

# AQUA Dept NEWS

Internal Newsletter of the SEAFDEC Aquaculture Department

Special Feature

Vol. XVIII No. 19 June 2, 2003

## IRAP activity launched

By WG Yap and VT Sulit

After some delay due to various reasons the latest of which was the SARS outbreak, the Integrated Regional Aquaculture Project (IRAP) under the ASEAN-SEAFDEC Special 5-year Program had a soft launching with the first phase of the site visitation and survey conducted from 12 to 23 May 2003.

The initial countries covered were Indonesia, Brunei Darussalam, and Malaysia. The AQD survey team consisted of these writers and three experts from Thailand's Department of Fisheries (DOF) and one from AQD who joined the survey in different places depending on the expertise required.

Sunee Payomjamsri, Food Technologist from the DOF Fisheries Technological Development Division came on board for Jambi, Indonesia; Sombhong Suwannatos, Senior Aquaculture Advisor of the DOF Fisheries Foreign Affairs Division for Brunei Darussalam; Nareupon Sukumasawin, Fisheries Biologist from the DOF Inland Fisheries Research and Development Bureau for Malaysia, and Dr. Leobert dela Peña, AQD's very own scientist from the Fish Health Section.

IRAP is an outcome of the Millenium Conference held in Bangkok in 2001. The four Depart-

ments of SEAFDEC have identified several projects for implementation. Two of these are aquaculture projects, which will be undertaken

in all the ASEAN countries with the exception of Singapore. The projects are based on proposals submitted by the ASEAN National Coordinators during the IRAP Seminar-Workshop

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## AquaHealth Online starts today

The second offering of the distance learning course Principles of Health Management in Aquaculture (AquaHealth Online) starts today and will run for 103 days or until September 12.

Two participants from each SEAFDEC member country have been invited to attend the course. Another five private sector participants will join them.

An effective health management program is important for a successful aquaculture project. This was dramatized in the late 80s and early 90s when diseases devastated a number of aquaculture projects in many countries. Through distance learning, it is now convenient and practical for a learner to acquire knowledge and skills in health management at his own place and time. A learner only needs a computer and an Internet access to interact with highly qualified teachers and with fellow learners.

After the course, the participants are expected to: (1) recognize diseased shrimps and fishes; (2) identify the cause of the disease; (3) explain how a disease develops; (4)

apply preventive and control measures to lessen the risks posed by the disease; and (5) use appropriate techniques for preparation of samples for disease diagnosis.

The course includes modules on impact of disease development in aquaculture; viral diseases; bacterial diseases; fungal diseases; parasitic diseases and pests; nutritional diseases; environmental and other non-infectious diseases; harmful and toxic algae; histology as a tool in disease diagnosis; serology and molecular techniques in disease diagnosis; immunity/biological methods of disease prevention/control; and physical/chemical methods of disease prevention/control.

Dr. Celia Torres and Sharon Mendoza will run this year's AquaHealth Online as course officer and training assistant, respectively.



held in September 2002. Thus, each respective country selected all the choice of species and the site where the projects would be undertaken. Each country shall have two projects, one under Supply of Good Quality Seeds and the other under Aquaculture for Rural Development.

**First stop: Indonesia**

Our first stop was Jakarta and we flew in via Bandar Seri Begawan on Royal Brunei Airlines in order to avoid going through Singapore. Our plane was a bit late but we were met at the Javanese-kraton inspired Soekarno-Hatta Airport in Cengkareng by Anto Sunaryanto, ASEAN National Coordinator for Indonesia. There was no SARS check in Cengkareng, we only had to fill in a health form.

In Indonesia the survey team visited the Freshwater Breeding and Aquaculture Research Station in Sukamandi on the first day. Of particular concern was the readiness of the facilities and the staff to evaluate different strains and produce good quality seeds of the giant freshwater prawn, *Macrobrachium rosenbergii*.

The team flew to Jambi province in southwestern Sumatra to look at the culture of Pangasius in earthen ponds in Tangkit, Muaro Jambi District and in wooden cages set along Batanghari River.

The team visited one fish farmer



Yap with a Pangasius pen operator in Batanghari River



In Jambi, the authors with third from left: Nukiyama-san, Sunee, Maskur (former head of Jambi Center now head of Sukabumi Center), Ceno (new head of Jambi Center), and Ediwarman.

who is also engaged in the smoking of Pangasius. The problem in Pangasius culture was reported to be on marketing, hence, the expert invited, Sunee, was involved on fish processing. In Tangkit the team learned that the fish is now displacing pineapple, the area's main crop because of its greater profitability.

While in Jambi the team took the chance to visit Balai Budidaya Air Tawar Jambi (Freshwater Aquaculture Development Center) and was able to meet Yoshitetsu Nukiyama, who was one of the first batches of seven Japanese experts sent by JICA to AQD when AQD first opened. Nukiyama-san's two children (a daughter and a son) were both born in Iloilo. His daughter is now working in the Japanese Embassy in Brunei Darusalaam while his son is making a movie somewhere in New Zealand.

Nukiyama-san has already spent 15 years in Indonesia, first in South Sulawesi and later in Gondol, Bali. He is now the JICA Team Leader in Jambi with four long-term and two short-term experts.

**Getting stuck on the way to Puncak**

From Jambi the team returned to Jakarta and from the airport in Cengkareng we were driven to Sukabumi in West Java to visit the Freshwater Aquaculture Develop-

ment Center (FADC). The trip should normally take not more than 3 hours but it was May 15, a Thursday and the start of a 4-day weekend on the occasion of Waisak, the Buddhist New Year (Visakha Bucha Day), which is also a national holiday in Indonesia. And it seems like everybody and their uncle in Jakarta were on the road to Puncak (pronounced Poonchak), the famous hill top resort that is noted for its tea plantation. The major artery to Puncak also leads to Sukabumi. So just like their counterparts in the Philippines, Indonesian motorists filled the street even the opposing lanes. It was a monumental traffic jam, which our Sukabumi-based driver skirted by taking little known roads.

Sukabumi has an elevation of 700 m and therefore has a cool climate just like Puncak. It also had its share of holiday travelers though not to the same extent as Puncak. It is the center for freshwater fish breeding including ornamental to page 3



Facilities at Sukabumi Center (top and middle) and freshwater fish trading at Sukabumi Market (bottom)



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fishes. This is probably the reason why the FADC was located there using an old agriculture station established by the Dutch.

The Center is very well equipped with earthen and concrete ponds, culture tanks, and laboratory facilities. A PCR will be delivered this year. With a staff complement of more than 200 it can rival TMS for sheer size. Many of the technical staff has advanced degrees and many have undertaken specialized training abroad including at AQD.

Sukabumi is also noted to be the source of many of Jakarta's movie stars – but we learned this much later when we were already in Malaysia! Too bad! But then we couldn't have lingered since Indonesia was only the first stop. Without any chance to even drop by Sarinah to shop for the usual *pasalubong*, Jakarta's famous department store, which specializes in Indonesian products, the AQD team flew to Bandar Seri Begawan, the capital of Brunei Darussalam.

As in Indonesia, we were asked to fill in a health form, which asks whether we have been to SARS-infected countries during the last two weeks.

### **Brunei: land of the lush and the plush**

At the airport, we were met by, who else - but former "AQD'ers" Beato "Jun" Pudadera and Ramon "Monchit" Agbayani. Monchit has been in Brunei for 17 years and Jun even longer. Both are considered stalwarts in Brunei's aquaculture sector. Jun is Fisheries Officer with the Fisheries Department and Monchit the General Manager of Semaun Prim Sdn Bhd, the fishery agency's investment arm. But they work closely together.

They are now into the third gen-

eration *Penaeus stylirostris*, which were introduced as SPF stock by another ex-AQD staff, Leonardo "Bong Tiro" and so far they were able to maintain the stock as SPF. Due to the good performance of the introduced species which can attain 30g in 4 months, the government is intent on promoting it further and Monchit is now busy supervising the construction of a state-of-the-art, biosecure maturation and breeding facilities which of course can also be used to produce SPF *P. monodon*. (At the rate we are moving, before we know it the Philippines may find itself sending people to Brunei to observe and train on shrimp domestication).

IRAP of course is not concerned with penaeids. In fact Brunei has selected *Macrobrachium* as the species to work on for both the Seed Quality and Rural Development Projects. But a look at their facilities and dialogue with the DOF staff made it apparent that they are capable of producing good quality seeds not only of *Macrobrachium* but also of any species, with proper training.

With a population of only 360,000 at last count it would seem that Brunei do not have a rural area for development. (To provide a perspective the SM Megamall along EDSA in Metro Manila has a daily traffic of between 300,000 to 400,000 people).

Brunei must be an environmentalist's idea of heaven. Three quarters of the country has forest cover and the government has a no-cut policy preferring to import all its timber. When the team was taken to Temburong district by speedboat across Brunei Bay, the lush virgin mangrove lining on both sides of the tidal river where the boat docked, was a sight to behold.

We could have gone to Temburong by land but that would have meant cutting across a tongue

of the Malaysian state of Sarawak and that would have meant some prior arrangement for a transit visa (for Filipinos). Temburong is not contiguous with the other three districts of Brunei.

The DOF staff brought us to two fish farmers who are potential co-operators for the Aquaculture for Rural Development, which in Brunei involves *Macrobrachium* culture. The first farmer,

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*The one hour speedboat trip to Temburong with Technical Coordinator Noraini (top). Near the Temburong pond of fish farmer Zacariah and Noraini (2nd photo). Third photo shows in Brunei with from left: Nida (former AQD trainee), Sombhong, Rosinah, Matzaini, and Noraini (back to camera). Sombhong discusses with Awang Zaidi the problems in Macrobrachium culture (bottom).*



Briefing of aquaculture activities by Fisheries Officers led by Halidi, National Coordinator for Brunei Darussalam (2nd from right, top) and tour of hatchery facilities (bottom).



View of the *Udang Rostris* (*Penaeus stylirostris*) broodstock facilities with Monchit Agbayani (top, right). SPF *Udang Rostris* broodstock (bottom).

Mr. Zacariah, actually works for the local government office of Temburong full-time and aquaculture is merely his relaxing sideline. He now raises tilapia and common carp.

The other farmer, Mohamad Saidi Bin Abdullah, is a full-time farmer in Labi village, Belait District. In addition to his fishpond, Awang Saidi has a tangerine grove, which produces very sweet *dalandan*. BFS staff will probably

remember him as a former trainee in freshwater aquaculture. And he has fond memories of Tapao Point so much so that he also would like his son to one day go to the Philippines to learn fish culture.

He has already tried raising *Macrobrachium* using juveniles supplied by the DOF. He produces good survival but his main problem was uneven sizes with only few males attaining large sizes, most were undersized. But next time around, with his interest and a little guidance from IRAP experts he should have a more evenly sized prawn harvest.

A delightful steamboat dinner hosted by Halidi, Brunei's National Coordinator capped our Brunei sojourn. And just as we thought we were headed back to the hotel, Jun Pudadera took us to a night tour of the Empire Hotel premises. This opulent hotel, seven stars they say in Brunei, was rushed into completion for the APEC meeting in year 2000. One walks in at the street level entrance to find oneself gazing down at the vast lobby, about five floors below. The view is dizzying to say the least.

### Malaysia: truly Asia

The next morning saw us on the Royal Brunei Airlines flight to Kuala Lumpur. The magnificent Kuala Lumpur International Airport arrival area was SARS-ready. Not only did we have to fill in a health form we also have to stand briefly inside a high tech metal-detector like structure which turned out to be equipped with a thermal scanner and an imager. It was manned by three people who, with their white uniforms and face masks and gloves looked like nurses. The computer monitor shows your face and your body temperature in large digits. Presumably, if your temperature is 38 degrees or higher, you can be held for further check and possibly quarantined.

Makes you wonder if you can still get DSA if God forbid, one gets quarantined!

After a rather lengthy wait we were finally on board the Malaysian Airlines flight to Kuala Terengganu. Kuala in Malay means mouth of the river. The Terengganu airport terminal just like Iloilo's pride in Mandurrao is also not equipped with a baggage conveyor so we have to jostle for our baggage in the cramped baggage claim area. Because of the large number of passengers it took us some time to claim our baggage.

Ibrahim Saleh, SEAFDEC MFRDMD Chief who was on his way to Kuala Lumpur, had to check what was holding us and told us that his staff, Jamaluddin (he preferred to be called Din) and driver Nordin were outside waiting for us and wondering whether we have arrived. We were told that Terengganu is opposition country – that's why a new terminal, long overdue, cannot be built.

Malaysia had identified the Marine Finfish Production and Research Centre in Tanjong Demong in Terengganu as the site for implementing the Good Quality Seed Project and grouper is the species of choice. On the way to Tanjong Demong using an MFRDMD van with Din as our guide, we first had to pick up Leobert at the airport since he had to sleep in KL because the flight from Manila does not connect with the last flight from KL to Terengganu. Tanjong Demong is about 90 minutes

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Tour of Center facilities with its Head, Akhir Arshad.





Seabass nursery pond in Tanjong Demong, using fry distributed by the Center.

north of Kuala Terengganu, the state capital.

At Tanjong Demong the main species being propagated is siapak or sea bass, *Lates calcarifer*. Here they produce 2 cm-long fingerlings, which are distributed to several earthen nursery pond operators within the area where these are reared to 10-12 cm fingerlings to be sold to cage operators.

The center also has mangrove snapper and two species of grouper, the humpback (*Cromileptis altivelis*) and the giant grouper although they have no intention of breeding the former due to its slow growth and low market demand even if it is more expensive.

They prefer to develop the technique to propagate the giant grouper, *Epinephelus lanceolatus* because of its rapid growth. They are seeking the assistance of Indonesia's Dr. Ketut Sugama for this, whose services shall also be engaged by AQD under IRAP. Dr. Dela Peña's role is to introduce the protocol for producing Specific Pathogen-Free grouper fingerlings developed at AQD under the Regional Fish Disease Program.

The Team made a quick visit of SEAFDEC MFRDMD facilities in Chendering, Kuala Terengganu. Dr. Mansor Mat Isa made a briefing of their activities in the absence of their Chief Ibrahim Salleh who was in KL for an important meeting.

The site selected by Malaysia for implementing Aquaculture for Rural Development is the KADA Irrigation Canal in Pasir Putih, which is in the neighboring state of Kelantan. The area is about 3 hours north of Kuala Terengganu and about an hour's drive away from the Malaysian Thai border.

In Pasir Putih we were met by Salehan bin Lamin, Malaysia's Technical Coordinator for the project who flew in from KL just to be with us. On hand also was the head of the Kelantan State Fisheries Department, Haji Hussain Rahman and Pasir Putih District Fisheries Office Head, Mr. Kamaruddin Awang.

We drove to the irrigation canal that was developed and is being operated by the Kelantan Agriculture Development Authority (KADA). It is 625 km long with at least 50 km identified as not affected by runoffs from farms and is therefore suitable for aquaculture. There are 40 units of cages that were put up by the Sultan of Kelantan. Officially the IRAP project will be implemented through the Royal Fish Cage Culture Project. The cages are being operated by five farmers for demonstration of the potential of fish cage culture to increase household income in the rural area. Being raised in the cages are tilapia, Pangassius, catfish (*C. gariepinus* hybrid) and climbing perch (*Anabas testudineus*).

At the site, the Royal Project prepared a simple feast for us consisting of steamed glutinous rice and fermented fish, young coconut, and tangerines.

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The Survey Team and hosts (top). Cage installations in KADA Canal (middle) and a more high-tech installation using HDPE (bottom).



Lunch of pulot (steamed glutinous rice) with ikan pekasam, coconut juice, and dalandan (top, middle). Patin Siam (*Pangasius spp.*) to be processed to ikan pekasam (bottom).



Typical fish pens in KADA canal

The fermented fish or ikan pekasam that was served was made from undersized Pangasius using a traditional method. These are packed in nice plastic containers and sold in stores and even at the airport.

We also visited a fishpen opera-

tor who has been in the business since the late 1990s. His fishpen (as are all other fishpens in the canal) was built by simply stretching a net across the whole 60 m width of the irrigation canal about 300 meters apart.

These are stocked with ikan baun (*Mystus* sp.), Pangasius, tilapia, Java barb (*Barbodes gonionotus*), hybrid catfish, and even Colossoma, which is an exotic species from South America (that is closely related to piranha).

The fishpen operator has an average daily sale of about 50 ringgits (US\$1.00 = MYR 3.78) with net income of about 30 ringgits. At 3.78 ringgits to a US dollar, this is equivalent to an average daily earning of close to US\$8.00. And he is already happy about it. And who wouldn't be? Hopefully IRAP will also lead to more happy fish farmers in the rural areas of South East Asia.

## Training course on marine fish hatchery starts

The training course on Marine Fish Hatchery (MarFish) starts June 2 at TMS with five Filipino participants, namely: Lorenzo Castillo, Roderick Dancel, Caroline Tejero, Domingo Galila, and Keely Chua.

Two more participants are expected to arrive: Antonio Tan (Phi) and U Khin Htun (Myanmar). Khin is attending the course under the Special 5-Year Development Program of SEAFDEC.

Dancel and Castillo were participants of the recently concluded Sustainable Aquaculture training course but decided to stay on for MarFish.

Fish hatcheries are indispensable support to grow-out culture. Aside from supplying quality seeds to farmers in sufficient quantity, fish seeds are urgently needed to restock natural waters and replenish dwindling

wild seedstocks. That's the reason why production of quality seeds has always been an anchor activity of AQD since its inception. As a result, valuable technologies were generated in the spawning and larval rearing of commercially important species.

The goal of the training course is to provide participants with technical knowledge and skills on the spawning and larval rearing of marine fishes such as milkfish, seabass, grouper, snapper, and rabbitfish, and thus enable them to operate a fish hatchery of said species.

Due to the need to allocate for more time in the production of natural food organisms, this year's MarFish is 15 days longer than the previous courses. At the end of the course, the participants are expected to produce healthy fry of selected

### Humor

The Indians asked their Chief in autumn if the coming winter is going to be cold or not.

Not really knowing the answer, the chief replied that the winter is going to be cold, and that the members of the village are to collect wood for fuel and heat for a cold winter.

Being a good leader, he then went to the next phone booth and called the National Weather Service and asked, "Is this winter going to be cold?" The man on the phone responded, "This winter is going to be quite cold indeed."

So the Chief went back to speed up his people to collect even more wood to be prepared. A week later he called the National Weather Service again, "Is it going to be a very cold winter?"

"Yes," the man replied, "it's going to be a very cold winter." So the Chief went back to his people and ordered them to go and find every scrap of wood they can find.

Two weeks later he called the National Weather Service again "Are you absolutely sure that the winter is going to be very cold?"

"Absolutely, we made a study" the weatherman replied, "The Indians are collecting wood like crazy!"

marine fishes by knowing how to: (1) apply proper broodstock management and spawning techniques; (2) produce natural food organisms for fish larvae; and (3) apply larval and nursery rearing techniques.

The training course will end on July 16.

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**AQUA DEP'T NEWS** is published weekly by DEVCOM, TID at the Tigbauan Main Station. **Editor this issue:** SM Wee; **Circulation:** E Gasataya; **Photography:** R Buendia (*unless otherwise credited*)

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