



Recommendations of the Aquamarkets Consultation 2003



Presenters and country representatives at the Aquamarkets Seminar and Regional Consultation

The Aquamarkets 2003 “Accessing markets and fulfilling market requirements of aquatic products, seminar, consultation and exhibition,” was held in Manila, Philippines 2-6 June 2003. It was co-organized by NACA, the Philippines Bureau of Fisheries of the Department of Agriculture and the Department of Trade and Industry, with cooperation from PhilShrimp, Inc.

The idea for Aquamarkets 2003 originated from the recommendations made during the NACA/FAO Conference on Aquaculture in the Third Millennium, held in Bangkok in February 2000, ASEAN-SEAFDEC “Fish for the People” Conference in Bangkok in November 2001, the first meeting of FAO’s Committee on Fisheries’ Subcommittee on Aquaculture, Beijing, April 2002, the ASEAN-EU AquaChallenge Workshop also held in Beijing in April 2002, and the UN ESCAP survey on

Asian and Pacific fishery implemented with INFOFISH.

The outputs expected from Aquamarkets 2003 were the following:

1. Increased awareness, knowledge and understanding of participants, particularly farmers and potential exporters, on core issues and approaches to accessing and meeting requirements of markets for aquaculture products as well as on key stakeholders and players involved;
2. Recommendations for action on accessing and meeting requirements of markets for aquaculture products; and
3. Technical report on issues and approaches on accessing and meeting requirements of markets for aquaculture products in the Asia Pacific region.

In total, 156 sectoral stakeholders from Bangladesh, Brunei Darussalam, Hong

Kong, India, Indonesia, Malaysia, Nepal, Pakistan, The Philippines, Singapore, Sri Lanka, Thailand, Vietnam, and the USA, and from regional and international organizations and institutions such as ASEAN Fisheries Federation, INFOFISH, FAO, SEAFDEC, GAA/ACC, World Fish Centre (ICLARM), International Marine Alliance and The Nature Conservancy (IMA/TNC), UNDP, WTO and WWF attended the activity.

A two-day Seminar was held, which consisted of presentations and panel discussions on selected issue areas including product standards, food safety and quality; certification; marketing efficiency; trade and marketing linkages with poverty; food security and environmental sustainability; international trade agreements and national import regulations; and tariff and non-tariff

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EC-funded project targets seafood trade and poverty

NACA and STREAM will join an EC-funded project to investigate the seafood trade and poverty. Fisheries products form a vital component of the livelihoods of many millions in Asia (although commonly hidden at the micro-level). Global trade in fisheries products is a multi-billion Euro trade involving developing countries that supply over 50% of world exports (compared to < 30% for agriculture). Trade between Asia and the EU in aquatic products is significant, yet the links between such trade, national poverty reduction programs, and livelihoods of poor aquatic resource users and small-scale farmers are poorly understood. There are a number of issues to be investigated, including market access arrangements and costs of implementation of international fisheries agreements, such as WTO sanitary and phyto-sanitary (SPS) measures, and market-driven labelling schemes. The research will bring a team of specialists and stakeholders from both ends of the market chain (in the EU and Asia) to undertake a detailed analysis of the seafood trade and poverty, and to undertake case studies to increase knowledge and understanding about the complex relations between trade in aquatic products and sustainable livelihoods of rural farmers and fishers.

The case studies will focus on farmed shrimp, and cultured and ornamental marine fish from selected coral reef areas in SE Asia. Research outcomes will provide guidance in national and international trade policy development and help to identify mechanisms whereby trade in aquatic products can better support sustainable rural livelihoods and poverty reduction. Further information on the project will be posted on the NACA web site along with other information to promote dialogue on seafood trade, small-scale producers and poverty reduction.

Shrimp Disease Control and Coastal Management

The Marine Products Export Development Authority (MPEDA), Kochi, in association with Ministry of Agriculture, Government of India and the Network of Aquaculture Centres in Asia-Pacific (NACA), Bangkok conducted a two-day Workshop on "Shrimp Disease Control and Coastal Management" on the 5th and 6th of March 2003 at Chennai.

The Workshop was the culmination of the two and a half year MPEDA-NACA Technical Assistance Programme with the objective of presentation and discussion of the various findings and recommendations from the study, and to discuss future actions to strengthen shrimp health management in India to support sustainable aquaculture development.

The technical assistance started during August 2000, and was completed in December 2002. The objectives of the Technical Assistance were to: (a) Study horizontal and vertical transmission of diseases in selected shrimp farming areas, including investigation of hatcheries and broodstock; (b) develop practical measures for containing/preventing shrimp disease outbreaks, which should specifically cover identification of shrimp disease risk factors, diagnosis of problems and management strategies to control disease in farms; (c) conduct training and demonstration of appropriate shrimp disease control measures, including demonstration of farm management practices for containing viral and other diseases in selected farms; and (d) examine opportunities for co-operation and self-help among shrimp farmers in affected areas to control water quality deterioration and shrimp disease control.

The study was conducted in three phases: Phase I: Planning of the Technical Assistance and baseline data collection, carried out between August and December 2000; Phase II: Detailed study of the selected shrimp

farming areas between January 2001 and December 2001. During this phase a detailed "Shrimp disease risk factor study" was carried out; and Phase III: Support to demonstration and implementation of better shrimp health management practices between January and December 2002.

The geographical focus of the Technical Assistance was coastal Andhra Pradesh, in particular the two districts of Nellore and West Godavari. Nevertheless, the findings have wider application to other coastal shrimp farming areas in India. Efforts to engage farmers in training and workshops have been made throughout the Technical Assistance programme. During Phase 2, a total of 1166 participants (mainly farmers) attended workshops in West Godavari, and 299 in Nellore. During Phase 3, there were 281 participants in village workshops, and 470 in final district level workshops. Thus, in total, 2216 participants, mainly farmers, had attended workshops and training sessions during the Technical Assistance. This extensive interaction with the farming community had provided a means of informing and disseminating study findings, and receiving feedback on the results.

The workshop made recommendations for follow-up actions designed to facilitate widespread adoption of study findings, and to support building of capacity within the farming community, and supporting agencies, for effective shrimp disease control, and environmentally sound and antibiotic free shrimp production. The recommendations of the workshop that emerged from the discussions/deliberations were as follows:

1. A priority programme should be established to ensure supply of specific pathogen free (SPF) brood stock.
2. State Governments should assess the potential coastal areas for aquaculture using GIS and remote sensing.

3. Similar shrimp disease control and coastal management studies should be extended to other coastal States
4. Assistance should be provided for the development of local farmer groups.
5. The draft manual prepared by from the Technical Assistance programme should be printed in Regional languages and made available to farmers.
6. An all India coordinated project should be initiated to extend and promote widespread adoption of better shrimp health management practices among coastal farmers.

Aquamarkets consultation

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barriers to trade. This was followed by a 2-day Regional Consultation, with a special session on trade, marketing and poverty.

The consultation addressed the role of regional and international organizations; poverty alleviation, food security and environmental sustainability and their linkages with marketing and trade of aquatic products including better management practices; and the need to create enabling conditions for producers and exporters of aquatic products to gain access to markets and/or enhance their competitiveness and the relationship between economic development and trade liberalization.

Participants at the Aquamarkets 2003 consultation endorsed the recommendations on markets and trade and on food quality and safety contained in the Bangkok Declaration on Aquaculture in the Third Millennium.

Consultation participants also made the following recommendations to further support the region in accessing markets and meeting market requirements for products from aquaculture:

1. Encourage nations in the Asia-Pacific region to improve national, regional and international cooperation in order to better

share information on markets and trade in aquaculture products, and to ensure that relevant information on fisheries and aquaculture are provided to those engaged in trade negotiations.

2. Improve information exchange and communication on marketing and trade in aquaculture products in the Asia-Pacific region, such as through the development of a regional web site, linked with national focal points for information exchange.
3. Give special consideration to small holders and economically vulnerable people in the development of policies in the area of marketing and trade. Enhance understanding of such issues to inform policy-making and support fair trade.
4. Enhance cooperation between private and public sector, on activities to improve access to markets and meeting market requirements.
5. Encourage nations in the Asia-Pacific region to develop common stance on issues of interest to the aquaculture sector. In particular, efforts are required to harmonize standards and technical regulations, regionally as well as internationally.
6. Encourage importing countries and regions, such as the EC, to harmonize the application of rules and standards and to make these transparent.
7. Encourage common regional positions and understanding on issues of interest to the region, for example on Codex Alimentarius, the World Animal Health Organisation (OIE) standard setting, and other relevant work on international aquaculture standards.
8. Examine the possibility of establishing a harmonized certification system for aquaculture products from the region.
9. Organize further national and regional consultations to promote better national and regional cooperation and information sharing.
10. Request regional and international organizations to

provide support, technical assistance and capacity building to national and regional efforts with a view to implementing the above recommendations of the consultation, including capacity building on WTO agreements and negotiations issues.

Fisheries and Adaptive Learning: A New Project Has Begun

A project entitled "Uptake of Adaptive Learning for Fisheries Enhancements", funded by the UK's Department for International Development, is being implemented through a partnership between organisations in the UK, India and the Lower Mekong Basin Region. These are MRAG Ltd UK, Mekong River Commission (MRC), the Central Inland Fisheries Research Institute (CIFRI), India; Department of Agriculture, Government of West Bengal, and WorldFish. Based on an experimental approach to stocking village communal waterbodies in southern Lao PDR and employing an adaptive "learning by doing" approach, the project intends to build on this approach and expand its focus throughout Southeast Asia.

More information on the experimental Lao PDR approach can be found at <http://dialspace.dial.pipex.com/town/green/gov67>. Click on "Final Technical Reports", then go to project code R7335.

Given the pilot's success, this project's main aims are to promote the approach more widely among those interested in the field of aquatic resources management and to test it in different settings to further increase its applicability.

Communication is the key to the project and a priority is to establish links with people, institutions and organisations involved in aquatic

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Shrimp Aquaculture Certification: Request for information & advice on a new web site

Recognizing the need for better management of shrimp aquaculture, a Consortium Program entitled Shrimp Farming and the Environment was initiated in 1999. The program, a joint initiative of the World Bank, NACA, WWF and FAO, undertook wide-ranging studies of shrimp aquaculture between 1999 and 2002. The Consortium supported 35 complementary case studies prepared by more than 100 researchers in more than 20 shrimp farming countries, through the unprecedented participation of industry, NGO's, academics, and governments, and numerous stakeholders throughout Asia, Africa and the Americas. Cases range from specific interventions within single operations to thematic global reviews of key issues in shrimp aquaculture. Between 2000 and 2002, cases were presented and discussed at more than 150 meetings and workshops worldwide. The cases document and analyze global experiences in management of shrimp aquaculture, and identify key environmental and social issues, and identify better management practices (BMPs) that can be applied to enhance positive social and economic impacts of shrimp farm and reduce negative social and environmental impacts (see www.enaca.org/shrimp).

In March 2002 the Consortium organized a Stakeholder Consultation hosted by The World Bank in Washington DC, USA. This Consultation was important because of its participation by a broad range of people sector stakeholders, from different regions where shrimp farming is important, providing perspectives from industry, governments, civil society/NGOs and regional and international organizations. The meeting created a rare opportunity for stakeholders to interact and share experiences across different levels in the market chain and across regions. The meeting, conducted in a very positive atmosphere, came to broad

agreement on future actions to support implementation of better management practices in shrimp aquaculture.

One important recommendation from the Consultation was that a set of "core" management principles should be developed, and agreed by a wide range of stakeholders, incorporating the better management practices (BMPs) identified during the consortium studies. This is a key and important agreement that provides an opportunity for development of an internationally acceptable set of principles for responsible management of shrimp aquaculture. The recent FAO Sub-Committee on Aquaculture held in Norway in August also recommended work on development of a global set of harmonized principles for shrimp aquaculture management be initiated. Further, the FAO Sub-Committee has recommended exchange of information on aquaculture certification. In response, a web site is being developed to share information and enhance communication among stakeholders on shrimp aquaculture certification. The web site will provide access to the various Codes of Conduct, Codes of Practice, and standards available around the world, and information and opportunities for comment on shrimp aquaculture certification schemes (either existing, or under development). Information on other forms of aquaculture certification, involving other aquaculture commodities apart from shrimp, will also be included.

This notice is to request information on (1) existing Codes of Conduct, Codes of Practice and aquaculture management standards; and (2) aquaculture certification schemes and standards to be sent to NACA for inclusion on the web site. Information on shrimp, and other aquaculture commodities, are most welcome. Your support in this initiative would be much appreciated. Please send any information to shrimp@enaca.org.

Workshop on control and responsible use of alien species

A workshop on "International mechanisms for the Control and Responsible Use of Alien Species in Aquatic Ecosystems" will be held in Xishuangbanna, People's Republic of China, on 27th-30th August 2003.

The goal of the workshop is to assist countries in the Greater Mekong/Lancang sub-region by increasing familiarity with, and making effective use of, international mechanisms for the control and responsible use of alien species in aquatic ecosystems. The objectives of the workshop will be to review the international mechanisms, to identify major constraints to their implementation in the sub-region, and to identify future actions needed to promote the control movement and responsible use of alien species in the greater Mekong/Lancang Sub-Region. Further details will be made available on the NACA web site following the workshop, or are available from Devin.Bartley@fao.org

The workshop will be organised by NACA, in cooperation with Asian Institute of Technology (AIT), Food and Agriculture Organization of the United Nations (FAO), Mekong River Commission (MRC), University of California Sea Grant College Program (UCSG), World Conservation Union (IUCN), Ministry of Fisheries, Peoples Republic of China and the FAO/Netherlands Partnership Programme (FNPP). The workshop will be hosted by the Yunnan Provincial Bureau of Agriculture and the Xishuangbanna Fisheries Administration and Regulation Station.

MPEDA/NACA Technical Assistance on Shrimp Health and Coastal Management

The NACA/MPEDA programme in India is continuing its Village Level Extension activities in Mogalthur village, West Godavari District, Andhra Pradesh province. This is a continuation of three earlier phases of study including the Shrimp disease risk factor study and demonstration of Better Management Practices (BMPs) in private farms conducted during 2000-2002. In January 2003, this programme helped farmers to organise themselves and start the Sri Subrahmanyeswara Aqua Club, which now has 58 active farmer members.

Weekly farmer meetings have been held at the lead farm site since January 2003. The MPEDA/NACA technical team has helped them in planning their crop activities and supported with suggestions and follow-up of BMP implementations on a daily basis. Farmers have started implementing the BMPs at their level of capacity in their 108 shrimp ponds, which total 57 Ha in area. The culture system is modified extensive with a stocking rate of less than 60,000 seed per Ha. The better

management practices in use address pond preparation, pond filling and water preparation, seed selection, stocking time, stocking process, water management, pond bottom management, feed management, regular shrimp health & growth check-ups and farm record maintenance.

This programme also educates farmers on culture of shrimps without chemicals, antibiotics and pesticides. Stocking of wild shrimp seeds are also prohibited. Nursing of hatchery produced seed in "on-farm nurseries" is also practiced as a health management strategy to reduce risk of disease from external commercial nurseries which are common in the study area.

The club also looks forward to more membership from neighbouring farmers from the same village and also from other villages who are keen to follow the BMP system. The programme aims at producing eco-friendly cultured, safe shrimp produce under the newly formed quality circle.

CD-ROM: Investigating Improved Policy on Aquaculture Service Provision to Poor People

The STREAM Initiative (Support to Regional Aquatic Resources Management) has released a multimedia CD containing the outputs of a DFID funded project on improving aquaculture service provision to the poor.

Four video documentary case studies are included (in Hindi with English subtitles) with interviews and perspectives from both aquaculture service providers and recipients in rural communities. These include a case study on support for poor and scheduled caste groups in Jharkand; a successful tribal village conducting aquaculture; recipients experiences of services provided by NGOs in support of poor and tribal groups; and service providers perspectives on the implementation of government

schemes in support of aquaculture. The documentaries are accompanied by reports and powerpoint presentations.

A full video (50 minutes) of a street play "Majajal – the Big Fishing Net" is included, which was performed at the policy review workshop in Noida, Delhi. The play is in Hindi. Both English and Hindi scripts are provided.

A full set of the project publications are included in PDF format including outcomes of the stakeholders workshops, lessons learnt and review of progress towards policy change.

Available from the NACA Secretariat, email publications@enaca.org.

CD-ROM: STREAM Publications November 2001-June 2003

This CD contains a complete set of publications produced by the STREAM Initiative. There are more than 100 documents including workshop reports, case studies and a monthly Media Monitoring service in PDF format. Most of the publications are in English but some (such as the media monitoring reports) are also translated in local languages including Vietnamese and Khmer. Available from the NACA Secretariat, email publications@enaca.org.

CD: FAO Field Project Reports on Aquaculture: 1966-1995

This CD is a goldmine of information covering 1,712 reports produced by 257 FAO aquaculture field projects between 1966 and 1995. Many are included as full text documents including a complete set of 92 publications produced by NACA from inception to 1995 plus another 48 from the Asia Sea-Farming Development and Demonstration project. The CD has a lot of early information and training manuals on culture of shrimp, freshwater prawns and Asian seabass, and many publications on integrated aquaculture including a training manual from the Asian-Pacific Regional Research and Training Centre for Integrated Fish Farming, Wuxi, China.

Other Asian projects covered include the Bay of Bengal Programme, the South Pacific Aquaculture Development Project and many others. The CD also covers FAO projects in other regions of the world. Highly recommended - you can't get this information anywhere else.

Available from FAO, contact Sales and Marketing Group, Publishing and Management Service, FAO Information Division, Viale delle Terme di Caracalla, 00100 Rome, Italy. Fax +39, 06 5705 3360, email Publications-Sales@fao.org.

Changes to the Regional list of Aquatic Animal Diseases

In the light of recent changes to the OIE list of aquatic animal diseases and taking into account diseases of concern to the Asia-Pacific region the following changes have been made in the list of diseases for the quarterly aquatic animal disease (QAAD) reports pertaining to the Asia-Pacific region. Where those changes are editorial, or where diseases have been added by the OIE, those changes were incorporated into the QAAD form automatically. However, any suggested deletion of a disease by the OIE was carefully considered, as the disease may still be of relevance in the region

The following changes were made after detailed deliberations in the first meeting of the Asia Regional Advisory Group (AG) on Aquatic Animal Health held at the NACA Headquarters, Bangkok, Thailand from 6th-8th November 2002. The revised QAAD will be effective from 2003 for the reporting quarter beginning January-March 2003.

- OIE has removed Oyster velar disease and Baculoviral midgut gland necrosis from the international list. The regional advisory group (AG) on aquatic animal health decided to follow the OIE in removing Oyster velar disease, but Baculoviral midgut gland necrosis will remain listed on the QAAD list.
- Viral haemorrhagic septicaemia and MSX disease (*Haplosporidium nelsoni*) have both been reported in the region and in the revised format these two diseases have been moved from the QAAD section "Diseases presumed exotic to the region, but notifiable to the OIE" to "Diseases prevalent in some parts of the region".
- The pattern of the recent epidemic in koi carp in Indonesia is consistent with that of an infectious disease, but there is as yet no definitive aetiological diagnosis. The group decided to list "Koi mass mortality" under

"Unknown diseases of serious nature" to assist in the collation of data.

- Akoya oyster disease: this disease is not currently considered by the OIE for international listing, amongst other issues, because its aetiology is not yet well described, but the disease is of concern in the region. The group decided to list this disease under "Unknown diseases of serious nature" to assist in the collation of data.
- Similarly, the mollusc pathogen *Marteilioides chungmuensis* is recommended for listing under section "Diseases prevalent in some parts of the region" of the QAAD.
- Grouper iridoviral diseases: these are not currently considered by the OIE for international listing, but they are of concern in the region. The group decided to list these diseases under "Any other diseases of importance" to assist in the collection of occurrence data.
- Epitheliocystis: the group noted the occurrence of this rickettsial disease in the region and decided to add it next to Piscirickettsiosis under "Any other diseases of importance" to assist in the collection of occurrence data.

Disease cards developed by experts for Grouper Iridoviral disease, Koi mass mortality, Akoya oyster disease and withering syndrome of abalone have been sent to National Coordinators in 21 countries in the Asia-Pacific region to assist them in regional quarterly aquatic animal disease reporting. The disease cards will be available on the NACA web page.

STREAM SAPA Stakeholder

Workshop in Hanoi

50 participants attended the STREAM SAPA Stakeholder Workshop in Hanoi 18-19 June 2003 to provide input to, and feedback on the country strategy plans for Vietnam. This is part of the Country Strategy Paper planning process and involved colleagues from the provincial line agencies and the Vietnamese Women's Union of Thai Nguyen Quang Tri and Long An, the Ministry of Fisheries, Ministry of Foreign Affairs, Ministry of Labour, Invalids and Social Affairs, researchers from Can Tho University, the University of Agriculture and Forestry in Hue and Ho Chi Min city and Research Institutes for Aquaculture, as well as FAO, GTZ, IMA, IUCN, NORAD, UNDP and VSO.

Mr Song Ha the Communications Hub Manager co-facilitated the workshop with Communication Specialist Kath Copley. It is expected that the Country Strategy Paper for Vietnam will be published in September. A meeting will take place on 25th June in Hanoi with the SAPA Steering Committee (involving the vice-Minister of Fisheries, the Director of the International Communications Department (MOFI), the Director of the National the Fisheries Extension Centre, Director of the Research Institute for Aquaculture No.1 to follow up on the Stakeholder Workshop and to plan how to take forward the Sustainable Aquaculture for Poverty Alleviation strategy of the Government of Vietnam. The initial focus will be planning with communities together with provincial colleagues from Provincial Departments for Agriculture and Rural Development, Provincial Fisheries Departments and the Vietnamese Womens Union. This will build on the livelihood analyses conducted with communities as part of pilot capacity building activities initiated by DFID and continued by the STREAM Initiative and partners.

Regional Training Course on Grouper Hatchery Production

In May 2002, the first regional grouper hatchery production training course was organised by the Asia-Pacific Marine Finfish Aquaculture Network under the coordination of Network of Aquaculture Centers in Asia-Pacific (NACA) in cooperation with Northern Fisheries Centre, Queensland, Australia (QDPI) and Research Institute for Mariculture - Gondol. Support for the training course came from the Ministry of Marine Affairs and Fisheries, Indonesia, the Network of Aquaculture Centers in Asia-Pacific (NACA), the Australian Centre for International Agricultural Research (ACIAR), the Asia-Pacific Economic Cooperation (APEC) and the Japan International Cooperation Agency (JICA). The training course was successfully conducted in the Research Institute for Mariculture at Gondol, northern Bali, Indonesia.

A second course was successfully completed in May 2003, with 14 participants from 6 countries, and a detailed report will be provided soon. NACA has been following the 2002 participants with interest, and the news below gives an update on their progress. The report is available from the Marine Finfish Aquaculture Network website.

Post 2002 Training Developments

The outcome from the 2002 training has been impressive. Three participants reported that they had applied the techniques learnt from the training course with successful larval rearing trials upon return to their own countries, and the course appears to have stimulated further successes in Indonesia.

In Thailand, green grouper (*Epinephelus coioides*) is the only species of grouper that has been regularly produced at government hatcheries. However, in August 2002, Krabi Coastal Aquaculture Development Station of Department of Fisheries Thailand produced tiger

grouper (*E. fuscoguttatus*) seed for the first time. Approximately 9,000 fingerlings were produced at 8 cm in length, with an estimated survival rate around 1.9%. Mr. Samart Detsathits from this DOF Thailand station was funded by an APEC staff exchange program ('Collaborative APEC Grouper Research and Development Network' FWG 01/99) to attend the Gondol hatchery training and to apply the techniques learned when he returned to Thailand.

In Vietnam, green grouper fingerlings were successfully produced in June 2002. Around 100,000 fingerlings were reared and sold to fish farmers from the Cat Ba Research Centre for Mariculture of Research Institute for Aquaculture No 1 (Ministry of Fisheries Vietnam). Mr Hoang Nhat Son from the centre was funded by SUMA (Support to Brackish Water and Marine Aquaculture, a component of the DANIDA Fisheries Sector Programme Support) to participate in the Gondol grouper hatchery training.

In Malaysia, Mr Lu Kien Chee and Mr Yazid Bin Sahjnan of the Department of Fisheries Sabah reported that there were able to produce tiger grouper fingerlings (6 cm TL and above) in January 2003, and 1,200 fish were sent for grow-out trials. Mr Sanjnan was funded by the APEC staff exchange program ('Collaborative APEC Grouper Research and Development Network' FWG 01/99).

In Indonesia, Mr Jimmy Alfredo Bonilla Rivas, a private sector participant in the 2002 training course, came to pay a visit during the second training course in May 2003, and mentioned that he and Mr. Harri Saptoprabowo have seen their grouper larvae rearing techniques improved since the 2002 training course.

These success stories, following the training course, are a credit to the staff at the Research Institute for Mariculture - Gondol in Bali, Indonesia.

Review on low food chain species for marine fish culture

As part of the work of the Asia-Pacific Marine Fish Network, NACA is undertaking a review on low food chain species for marine fish culture. We are conducting the review as one potential response to concerns being raised about the use of trash fish/fish meal for feeding of carnivorous marine fish species in the region, and interest being expressed in "organic" marine fish culture.

We have used for this review definitions of the trophic status as given in Fishbase (www.fishbase.org), with low food chain species having trophic status scores of less than 3. Examining the list of present marine fish species presently cultured in the region, it appears that only milkfish (*Chanos chanos*), several spinefoot/rabbit fish species (*Siganus* spp), mullet (*Mugil* and *Liza* sp) and parrotfish (*Scarus* spp.) fit within this category. Pomfret (*Pampus argenteus*) is marginal. The rest, and majority, of the presently farmed species, are all high food chain species (although potential exists for replacement of fish meal in diets).

We are circulating this message to the network to get further information on this issue; is anyone doing research on low food chain species (apart from milkfish)? Are there some good low food chain candidate species for farming, that are not presently farmed? What is the status of breeding and rearing of Siganids, parrotfish, pomfrets and mullets? What do people feel about this issue?

We would appreciate your comments and ideas. All contributions will be acknowledged. Contact Sih Yang Sim, email sim@enaca.org or write to NACA, PO Box 1040, Kasetsart Post Office, Jatujak, Bangkok 10903, Thailand, Tel: 66-2-561-1728 (ext 115), Fax: 66-2-561-1727.

NACA/Deakin University visit to Indonesia, 2-7 April 2003

Dr Michael Phillips and Prof. Sena De Silva visited Indonesia from 2nd to 7th April 2003. The purpose of the trip was to further follow up on the preparation of an ACIAR project document on "Culture, capture conflicts: sustaining fish production and livelihoods in Indonesian reservoirs" and specifically to initiate a small study on a "Socio-economic and institutional assessment of fisheries and aquaculture management in the three reservoirs (Saguling, Jatiluhur and Cirata)". The study is designed to inform preparation of the project in ways that will lead to better management of the reservoirs.

The study details were discussed in detail with Sonny Koeshendrajana, Research Centre for Marine and Fisheries Product Processing and Socio-Economics, who will undertake the work. The objectives and workplan were discussed with Dr Koeshendrajana, and an agreement was made on the contents and to complete the study by 15th May 2003. The outcome of the study as agreed would include:

1. A description of the management responsibilities for water use, fisheries and aquaculture within the three reservoirs. Stakeholders and institutions concerned will be identified, along with their management responsibilities, and their management objectives for the three reservoirs. The assessment will cover government institutions at local, provincial and national level, and any informal institutions (eg farmers groups, or fishers groups where existing).
2. Preparation of a preliminary socio-economic profile of the fishers and aquaculture farmers in the three reservoirs, using mainly secondary information.
3. Preparation of recommendations on potential entry points for improvements in management and shifts towards integrated management (and possible co-management) of fisheries and aquaculture within the three reservoirs.

4. Preparation of a short review of the draft project document, particularly the draft objectives, outputs and institutional participation and recommendations for further development of the document to ensure the project approach leads to positive changes in reservoir management that result in sustainable development of reservoir fisheries and aquaculture (with special attention to social and economic benefits, reduction in conflicts, and environmentally sustainable development).
5. Finally, a description, with budget estimates, for a "socio-economic" component of the ACIAR project would be prepared for inclusion in the project document.

The visit included productive meetings with the Director General of Aquaculture, in Jakarta and Bogor (wrap up meeting), and various stakeholders involved in management (local government, and some management bodies) and reservoir fish production (fish farmers). It was agreed the project will focus on only two reservoirs; Jatiluhur and Cirata. Historical data on fisheries, water levels, water quality, etc would be collected prior to the start of the project for all three reservoirs though. This would enable some preliminary data analysis to be conducted before the project started and presented to a project planning workshop.

Fisheries and adaptive learning

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resources management and/or potentially interested in the adaptive learning approach, to both learn from others' experiences and to share the project's own. A communications strategy is therefore planned. One of the first activities is to canvass opinion on the usefulness and



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readability of the previous project output, the "Guidelines for Adaptive Learning".

Embracing the principle of "learning by doing", a key activity will be the implementation of the adaptive learning approach in new settings: rice-fish systems and small reservoirs in India and large reservoirs in the Lower Mekong Basin. The project will evaluate whether they have been able to increase benefits from these systems, increase their knowledge of how they work and increase the understanding of how adaptive learning approaches can be best implemented.