Buyu-an Elementary School.



Thanksgiving Mass & Christmas Program (17 DECEMBER)



A perfect way to begin the Christmas Celebration. AQD employees attend the thanksgiving mass at the Administration and Finance Division lobby





A fun performance without forgetting the real essence of Christmas. The Training & Information Division and Management Group brought home the bacon for the Christmas presentation contest



Research assistant Mr. Jonas Mediavilla received a token and a cash prize for winning the slogan contest given by Deputy Chief Dr. Takuro Shibuno (left) and AQD Chief Dr. Felix Ayson (right)



Fashion of the 70's models. Atty. Gina Gomez and Mr. Isidro Tendencia were chosen as the best dressed employees of the night



The luckiest of all AQD employees! Laboratory technician Mr. Jefferson Jumento won the grand prize, a "kitchen showcase," during the raffle draw



Dynamic duo. The hosts of the Christmas Program Ms. Jacqueline Tanaleon and Mr. Jon Irish Aquino

Christmas Shindig @ BFS (15 DECEMBER)

PHOTOS BY MLCARALAR / MHS STINSON



“KALOKA-LIKE Contest: BFS EDITION.” Dr. Ma. Lourdes Aralar as *Audrey Hep-Hep! Burn* (left) won first place, Ms. Vivian Jatulan as *Neknek Monaj* (right) got second place and on third place was Engr. Emiliano Aralar as *Richard Grr*



“Adopt a Family.” AQD employees of the Binangonan Freshwater Station had a gift-giving activity for selected families of Brgy. Pipindan, Binangonan, Rizal together with the government officials of the barangay.



IMS turns 40! (19 DECEMBER)

Improving Mariculture for Sustainable future was the theme of the 40th anniversary celebration and Christmas Party of AQD’s Igang Marine Station (IMS).

During the celebration, former IMS employees namely Aureo Gaitan, Salvador Tan and Larry Gapuy (below, L-R) received certificates of recognition for being the pioneer employees of the station.



PHOTOS BY IT TENDENCIA



One of the highlights of the celebration was the blessing of the station’s new souvenir shop and snack bar (above).

Some AQD employees who attended IMS’ anniversary celebration

Two AQD scientists receive EO Tan award

PHOTO COURTESY OF DOST-PCAARRD



EO Tan awardee Dr. Edgar Amar (2nd from left) with co-author Mr. Joseph Faisan Jr flanked by DOST Secretary Mario Montejo and PCAARRD Executive Director Dr. Patricio Faylon

S EAFDEC/AQD scientist Dr. Edgar Amar bagged this year's prestigious Dr. Elvira O. Tan Memorial Award for his paper "Induction of Immunity and Resistance to White Spot Syndrome Virus (WSSV) in Shrimp *Penaeus monodon* (Fabricius) by Synthetic Oligodeoxynucleotide and Bacterial DNA." His paper, which he co-authored with Mr. Joseph Faisan Jr., won the first place under the category Best Published Paper in Aquaculture and Inland Fisheries.

Their study investigated the effect of oligodeoxynucleotides or ODN's in strengthening the immunity of black tiger shrimp as a preventive strategy against white spot syndrome virus (WSSV) infection. Oligodeoxynucleotides are short single-stranded synthetic DNA molecules that represent a new set of compounds that heighten the activity of the defense mechanisms of the immune system. The

study also tested the ability of whole bacterial genomic DNA from *Vibrio harveyi* to elicit a stimulatory response in the shrimp in view of the possible use of bacteria as ODN source instead of the commercially available but more expensive synthetic ODNs. The results of the present study show increases in all the immune activities in the shrimp after injection of commercial ODNs or bacterial genomic DNA. The injected shrimps also had significantly lower mortalities after being challenged with a WSSV infection. Thus, strengthening shrimp immunity by the use of immunostimulatory nucleotides and bacterial genomic DNA could be a feasible preventive approach in the management of WSSV infections in shrimp. Funds for this study were provided by SEAFDEC/AQD and the Regional Fish Disease Project of the Government of Japan Trust Fund.

Under the same category, another SEAFDEC/AQD scientist, Dr Myrna Bautista-



PHOTO COURTESY OF MB TERUEL

Dr. Myrna Bautista-Teruel receiving the award from Dr. Danilo Cardenas, Deputy Executive Director for Administration and Resource Management of PCAARRD, during the National Symposium on Agriculture, Aquatic Resources Research and Development (NSAARRD) and Dr. Elvira O. Tan Memorial Awards for Outstanding Fisheries Publication

Teruel was awarded the second place for her paper "Evaluation of Agar-Bound Microparticulate Diet as Alternative Food in Abalone Hatchery: Effects of Agar Concentrations and Feeding Frequencies." She shared this award with her co-authors, Ms. Milagros de la Peña and Ms. Analyn Asutilla.

Their study tested the performance of an agar-bound microparticulate diet (A-MPD) as feed for postlarval abalone *Haliotis asinina*, focusing on the effects of agar concentrations and feeding frequencies. Larval abalone were fed 1,200 mg A-MPD bound with either 5.0 mg/mL agar solution, 7.5 mg/mL agar solution, 10.0 mg/mL agar solution, and 12.5 mg/mL agar solution, or a natural diet consisting of diatoms at different feeding frequencies: daily, every other day, or every 2 days, starting at day 5. Their results show that postlarval settlement and survival were not significantly different in diets bound with

higher agar concentrations when tested in the 3 feeding frequencies. At lower levels of agar incorporation in diets, however, settlement and survival counts became significantly higher on daily feeding. Postlarval settlement and survival were significantly highest with abalone fed a diet bound with 7.5 mg/mL agar solution on a daily feeding frequency. Stability tests and analyses of the feed were also done and the average percent weight loss in the feed was higher with lower levels of agar incorporation. Average particle size of both A-MPD and diatoms was 4-5 microns. Crude protein content of A-MPD was 42.7%; that of diatoms was 14.9%. The present study shows that A-MPD may be used as alternative food in abalone hatcheries with the incorporation of 7.5 mg/mL agar solution fed daily to abalone. Funds for this study were provided by SEAFDEC/AQD



SEAFDEC/AQD holds aquafeed meeting in Myanmar

The efficient use of aquaculture feeds and continued research for developing suitable alternative protein sources to reduce dependence on fish meal and other fish-based products were adopted by the ASEAN member states in June 2011 as part of their Plan of Action on Sustainable Fisheries for Food Security until 2020. To follow-up on this priority issue of the ASEAN on aquaculture, the Southeast Asian Fisheries Development Center (Aquaculture Department & Secretariat) and the Government of Myanmar partnered in convening a Regional Technical Consultation on *Development and Use of Alternative Dietary Ingredients or Fish Meal Substitutes in Aquaculture Feed Formulation*. Through funds provided by the Government of Japan and ASEAN Foundation, SEAFDEC and the Government of Myanmar hosted the meeting that brought together representatives from SEAFDEC Member Countries, technical experts on aquaculture feed and officers from ASEAN Foundation, SEAFDEC and FAO Regional Office in Asia & Pacific



AQD Chief Dr. Felix Ayson (left) presents to participants the objectives, expected outputs and mechanics of the meeting



PHOTOS BY JM DE PILI



Speakers from AQD - Drs. Mae Catacutan (rightmost), Myrna Teruel (middle), and Relicardo Coloso (2nd from left) respond to questions of participants during the open forum/discussions together with two other speakers; Mr. M. Weimin of FAO-RAP and Dr. M. Boonyaratpalin, Advisor, Department of Fisheries, Thailand

(FAO-RAP) to Nay Pyi Taw, Myanmar on 9-11 December. Over 50 participants, including representatives from the private sector (feed companies) attended.

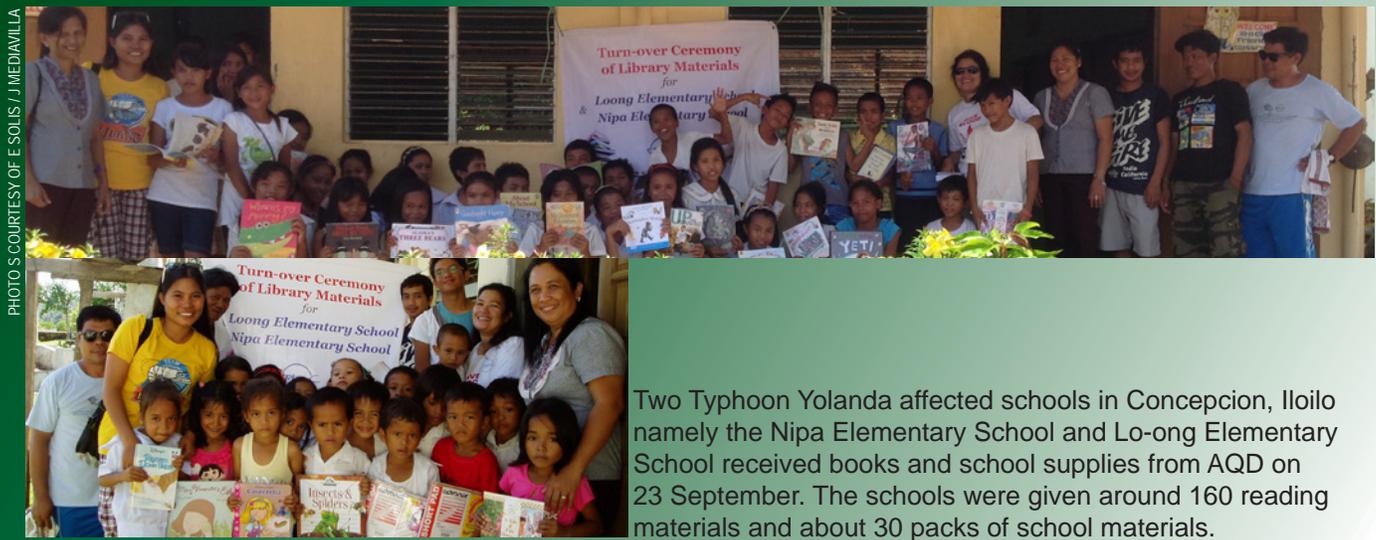
The participants reviewed the status of developing alternative dietary ingredients for aquaculture feeds in the Member Countries. Country representatives gave updates on utilization of fish by-catch, fish meal and plant protein sources in commercial aquafeed production as well as feeding practices to improve feed efficiency. Constraints and recommendations on the use of fish meal and plant protein sources in aquaculture feed

were later discussed. Invited speakers, of which are the aquaculture feed and nutrition experts from SEAFDEC/AQD, presented the technological developments on the use of plants and other alternative feed ingredients as protein sources in aquaculture feeds and the existing regional policies and initiatives that limit the use of feed ingredients of marine origin.

The highlight of the meeting was a workshop session where participants, in working groups, identified the key issues in the thematic areas, the research gaps and the recommendations for the three trophic groupings, categorized

according to their feeding habits - herbivores, carnivores and omnivores. The session culminated with a plenary presentation on the regional policy recommendations and immediate actions needed for the development and use of alternative dietary ingredients in aquaculture feed formulation. The meeting ended with a renewed commitment of the ASEAN member states, regional organizations and other partners in the region to enhance collaborative efforts and strengthen partnerships in reducing dependence of aquaculture on feed ingredients of animal origin.

AQD donates books and school supplies in Concepcion



PHOTOS COURTESY OF E SOLIS / J MEDAVILLA

Two Typhoon Yolanda affected schools in Concepcion, Iloilo namely the Nipa Elementary School and Lo-ong Elementary School received books and school supplies from AQD on 23 September. The schools were given around 160 reading materials and about 30 packs of school materials.

AQD for lake conference in Perugia

S EAFDEC/AQD was represented by scientist Dr. Maria Lourdes Aralar during the 15th World Lake Conference (WLC) with the theme “Lakes: Mirrors of the Earth (Balancing Ecosystem Integrity and Human Well-being) held at the University of Perugia in Italy from 31 August to 7 September.

The conference kicked off with a plenary lecture given by UNESCO-IHE and Governor of World Council, Dr. Andras Szollosi-Nagy entitled “Water: The Key to Sustainable Development-The Challenge of the Century”? His paper discussed how water-related challenges have been tackled globally. University of Genova’s Prof. Giovanni Seminara also gave

a keynote lecture. There were parallel lectures on various themes such as water quality & pollution control, chemical & physical processes, harmful algal blooms and lake basin management. Dr. Aralar presented her paper on “Fish biodiversity and incidence of invasive fish species in an aquaculture and non-aquaculture sites in Laguna de Bay, Philippines” which was included in a parallel session on lake ecosystem & biodiversity assessment and conservation.

The participants also went on a technical tour to Lake Trasimeno, the fourth largest lake (in terms of surface area) in Italy. There’s a freshwater fish breeding center that breeds trouts, carps and other species.



Dr. Aralar during her presentation in one of the parallel sessions



Dr. Aralar (left) with participants from Colombia, Mexico, Brazil, Malaysia and Indonesia

WLC is a biennial international conference organized by the International Lake Environment Committee

based in Japan. This year’s conference was co-organized by the Umbria Scientific Meeting Association.

Five finish AQD’s aquatic microbiology course

Four veterinarians and one laboratory analyst from the Bureau of Fisheries and Aquatic Resources (BFAR) completed the special training on Aquatic Microbiology in SEAFDEC/AQD’s Tigbauan Main Station from 11 to 17 November 2014.

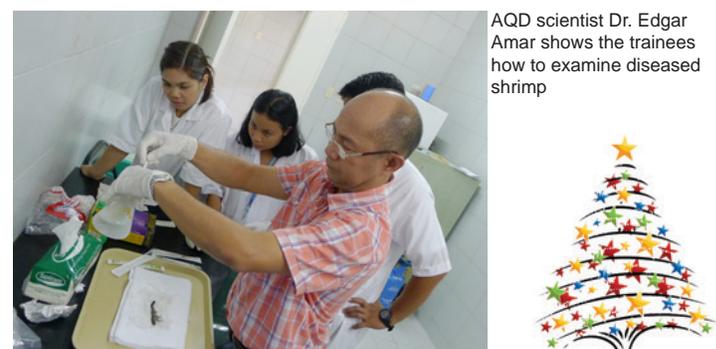
The five-day course consists of lectures and practical sessions on topics related to testing the pathogenicity of bacterial isolates on fish & crustaceans, characterization and identification of bacteria isolated from diseased fish using conventional methods and a commercial kit, testing

the sensitivity of different bacterial pathogens to various drugs, and proper disposal of biohazard specimens and disinfection of experimental facilities. They also visited the Negros Prawn Cooperative Laboratory and other private prawn farms in Negros Occidental.

At the closing ceremony, Dr. Jefferson Soriano from BFAR Regional Office 2 thanked all their AQD mentors for the knowledge that were imparted to them with hopes that they will be able to apply these learnings when they go back to their respective work place.



AQD scientist Dr. Rolando Pakingking Jr. with the trainees during their laboratory practicals



AQD scientist Dr. Edgar Amar shows the trainees how to examine diseased shrimp



CBFWA training ends, graduates 18

The 8th session of the *International Training Course on Community-based Freshwater Aquaculture for Rural Areas of Southeast Asia* with funding support from the Government of Japan - Trust Fund was held at the Binagonan Freshwater Station from 25 November to 4 December 2014. The course had 18 participants from Brazil (1), Brunei Darussalam (4), Cambodia (1), Indonesia (7), Lao PDR (1), Malaysia (1), Myanmar (1), and the Philippines (2). Six participants from SEAFDEC Member Countries received Government of Japan-Training Fellowship Grants while two participants from Brunei Darussalam and Indonesia were on a cost-sharing scheme. This scheme is offered by SEAFDEC/AQD to SEAFDEC Member Countries wherein the training fee is waived and the participants or their governments pay for their plane tickets and accommodation.

The 10-day course consisted of lecture sessions, practical activities, and field trips.

The lectures included an overview of freshwater aquaculture in Southeast Asia, broodstock management, hatchery and grow-out of commercially important freshwater species like tilapia, bighead carp, catfish, and giant freshwater prawn.

There were also special lectures on other relevant topics such as aquatic ecology, design & construction of ponds, pens & cages, diseases of freshwater fishes, natural food production, feed formulation & preparation, food safety in aquaculture, genetics for the sustainable management of farmed tilapia, organizing communities for rural aquaculture, preparatory notes for rapid appraisal, policies & governance in rural aquaculture, and business planning & management for sustainable small-scale freshwater farm.

Practical activities included sex determination of tilapia, preparation of feed with incorporated male hormone Methyltestosterone for tilapia sex reversal; catfish and carp broodstock selection, hormone



Induced spawning and stripping of bighead carp

preparation and injection for induced spawning, stripping of the eggs, fertilization and incubation. Feed preparation, demo on disease diagnosis, and rapid rural appraisal were also part of the practical activities.

The trainees also had a two-day field trip to the Freshwater Aquaculture Center, College of Fisheries, Central Luzon State University and the Bureau of Fisheries – National Freshwater Fisheries Technology Center in Munoz, Nueva Ecija and a private catfish farm in Sto. Rosario, Pandi, Bulacan.

During the training's closing ceremony, Mr. Doanire Kasto Muning from Malaysia, Class Chairman, expressed

on behalf of the group, his heartfelt thanks to all the AQD staff for a successful training despite some unexpected problems. He is hoping that they will share everything they have learned when they go back to their countries, and is looking forward to attend other training courses of AQD in the near future. As tokens of appreciation to SEAFDEC/AQD, BFS Officer-in-Charge Dr. Frolan Aya received tourism information materials and the seal of Ministry of Marine Affairs and Fisheries from participants of Brunei Darussalam and Indonesia, respectively.

- R Lacierda / R Bomboe / R Pagador / F Aya / MHS Stinson

International Seaweed Congress 2014

The Philippines hosted the 2014 International Seaweed Congress on November 19-21, 2014 at Waterfront Hotel in Cebu.

Over 700 participants from Asia, Oceania, Europe and the Americas attended the International Seaweed Conference hosted by the Seaweed Industry Association of the Philippines in Cebu City last 19-21 November 2014. These participants included farmers, processors, exporters, government officials, decision-makers, entrepreneurs, scientists, the academe and the stakeholders of the seaweed industry. The theme

of the congress is *Breaking Barriers in Environmental, Health, Socio-Economic and Political Challenges*. International experts presented papers on various topics such as development of seaweed farming techniques and the status and demand of the different seaweed species.

The SEAFDEC/AQD delegation consisted of the AQD Chief Dr. Felix G. Ayson, seaweed scientist and researchers Ms. Ma. Rovilla Luhan, Ms Jonalyn Mateo, Mr. Keneth Tibubos and AQD Information Specialists Mr. Isidro Tendencia and Mr. Jesus Manolo Almendras.



SEAFDEC/AQD booth during the conference showing AQD's seaweed scientist Ms. Maria Rovilla Luhan; AQD Chief Dr. Felix Ayson; the Governor of the Province of Palawan, Hon. Jose Alvarez and the Mayor of Tudela, Mr. Erwin Yu

Two Egyptians finish seabass hatchery operation training

PHOTOS COURTESY OF MABDAT



Screening of rotifers (left) and injecting of hormone to seabass (right)

Farm owner Dr. Mona Azzan Hassan Abdat and assistant farm manager Mr. Mohamed and Mohamed Abu Taleb finished the special training course on seabass hatchery operation and management from 16 to 31 October 2014. The Al

Shams for Fish Development Company of Egypt requested for this special training schedule. The course objective is to teach the participants the basic technical skills and knowledge in the operation and management of a seabass hatchery.

The 16-day course included lectures on seabass broodstock management and induced-spawning, larval rearing and nursery culture of seabass in land-based tanks, as well as on the nursery and grow-out culture of seabass and other marine fishes in cages. Additional lectures comprised the culture of natural food, and the detection and prevention of diseases in seabass and other marine fishes. Practical activities complemented these lectures. These included broodstock sampling and hormone injection to induce spawning; installation of egg collectors in the broodstock tanks; collection of eggs, counting, disinfection and incubation of the collected eggs. The participants were also taught how to calculate fertilization rates and hatching rates and

were allowed to observe the progress of embryonic development. They also did actual larval rearing runs from stocking of newly-hatched larvae through the critical early larval stages. The practicals on natural food production touched on the identification of phytoplankton; isolation and purification techniques using microcapillary methods; counting techniques; culture media preparation; and the scale up of algal cultures.

This is the 3rd training course attended by Dr. Abdat. Last year, she attended the training courses on *Shrimp Hatchery Operation and Management* and the *Community-Based Freshwater Aquaculture for Rural Areas of Southeast Asia*. She plans to send more of her staff to attend SEAFDEC/AQD's training courses.

AQD goes to Caraga for training on nutrition and diseases

PHOTOS COURTESY OF WINROCK INTERNATIONAL / J NOBILLOS



AQD scientist Dr. Mae Catacutan teaches the participants how to process feeds (left) and AQD scientist Dr. Relicardo Coloso guides trainees in pelletizing feeds (right)

The training on "Feed Preparation, Feeding and Health Management for Tilapia" organized by SEAFDEC/AQD and Winrock International had 16 participants representing tilapia growers from Agusan del Norte, Agusan del Sur, Surigao del Norte and Surigao del Sur. Some faculty and students of the Northern Mindanao School of Fisheries

(NMSF) also attended the course. The training was held at the NMSF campus in Buenavista, Agusan del Norte, Philippines on 20-22 October 2014.

Tilapia aquaculture has excellent potential for expansion in the Caraga region where current production is not sufficient to meet local demand. As in the production of most aquaculture species,

feed cost constitutes the biggest cost in tilapia production. Since tilapia is a low-trophic species, it can grow well on feed formulations with very little or no inclusion of fish meal, deriving protein from plant-based protein sources. The training course highlighted feed formulation and farm-based feed preparation utilizing locally available feed ingredients as well as feeding management practices that minimize feed wastage and environmental impacts. With this approach, the feed component of the production cost can be decreased and income can be increased.

The course was designed as a mix of lectures and hands-on exercises. The topics covered include the role of fish nutrition and feeding in aquaculture, nutrient requirements of tilapia and other aquaculture species, alternative feed ingredients,

evaluation and processing of feed ingredients, feed formulation, feed preparation, and management & economics of feeding. Identification of diseases affecting tilapia, as well as their prevention & control, and sampling of tilapia for disease diagnosis were also integrated into the training module.

The participants thanked the resource persons for the learnings from the course that include the sourcing out of feed ingredients from plant materials as protein source that are locally available in the region (e.g. squash, corn, freshwater mysids among others). They also appreciated the insights on health management for their tilapia.



SEAFDEC/AQD joins Iloilo Biodiversity Week

The Provincial Environment and Natural Resources Office (PENRO) of Iloilo Province held the first Iloilo Biodiversity and Watershed Week from December 1 to 3, 2014. The three-day event gathered the different watershed councils, national government agencies, the academe, non-government organizations and people organizations to display at the provincial capitol grounds their unique watershed and biodiversity features through posters and live flora or fauna.

This was undertaken in collaboration with the Department of Environment and Natural Resources (DENR) Region 6 – Biodiversity Partnerships Project, University of the Philippines Visayas, West Visayas State University's College of Agriculture and Forestry and the FishWorld Museum of SEAFDEC/AQD.

The event highlighted and recognized the importance of conservation and protection of local biodiversity and included series of lectures on the concepts of biodiversity and the status of biodiversity from the ridge to the reef in Iloilo Province. In addition, there was a biodiversity quiz, on-the-spot poster making and lantern-making contests. The indigenous peoples of Panay were also there to share their ethno knowledge on pharmacology, veterinary, healing potions, indigenous food and farming techniques. The general public and specially students were there and were given the opportunity to learn and appreciate the value of biodiversity.

All SEAFDEC/AQD posters for this activity can be viewed at www.seafdec.org.ph/2014/seafdecaqd-joins-iloilo-biodiversity-week/.



Melon-headed whale, *Pipanocephala electra*, Arevalo, Iloilo City, 5 August 2003



Fraser's dolphin, *Lagenorhynchus hosei*, Namocan, Tigbauan, Iloilo, 29 May 2011



Fraser's dolphin, *Lagenorhynchus hosei*, Pabitanan, Otan, Iloilo, June 2000



Short-fin pilot whale, *Globophala macrocephala*, Tugache, Otan, Iloilo, 21 August 2009



Risso's dolphin, *Grampus griseus*, Arevalo, Iloilo City, 5 April 2006, died with intestine blocked by plastic bags



Risso's dolphin, neonate, Parara, Tigbauan, Iloilo, 30 June 2010



Dwarf sperm whale, *Kogia sima*, with fetus in uterus, Parara Sur, Tigbauan, Iloilo, 8 February 2011



False killer whale, *Pseudorca crassidens*, Arevalo, Iloilo City, 21 May 2008

Whales, dolphins, and dugongs stranded around Panay and Guimaras

The seas around Panay and Guimaras harbor a diverse assemblage of marine mammals. Strandings of dugongs and 10 species of whales and dolphins have been documented by, and some specimens have been buried or preserved and exhibited at, SEAFDEC FishWorld in Tigbauan, Iloilo over the past 14 years. Most of these specimens were reported or delivered by personnel of the DA Bureau of Fisheries and Aquatic Resources, or the DENR Protected Areas and Wildlife Bureau, and by the police and municipal and barangay officials.

We recorded the first Irrawaddy dolphin *Orcaella brevirostris* in Dumangas, Iloilo (first report in box at upper right). A dwarf sperm whale *Kogia sima* beached at Parara Sur, Tigbauan, Iloilo on 8 February 2011 turned out pregnant.

Whales, dolphins, and dugongs are marine mammals, not fish. They have lungs and must come to the sea surface to breathe air. They have hair on a blubbery skin. They form strong family ties and live in extended family groups that sometimes strand together. Adults mate with internal fertilization, and babies are born and nursed from hidden mammary glands for extended periods. Marine mammals have low birth rates and small population sizes.

Whales, dolphins, and dugongs are endangered animals (due to continued hunting, habitat loss, and pollution) and are protected by Philippine laws and international conventions. Stranded marine mammals should be reported to BFAR, PAWB, the local government officials, or the police.



Irrawaddy dolphin *Orcaella brevirostris*, Punta Pulao, Dumangas, Iloilo, 1 July 2005

An Irrawaddy dolphin in Dumangas

Teodora Bagarinao

Friday, 1 July 2005 was AQD Do-Day, but I was glued to the computer, rushing to finish the booklet *Regional Guidelines for Responsible Fisheries—Responsible Aquaculture*. Then Mateo Doyola of BFAR texted that a 'melon-headed whale' was caught in Punta Pulao, Dumangas. I took a van to AQD's Dumangas Brackishwater Station and arrived almost at noon. There was the dolphin, on a table in the garage, surrounded by children. It was to be buried as soon as a plastic bag could be found to contain it. The dolphin was found by fisherman Ricarte Morera about 5 pm, 30 June, entangled in a gill net off the islands Siete Pecados. It was brought to the garage and was reported to the Mayor, to BFAR, and to TV news crews.

The dolphin was 2 m long, uniformly gray, and had a small blunt head and a small dorsal fin. It did not match the photo and description of 'melon-headed whale' in *A Field Guide to Whales and Dolphins in the Philippines* (JHL Tan, 1995). It did not match any of the 20 species in that book. Then somebody asked, why doesn't SEAFDEC take it? Why not indeed? As luck would have it, Tomas Hauta's truck passed by, his men were going to Tigbauan to return several fiberglass tanks. Mr. Hauta agreed to let his men deliver the dolphin to FishWorld. This was FishWorld able to acquire a dolphin for its collection. That night, there was TV footage of the 'melon-headed whale' in Dumangas.

Things got hectic as we prepared for the AQD anniversary and for the Regional Technical Consultation on Stock Enhancement. During the RTC, a Country Representative flashed a photo of the endangered Irrawaddy dolphin, *Orcaella brevirostris*. I almost fell off my chair. The 'melon-headed whale' from Dumangas looked like *Orcaella brevirostris* instead. Evidently it is. The dolphin is named after the Ayeeyarwady Delta in Myanmar, and has been reported in Vietnam, Indonesia, and in 1999 in Malampaya Sound, Palawan, Philippines. Now an Irrawaddy dolphin from Dumangas, Iloilo hangs in the Fisheries Hall of FishWorld.

We reported the Dumangas Irrawaddy dolphin during the April 2006 meeting of the Wildlife Conservation Society of the Philippines in Puerto Princesa.

In 2009, cetacean biologist Louella Dolar photo-identified 10 Irrawaddy dolphins in Guimaras Strait. The Palawan population consists of 70-80 individuals.

Strandings and captures of marine mammals may also be reported to:
Teodora Bagarinao
Email dorish@seafdec.org.ph; mobile 0921-559-0824
AQD Museum of Aquatic Biodiversity
SEAFDEC FishWorld, 5021 Tigbauan, Iloilo



Whales, dolphins, and dugongs are marine mammals, not fish. They have lungs and must come to the sea surface to breathe air. They have hair on a blubbery skin. They form strong family ties and live in extended family groups that sometimes strand together. Adults mate with internal fertilization, and babies are born and nursed from hidden mammary glands for extended periods. Marine mammals have low birth rates and small population sizes.



Whales, dolphins, and dugongs are endangered animals (due to continued hunting, habitat loss, and pollution) and are protected by Philippine laws and international conventions. Stranded marine mammals should be reported to BFAR, PAWB, the local government officials, or the police.



Dugong, Dugong dugon, Moroban, Jordan, Guimaras, 13 December 2006, caught in fish corral, returned to open sea by boat (SEAFDEC/AQD's Ispang Marine Station)



Dugong, Ispang, Nueva Valencia, Guimaras, 13 December 2006, caught in fish corral, returned to open sea by boat (SEAFDEC/AQD's Ispang Marine Station)



Long-snout spinner dolphin, *Stenella longirostris*, Guimbal, Iloilo, 15 January 2014



Spotted dolphin *Stenella attenuata*, Kalibo, Aklan, 18 July 2007



Dugong, beached at Calatagan, February 2011, now on exhibit at SEAFDEC FishWorld

My wishes and thoughts this Christmas...

May this Christmas conclude the present year on a joyful note. As our Christmas celebration for 2014 suggests, let's claim the blessings of peace, love and unity amidst diversity in our present time. As we celebrate this season, let us remind ourselves of what really is the meaning of Christmas. This is a time for thanksgiving and celebration for the birth of our Lord and Savior, Jesus Christ. We could never repay the grace we've received from our Father above; we can simply share His great love to others. Let us all extend our blessings with one another with joyful heart. May the true spirit of the season be celebrated here in SEAFDEC/AQD! Merry Christmas everyone and have a Prosperous New Year!

-- Myrna Teruel, Ph.D.

Unity in Diversity - Let's make this a truly meaningful Christmas theme by sharing our blessings and making our less fortunate families in Buyu-an happy. A hundred from each one of us will surely make a difference. Isn't it more fulfilling to see these happy people with their big smiles. Let's start the ball rolling. Have a merry merry Christmas!

-- Rodrigo Lacierda

May this Christmas end the present year on a cheerful note and make way for a productive and bright New Year. Here's wishing everyone a Merry Christmas and a Happy New Year!

-- Rosenio Pagador

I just want to thank God for all the blessings I have received this year. And hoping that this Christmas, everybody will be able to enjoy and celebrate true spirit of the occasion. Merry Christmas to everyone!!!

-- Caryl Vincent Genzola

May the peace and blessings of Christmas be yours, and may the coming year be filled with happiness. -- Edgar Vincent Antolino

Christmas I know should be a joyous time of the year for everyone because of the birth of our Lord Jesus Christ. But for me and my family Christmas is not that merry since we lost our Mom last September. We were just hopeful and have a happy thought that Dad

and Mom are now happy together in heaven. And wishing that they will continue to look upon us and guide us, their children, sons-in-law and grandchildren in our daily lives. I wish everyone a Merry Christmas and a prosperous New Year! -- Nanette Bantillo

I love Christmas especially celebrating the true meaning of it by remembering the birth and life of our Savior Jesus Christ, spending quality time with family and friends, and giving of myself to others through acts of service and kindness. Remembering the feelings from receiving the small act of kindness, a simple gift of love and I believe it represents the true meaning of Christmas which is "selfless giving."

-- Agnes Ferrer

Until one feels the spirit of Christmas, there is no Christmas. It isn't all about the gifts & decorations, it's the warmth that comes to the hearts of men when the Christmas spirit returns again through Jesus Christ. "Love & Harmony throughout SEAFDEC/AQD."

-- Diemel Torrecampo

Christmas for me is the time of love, joy and sharing. The time when we celebrate the birth of our Lord and savior Jesus Christ. To have him in our hearts is the most precious gift. My Christmas wishes are good health for me and my family, love and understanding that abound even in difficult situations, and may a good relationship between me and my siblings remain even if our parents have passed away. Merry Christmas and a beautiful New Year to all! -- Laila Galaura

When I was younger, I always look forward to Christmas. It's the time when I receive lots of gifts from family and friends. Where we attend gatherings left and right, meeting familiar and not so familiar faces. It is always the happiest and most memorable time. Now, Christmas is still the season to always look forward to. It is still the happiest and most memorable time. The only thing that changed is I get to give presents to my family and friends which is more fulfilling. Seeing smile on their faces and



feeling the warmth of their gratitude is something that makes you forget your troubles and problems. Indeed Christmas is always the most wonderful time of the year!!!

-- **Jo Anne Coronel**

For me, it doesn't matter how we celebrate Christmas, what matters most is its true essence, the birth of our Lord Jesus Christ, our Savior. To live life according to His teachings, to spread kindness and love to everyone in our own way. It doesn't matter how they appreciate it or how they give it back. What's important and fulfilling is we gave it out and shared to them. A Merry Christmas and prosperous New Year everyone!!! -- **Nelce Tolosa**

As we take a moment from our busy lives to celebrate the birth of our Lord, let us keep Christmas meaningful by giving love to those who need it most. Let's celebrate it not just for a day, but a lifetime through- bringing us closer to God. May the timeless message of Christmas fill our heart and home with peace and joy. Wishing you all the happiest Christmas and the best New Year!

-- **Janelli Garibay**

Wishing you all the happiness of the season and prosperity in the new year. Have a blessed Christmas and a fruitful New Year!

-- **April Abalajon-Nievaes**

Christmas season is not all about giving and receiving gifts, lighting a Christmas tree, hearing Christmas carols and greeting one another "Merry Christmas." I hope everyone will realize that it is a season of great joy, a time of healing and renewed strength and the time of God showing His great love for all of us. God sent His son into the world to be born. And the only begotten son paid for the things we have done wrong. Jesus is the reason for celebrating this season.

-- **Charmi Margaret Fernandez**

My Christmas wishlist... staying happy with my family, enjoying my career, accomplishing my dreams, financial stability, developing the future of my kids, enhancing my talents, continually be of service to SEAFDEC in order to achieve this wishlist! Merry Christmas to us all and may the Lord continue to shower us and SEAFDEC with more blessings!

-- **Anonymous**

In every Christmas, SEAFDEC spread happiness and bring prosperity with lots of blessings to its employees. -- **Eileen Traya**

Merry Christmas and Happy New Year!

-- **Rizza Tapales**

Peace on earth and good health for all.

-- **Recoralph Gomez**

Let go of all the problems you can't solve... enjoy the holidays without any worries present in mind. -- **Glenn Tabaldo**

May the spirit of Christmas bring us peace. The gladness of Christmas give us hope. The warmth of Christmas grant us love. Thank you Lord for all the blessings we received for the year and for the years to come... Tenchu!

-- **Sunshine Salonga**

Peace, joy, love and unity to SEAFDEC/AQD family!!!

-- **Rena Santizo**

World peace! -- **Lit, Josh, and Jas**

Healthy mind, body and soul for SEAFDEC/AQD employees and their families.

-- **Anonymous**

More projects so we can employ more people!!! -- **Jean**

Tani i-charge sa project ang SEAFDEC uniform please! ... kag Biometrics

-- **DOST employees**

Benefits, please?

-- **Anonymous**



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