



## Health Advisory Group urges vigilance & preparedness against emerging disease

The second meeting of the Asia Regional Advisory Group (AG) on Aquatic Animal Health was held at the NACA Headquarters, Bangkok, Thailand on 10-12th November 2003. The 10-member Advisory Group, constituted by NACA, in cooperation with OIE and FAO, advises Asian governments on aquatic animal health management. Members are experts from government and the private sector with representatives from FAO, the Aquatic Animal Health Standards Commission of the OIE and the OIE Regional Representation for Asia and the Pacific.



*Members of the Advisory Group*

The AG addressed key aquatic animal health issues in Asia, including regional disease reporting systems, emerging aquatic animal disease problems (emphasizing taura syndrome virus (TSV), koi herpes virus (KHV), and abalone die-offs), implementation of the Asia Regional Technical Guidelines on Health Management and the Responsible Movement of live aquatic animals, and ways to further strengthen regional and international cooperation in aquatic animal health management.

The final report will be circulated to the regions' fisheries and veterinary authorities and will be made available to general public through the NACA web site ([www.enaca.org](http://www.enaca.org)). The second meeting provided a number of important recommendations on aquatic animal disease control in Asia-Pacific.

The recent outbreaks of **koi herpes virus (KHV)** in Japan and continued occurrence of **koi mass mortality** (yet to be confirmed as KHV) in Indonesia emphasize the need for effective

programs on surveillance and emergency preparedness, as indicated in the "Asia Regional Technical Guidelines on Health Management for the Responsible Movement of Live Aquatic Animals". National Coordinators (NCs) in countries or regions with susceptible species are advised to increase vigilance for KHV.

The AG expressed concern over the recent reports on isolation of **spring viraemia of carp (SVC)** from common carp and koi carp in China PR. The SVC virus detected in China did not cause mortality, but is a concern because SVC was presumed exotic to the region. National Coordinators in countries or regions with susceptible species should increase vigilance for SVC.

Since the listing of **grouper iridoviral disease** in the QAAD from January 2003, Hong Kong China, China PR and Singapore have reported the occurrence of iridoviral diseases. The occurrence of grouper iridoviral diseases is generally accepted as being widespread, but not being officially reported. In view of the increasing

importance of marine finfish farming in Asia, and extensive movement of fry, fingerlings and adult fish, NCs in countries or regions with marine fin fish culture activities are advised to strengthen surveillance and reporting of grouper iridoviral diseases.

**Taura syndrome virus (TSV)** is a new exotic shrimp virus in Asia now reported from *Penaeus vannamei* in China PR, Indonesia and Thailand. TSV may be under-reported due to existing government restrictions on *P. vannamei* introductions and limited screening. The AG was concerned that the spread of TSV may be greater than indicated by QAAD reports and emphasized the need for improved reporting of TSV in the region indicating the species it infects.

With reports of **white spot syndrome virus (WSSV)** now causing health problems in *P. vannamei* cultured in Asia, the AG recommended that the occurrence of WSSV in *P. vannamei*

should be reflected in the QAAD reports.

Little attention has so far been given to diseases of molluscs in the region, although serious losses are known to be occurring. Recent **abalone die offs** in Taiwan Province of China and the mainland are causes of concern. There is yet no confirmatory aetiology, but viruses and/or *Vibrio alginolyticus* have been implicated. Japan, Australia, Taiwan Province of China and China PR have large abalone industries. In view of the importance of mollusc aquaculture to Asia, as well as movement of their spat and adults, efforts are required to improve reporting of their pathogens.

Emerging health problems (but not yet listed in the QAAD) such as **slow growth syndrome** in *Penaeus monodon*, **mourilyan virus** in shrimps, **peripheral neuropathy and retinopathy** in *P. monodon*, and **white tail/body disease** in *Macrobrachium rosenbergii*, were highlighted as a growing concern for the region. The AG emphasized the need for epidemiological studies, good disease outbreak investigations and clear case definitions to better understand these problems and their impacts.

The **QAAD reporting form** was revised to conform with changes to the OIE Aquatic Animal Health Code. These changes were adopted by the OIE International Committee at the General Session in May 2003 and have been incorporated in the latest (6th) edition of the Aquatic Code (2003). Also included are changes recommended by the AG to reflect the aquatic animal disease situation in the region.

- Addition of ‘spherical baculovirosis’ (*Penaeus monodon*-type baculovirus or MBV) to ensure that all OIE-listed diseases appear on the QAAD form;
- Adjusting the names of OIE-listed diseases of molluscs as per table 1;
- Removing reference to ‘notifiable’ (previously indicated by an asterisk behind the disease name);

- Adding ‘spring viraemia of carp’ to the list of diseases prevalent in the region and removing it from the list of diseases presumed to be exotic;
- Adding ‘infection with koi herpesvirus’ to the list of diseases prevalent in the region; and
- Adding ‘abalone viral mortality’ as an unknown disease of a serious nature.

In view of different **genotypes** of serious shrimp viral pathogens described in the literature and in recognition of their different levels of virulence, the AG agreed that the issue of specificity needs to be carefully assessed while considering trans-boundary movement of Specific Pathogen Free (SPF) and Specific Pathogen Resistant (SPR) stocks. The AG requested the President of the OIE Aquatic Animal Health Standards Commission (AAHSC) to refer this matter to the next meeting of the AAHSC, with a view to obtain advice from OIE Reference Laboratories.

The meeting emphasized the advantages of **OIE emergency reporting system** to trading partners. It was suggested by the AG that compliance with these existing mechanisms should be strengthened in the region. Also, similar mechanisms for regional diseases of importance but not listed by the OIE should be established, in view of emerging new diseases having potential to spread and cause trade disruptions.

The AG agreed **emergency preparedness** should happen during “peace time” (ie. when there is no disease). When there is an emergency, the response should proceed according to the plans that have been developed. AG recommended that a Generic contingency plan for the region using the Australian example be developed. The AG welcomed the FAO initiative on a proposed workshop on this theme in Indonesia in 2004.

The AG agreed that creation of an **emergency fund** to tackle emergency responses to new diseases in the region is a useful initiative. Suggestions were made to develop a more formal protocol and get general agreement from member countries during the NACA Governing Council Meeting (GCM).

The AG recognised that there was considerable developments in many countries in the level of implementation of “**Technical Guidelines** on health management for the responsible movement of live aquatic animals”. The AG noted the fact that despite adopting the Beijing consensus, some of the countries were yet to initiate the process. The need for commitment and willingness on the part of the governments was highlighted as the main requirement for implementation of Technical Guidelines.

The AG emphasized the need for **harmonization** of diagnostic techniques and more inter-calibration exercises to determine capacity and deficiencies of laboratories with aim of

**Table 1: Revised names for mollusc diseases in QAAD reporting form**

Old name	New name
Bonamiosis:	infection with <i>Bonamia ostreae</i>
	infection with <i>Bonamia exitiosus</i>
	infection with <i>Mikrocytos roughleyi</i>
MSX disease:	infection with <i>Haplosporidium nelsoni</i>
Marteiliosis:	infection with <i>Marteilia refringens</i>
	infection with <i>Marteilia sydneyi</i>
Mikrocytosis:	infection with <i>Mikrocytos mackini</i>
Perkinsosis:	infection with <i>Perkinsus marinus</i>
	infection with <i>Perkinsus olseni/atlanticus</i>
SSO disease:	infection with <i>Haplosporidium costale</i>
Withering syndrome of abalone:	infection with <i>Candidatus Xenohalotus californiensis</i>

upgrading/improving skills. The AG felt that harmonization work on important diseases (Fish/shrimp/Mollusc) in the region should be carried out under NACA/FAO/OIE collaborative efforts

On establishment of **regional resource base**, the AG suggested that this should be a continuous process and advised NACA to operationalize the resource base at three levels (regional resource experts, regional resource centers and regional referral laboratories).

The AG welcomed the ongoing NACA programs on promoting widespread adoption of **better management practices** in the region at the farm level. The group agreed that such approaches also provide an opportunity to address food safety, certification and trace-ability issues to meet the future market requirements. The AG recommended NACA use several channels to widely disseminate the study findings.

The AG strongly emphasized the need to foster stronger **cooperation between veterinary and fisheries authorities**. The AG recommended NCs contact their Chief Veterinary Officers concerning the outcomes of the regional OIE meeting, aquatic animal disease standards and relevant follow up actions. Such cooperation between fisheries and veterinary authorities should help ensure aquatic animal disease issues relevant to Asia region are properly considered during the development of reporting systems and aquatic animal disease control standards.

The AG noted the excellent **regional and international cooperation** in the development and implementation of the regional aquatic animal health program. It was generally agreed that there are several opportunities to further strengthen cooperation between NACA and OIE, FAO, ASEAN, ACIAR, EU, APEC, SEAFDEC, SPC and other regional and international bodies for effective implementation of the regional aquatic animal health program.

## New Zealand farmer help train Asian aquaculturists

NACA was visited recently by Robert Bishop, a progressive New Zealand aquaculturist. He offered help in developing a training course for aquaculturists in Asia-Pacific, which would be modeled after the highly successful and very practical program that he has been involved with in New Zealand. What credentials does he bring to this initiative?

Robert Bishop has been working in the aquaculture industry since 1991 coming from an engineering background. He specialized on land-based farms. In 1994 he was a founder member of the New Zealand Abalone Farmers Association and went on to represent industry as a member of Seafood Industry Training Organization. Robert says he has always believed in the training of staff on the ground level, which in turn helps a company improve its profitably.

Robert had worked with others in the abalone industry to help develop the National Certificate in Aquaculture level 3 (abalone farming). New Zealand became the first country in the world to award qualification in abalone farming. This also helped create industry standards. Robert then moved on to the wider area of aquaculture and currently is a member of the Aquaculture Seafood Industry Training Organization, helping to develop instructional units for all aquaculture to Diploma level. During this time he also went on to build the largest abalone farm in New Zealand from 1993 to 1997.

His view of the industry is "to see the world embrace aquaculture like we do any other form of farming system". He believes that this will only be achieved through local and international cooperation of aquaculturists in terms of technology, sound scientific

research, and training. He told NACA that his long term personal goal is to work with international aquaculture industry, organizations, and societies (such as the UN, NACA and WAS) to help developing countries develop their aquaculture sector.

## Mr Junaidi Che Ayub

Mr. Junaidi Che Ayub assumed the post of the Director-General of Fisheries Malaysia on 8th October 2003. He succeeded Dato' Hashim Ahmad who retired on the October 7, 2003. Before that he had been Deputy Director-General of Fisheries since 2001.



Mr. Junaidi born in Ipoh, Perak on August 7, 1952. He graduated from the University of Malaya with B.Sc (Hons) in Botany and obtained his M.Sc in Fisheries Policy and Planning from the University of Hall, United Kingdom in 1992.

He joined the Department of Fisheries in 1977 and has served in various Divisions including as the Director of Corporate Planning Division (2000-2001), Director of Resource Management and Conservation Division (1999-2000), Head of Marine Park Division (1994), Head of Fisheries Research Institute (1992-1994), the Fisheries Training Institute (1977-1980) and also as the State Fisheries Director for Sarawak and Selangor. He currently serves as Malaysia's representative in the NACA Governing Council.

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## **Global Aquaculture Discussion Forum, Dhaka, Bangladesh**

The Bangladesh Shrimp Foundation (BSF) and NACA jointly hosted the first meeting of the Global Aquaculture Forum on the 3rd and 4th December 2003 at Sarina Hotel, Dhaka, Bangladesh.

The various stakeholders in Global Aquaculture, the producers, buyers, environmental NGOs, trade bodies, Government and international agencies are scattered across the world and rarely sit down together to discuss key issues facing the seafood industry. On certain issues, constructive dialogue between these stakeholders is lacking; they have become polarized in their viewpoints and confrontational in their approach. Continued growth of sustainable aquaculture depends upon stakeholders holding different views having a forum in which they can honestly talk with each other for the sake of the millions of people who depend upon aquaculture to make a living. Practical solutions to problems facing the seafood industry can only emerge from a commitment by all the stakeholders to participate in continuous dialogue and discussion of these issues.

The AquaMarkets 2003 workshop held in Manila, Philippines, emphasized the importance of bringing stakeholders together to share experiences and ideas on trade in the aquaculture sector, and to seek positive solutions to problems and constraints. In response to such recommendations, NACA collaborated with the BSF, a Bangladesh foundation established to support responsible development of shrimp aquaculture in Bangladesh, to organise this meeting to promote dialogue among various aquaculture stakeholders.

The meeting involved a wide range of stakeholders, from within Bangladesh, and from other countries in Asia, and importing regions. In Bangladesh, participants from the Department of Fisheries and Ministry of Commerce, as well as donors, researchers and

industry actively participated in the forum discussions. Mr. Amir Khosru Mahmud Chowdhury, Honorable Minister of Commerce, Government of People's Republic of Bangladesh inaugurated the meeting, and pledged full support from the government of Bangladesh for forum initiatives and also to seafood export industry, noting the export of shrimp ranks second highest of the exports from the country.

Together, 71 participants representing international organizations, government agencies, NGOs, donors, international certification accreditation bodies, national research institutes, universities, trade associations and farmer associations from Bangladesh, India, Sri Lanka, Thailand, USA, and Vietnam. The forum proceeded in an informal way allowing good exchange of experiences and ideas among participants. The participants gained better understanding of different stakeholder perspectives, market developments and emerging trading practices in aquaculture products (certification system, Codes of Conduct, trace-ability etc), and implications for small-scale producers. Innovations that support small-scale aquaculture producers (with an emphasis on those operating low input systems) and positive social and economic development outcomes for developing countries within emerging trading schemes for aquaculture products, were discussed, and various follow-up actions for producers, governments, and supply chains that support implementation of these innovations were identified. The participants agreed to continue dialogue to seek solutions to various issues and problems discussed. The final report of the forum meeting is under preparation. For further information, contact the Bangladesh Shrimp Foundation (forum@shrimpfoundation.org) or NACA at shrimp@enaca.org, or check out the NACA web site (www.enaca.org).

## **STREAM Conducts Livelihood Capacity-building in the Philippines...**

As a component of the FAO Technical Cooperation Programme, "Assistance in Poverty Alleviation through Improved Aquatic Resources Management in the Asia-Pacific" STREAM has just completed the first of a series of workshops to build capacity in livelihoods approaches and analysis. This took place in Iloilo City, the Philippines.

Further workshops on "Livelihoods Approaches and Analysis" will be conducted in India (for Indian and Nepali colleagues), Lao PDR, Myanmar and Yunnan in China. The workshop report can be downloaded from the STREAM Virtual Library <http://www.streaminitiative.org/Library/VirtualLibrary.html>

Accompanying the workshop series will be the development of a toolkit to support partners to analyse livelihoods, in CD and hard copy format. This will be available soon from the STREAM Initiative. For more information contact paul.bulcock@enaca.org

## **...and State-level Communications Strategy Workshops in India**

As one of the initial activities of the DFID NRSP project R8334 'Promoting the Pro-Poor Policy Lessons of R8100 with Key Policy Actors in India' STREAM conducted State-level Communications Strategy Workshop in Orissa, West Bengal and Jharkland during October and November to discuss the project, draft a state-level communications strategy and generate ideas for a monitoring and evaluation process in line with the draft communications strategy. The

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# MPEDA/NACA shrimp farmer workshop held in Andhra Pradesh, India

A shrimp farmer workshop was held on 26th November 2003 in Mogalthur village. The workshop was organized by Sri Subrahmanyeshwara Aqua Club, Mogalthur in collaboration with the Marine Products Export Development Authority (MPEDA), Govt. of India and NACA to disseminate the outcomes and experiences of the 2003 “village demonstration program” to the farming community and concerned people from shrimp farming industry. The demonstration program was organized under the MPEDA/NACA technical assistance on shrimp disease control and coastal management, with additional technical and financial support from the Australian Centre for International Agricultural Research (ACIAR). The workshop successfully brought together 625 farmers and 50 officials from various government agencies and private service providers for an active and interesting session.

## Stakeholders roles

Mr. Vishnu Bhat, Joint Director (Aquaculture), Marine Products Export Development Authority (MPEDA) opened proceedings with a welcome address to introduce the MPEDA/NACA technical assistance program, village demonstration activities and objectives of the workshop. Mr. Krishnaiah, I.A.S., Commissioner of Fisheries, Govt. of AP inaugurated the function and discussed the FAO TCP project “Health Management of Shrimp Aquaculture in Andhra Pradesh” during 2004 and proposed shrimp disease control demonstrations through establishment of farmer clubs and “cluster management” in six villages of Nellore, Krishna, Guntur and West Godavari districts. Dr. Michael Phillips, NACA, thanked members of Sri Subrahmanyeshwara AquaClub, Mogalthur and MPEDA for their active participation and cooperation during the 2003 village demonstration program. By adopting so-called “better health management practices”, or “BMPs”, the farmer club in Mogalthur had reduced the costs

of production thus increasing the returns, a particularly important outcome considering the declining shrimp prices. He emphasized the challenge now to take the BMP adoption to a wider area. The importance of organized better market access to small-scale farmers using BMPs, production of high quality shrimp without any chemical residues, and implementation of trace-ability systems. Dr. Bhojan, Director, MPEDA, thanked NACA for its technical assistance in supporting efforts to solve the problems in Indian shrimp farming sector. The role of MPEDA in promoting shrimp farming was noted by Dr Bhojan, who assured the shrimp farming community that MPEDA will continue to make efforts to sustain shrimp farming in India. Shrimp farming earns around one billion dollars from a production of about 75,000 tonnes of farmed shrimp.

From the business sector, Mr. Sudarshan Swamy, President of the All India Shrimp Hatcheries Association, expressed his full support to the program of MPEDA and NACA. He emphasized the importance of further cooperation by government agencies to support healthy seed production, including efforts to address constraints caused by lack of sufficient quality broodstock. Mr. Mohan Raju (President, West Godavari District, brackish water prawn farmer association) emphasized the importance of good quality seeds for the farmers, and appealed to MPEDA to assist hatcheries in producing quality seeds. He requested assistance from NACA for shrimp quality improvement. Mr. U.K.V. Raju, President, Seafood Exporter Association of AP, requested MPEDA to support more aqua clubs to implement BMPs, and thus to produce quality shrimps to meet demands from foreign consumers. Mr. Rajnikant Rai, Vice President, ITC IBD Ltd, Hyderabad, highlighted the aquachoupal program taken up by ITC in the shrimp-farming sector to assist farmers. He informed there were 75

Aquachoupals with access to the internet for market information, disease control information, and facilities for e-learning and exchange of knowledge. He emphasized the many challenges being faced in marketing of aquaculture products, and stressed the urgent need to connect people in the industry (farmer – market – exporter) for meeting international market requirements, and better market access. Mr. GN Murthy, President, Sri Subrahmanyeshwara AquaClub, Mogalthur informed the workshop of his useful experiences on club formation during the MPEDA/NACA program and advised all shrimp farmers to take up a cooperative approach in solving the problems in the sector. Mr. Phanindra Meher and Mr. Satyanarayana Murthy, progressive farmers of West Godavari and East Godavari Districts shared their experiences with the Mogalthur farmer club through their regular visits to the village demonstration site.

In the subsequent technical sessions, Mr. Ravi Babu and Mr. ABCh Mohan, technical assistants of NACA, presented the outcomes of village demonstration programme in the local (Telugu) language. The objectives of this village demonstration programme were to (1) promote adoption of BMPs to a wide number of farmers and create a visible and detectable impact (2) assist and encourage the village to take up initiatives for “self-help” and organization (clubs/associations) for health management and (3) promote the concept of cooperation among shrimp farmers in the village to produce shrimp product without use of banned chemicals. In total 58 farmers with 108 ponds spread over 58 ha of water area participated in this program through a self-managed aquaclub. BMP adoption rates in these demonstration ponds were much better than the surrounding non-demonstration ponds. However, within the club the BMP adoption rates varied mainly due to farmers’ financial capacity and willingness to invest. Better adoption of BMPs during the pond preparation

and grow-out period showed significantly higher production, survival rates at harvest and longer duration of culture. Crop outcomes of farms with adoption of some basic BMPs even outperformed surrounding non-demonstration ponds. Village demonstration ponds on an average could achieve higher production, 6 g bigger sized shrimps, with 24 days longer culture, 26% more survival rate at harvest, and reduced production costs compared to non-demonstration ponds in surrounding villages (though the average stocking densities were similar in both groups). Although some demonstration farms still faced disease problems, the results are extremely encouraging, showing the potential for reducing risks or shrimp disease and low productivity.

### Benefits from clubs

The formation of the aquaculture club in Mogalthur has helped farmers in many ways, including through (1) information exchange and sharing of knowledge on BMPs among farmers within the group; (2) cooperation in starting the crop at one time thus avoiding continuous stocking and harvests; (3) cooperation in screening and buying seeds; (4) cooperation in 'on-farm' common nursery management thus assuring better quality seeds to the smallest farmers; (5) cooperation in accessing quality farm inputs (feed, lime etc.); and (6) cooperation during water supply and draining especially during disease outbreak period to reduce risks of disease spread. The outcomes of the demonstration suggest a strong potential future role for such aquaculture clubs in shrimp farm management.

The question and answer section raised these key points: (1) the importance of continuing to develop and strengthen aquaculture clubs; (2) the need for support to neighboring village farmers in implementation of BMPs; (3) the need for village level farmer meetings to be conducted in many other villages to disseminate information on BMPs; (4) provision of revolving funds instead of subsidies should be considered as priority for timely implementation of BMPs by

small and marginal scale farmers; (5) MPEDA should consider other incentives for aquaculture clubs, such as PCR testing free of cost; (6) the need for BMPs to demonstrate good harvesting and post-harvest handling techniques to avoid muddy/mouldy smell in shrimps; (7) the need to identify the causes of loose/soft shell problem and develop solutions/preventive measures for this problem; and (8) to develop trace-ability systems for marketing of products from BMP farms and aquaculture clubs, with support from MPEDA and other agencies.

Following this workshop, NACA staff held discussions with the staff of Central Institute of Brackish water Aquaculture (CIBA) for further collaboration on research and extension activities in 2004, including some joint activities to strengthen use of PCR in diagnosis of shrimp viral diseases. *Visit the NACA web site for further information on the Mogalthur workshop and demonstration reports, the MPEDA/NACA technical assistance program, cooperation with CIBA and ACIAR on shrimp disease control and extension, and NACA's regional program on shrimp health management.*

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workshop reports can be downloaded from the India and Policy Development pages of the STREAM Virtual library.

<http://www.streaminitiative.org/Library/VirtualLibrary.html>

### Learning by Doing - Fisheries and Adaptive Learning

The DFID funded Project R8292 "Uptake of adaptive Learning for fisheries enhancements" intends to build on the experiences of an experimental approach to stocking village communal water bodies in Southern Lao PDR. An Adaptive Learning or "Learning and Doing" approach will be tried in new settings such as rice fish systems in India and reservoirs in the lower Mekong basin. The project's main aim is therefore draw upon lessons learnt from these

studies as well as the experiences of others to develop the existing Adaptive Learning guidelines. The project will then promote the adaptive learning approach and guidelines more widely amongst those involved in the field of natural resources management in SE Asia.

The project's second brief has just been published and highlights on progress include:

- Key elements regarding the formulation of the communication strategy were agreed upon at a meeting in Kolkata. Discussions were held regarding the suitability of different media and communications strategies already in existence within partner organizations and from this it was discovered that written materials, e-mail contact, websites and face to face discussions were the preferred media whilst guidelines should be made available in both written and electronic format.
- It was also revealed that the level of participation in communications activities by collaborating organisations varied, but was generally geared towards delivering a message rather than creating dialogue. The project's communication strategy will however aim to develop a dialogue about adaptive co-management, whilst ensuring that this process is monitored and refined.

In addition the review of existing adaptive learning guidelines has begun to improve content and usefulness. These guidelines are a non-technical guide that provide a framework for implementing the approach in organizations working on natural resource management. The guidelines introduce the principles of adaptive learning and illustrate how they were executed in a real field setting in Laos. These are available from the FMSP website as a pdf document <http://dialspace.dial.pipex.com/town/green/gov67/FTRs/r7335a.htm>

For more information contact [robert.arthur@ic.ac.uk](mailto:robert.arthur@ic.ac.uk).

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## NACA cooperation expanded to shrimp health management in Vietnam

Support to Brackish Water and marine Aquaculture Development (SUMA) is a program funded by Danish International Development Aid (DANIDA) to assist the Ministry of Fisheries in Vietnam in the development of sustainable coastal aquaculture. On November 2003, NACA signed an agreement with SUMA and DANIDA to implement a 2-year project from January 2004 to support the development and implementation of aquatic animal health disease control measures in Vietnam. The objective of the project is to help reduce risk of fish and shrimp disease outbreaks and the negative impacts of such diseases on farming households and trade in aquatic animals, in five pilot provinces of coastal Vietnam. The expected outputs from the project include better management of risk in shrimp post-larvae, improved management of risk in coastal shrimp farms, capacity building among provincial institutions in Vietnam, including local farmer groups, and piloting of disease surveillance systems. The project will provide an opportunity to share experiences in disease risk management from other countries in the region, including the successful work in India, and ongoing work in Indonesia, Thailand and Australia supported through the Australian Centre for International Agricultural Research (ACIAR).



*Farming shrimp in the north central coast of Vietnam*

## 150 people trained in Q3-Q4, 2003

The second half of 2003 has been a big one for NACA's Training Programme (and for our Training Manager, Mr Zhou Xiaowei). Over 150 people participated in seventeen network training courses and study tours. These included:

- Shrimp Health Management Training Course, 18 – 23 August 2003
- MPEDA Shrimp Hatchery Operators Study tour to Thailand, 6-11 September 2003
- Training Course in Health Management for MRC Members countries under AIMS Component, 15 - 19 September 2003
- Training Course in Health Management for MRC Members countries under AIMS Component, 15 - 19 September 2003
- Study tour to Vietnam and Thailand on Coastal Aquaculture and Community development, 17 - 24 September 2003: Vietnam
- Study tour to Thailand and Malaysia on Coastal Aquaculture, Community Development and Planning, 01 ~ 10 October 2003
- Study tour to Southern Thailand on Shrimp Farm Certification, 07-10 October 2003
- Malaysian study tour to Thailand on Ornamental fish breeding and culture, 7 – 12 October 2003
- Coastal Aquaculture Development Study Tour to

Guangdong and Fujian, China, 22 ~ 30 October 2003

- Study Tour to Thailand and Malaysia on Fisheries Resource Management and Aquaculture Development, 22 October – 04 November 2003
- Hands-on Training on Sea-Bass Breeding, Hatchery operation and Nursery in Thailand, 22 October – 05 November 2003
- Training on Sturgeon Culture, 3 – 21 November 2003
- National Training Workshop on Product Quality and Safety Control in Aquaculture, 17 – 21 November 2003
- Fisheries Management and Coastal Aquaculture Development Study Tour to Hainan and Guangdong Provinces, Southern China, 8 – 16 December 2003
- Study Tour to Southern China and Thailand on Marine Fishery Resource Management and Coastal Aquaculture Development, 22 - 31 December 2003

*Training by AQD with NACA sponsorship*

- E-Learning (On-Line) Training Course On Basic Principles Of Aquaculture Nutrition, 21 July – 31 October 2003
- Training Course On Diagnosis of Important Viral Diseases Of Marine Shrimp And Fin-Fish, 5 – 21 November 2003

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## International Symposium on Freshwater Prawns Held at Kochi, India

Freshwater Prawns 2003 held in Kochi, India from 20-23 August 2003 was seen as a major event in the history of freshwater prawn culture development in India. A total of 137 scientific papers were presented and more than 500 delegates attended from 14 countries. Mr. Michael New OBE, President of the European Aquaculture Society and presented the keynote address and summarised the proceedings in the final plenary session. The event was

organized by the College of Fisheries, Kerala Agricultural University, Kochi. Dr. C. Mohanakumaran Nair was the General Convener of the Symposium. A detailed report of the symposium and comments in the final plenary session are available for download from the NACA website, visit:

<http://www.enaca.org/modules/news/article.php?storyid=128>.

# Developing an online aquaculture community for NACA

We have rebuilt the NACA website. The new design will be released towards the end of January 2004. "So what!", you cry, "you've rebuilt it three times already!".

You're right, we have. But this time its different.

## It's not 'just a website'...

This time it's not 'just a website'. It's an *online forum for the NACA Community* - a 'virtual place' where people can 'meet' each other, discuss aquaculture issues, publish local information and collaborate with colleagues from around the world.

NACA's Participating Centres are scattered across 16 countries. People don't get the chance to meet their colleagues in other centres very often. It can be difficult for people to communicate directly or to find out what others are working on. Establishing an online community for NACA is one step towards removing these barriers.

## ...it's a communications tool...

The new website provides some powerful communications tools that will allow you to collaborate online with your colleagues in other centres or from around the world. Public discussion boards are provided where you can ask questions, discuss issues or provide advice to others. You can start your own topical discussions if you wish - you decide the issues you wish to discuss, and you decide how you want to use the system.

## ...and it's interactive

The new system allows you to submit your own local information for publication on the NACA website. You can submit news stories, events, publications or links by pasting them into an online form.

If you have a story, a research achievement, a meeting, publication or

training course that you believe would be of interest to other people in the NACA network then send it in. Our Section Editors will examine all submissions and relevant material will be published on the website. In this way we hope that it will become easier for NACA participants to share information about their activities.

## The power of the community

An online community is a powerful tool that allows individuals to tap the combined knowledge of the group. For example, if you are seeking advice on an issue you can post a question on the discussion boards where hundreds of your colleagues in the NACA network may see it. There is a good chance that someone will know the answer and can help you. In turn, you can also assist others by sharing your own experiences.

## How to get involved

To use the discussion forums or submit stories you must register as a member. It is completely free and simply involves filling out a registration form on the website. This will create a personal website account for you, enter you in the member database and enable you to use the personal messaging and notification features of the website. Please visit and sign up!

## Our thanks to...

We would like to thank the National Electronics and Computer Technology Center of Thailand (NECTEC) and Kasetsart University for generously providing access to their high-speed internet facilities, needed to make this online community website a reality.

The website is based on the open-source XOOPS Content Management System which can be obtained from [www.xoops.org](http://www.xoops.org). We would like to thank the XOOPS Developer Community for making this software available to the world for free.



Network of  
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