



Membership of NACA: An update



Photo taken after the meeting with the Minister of Marine Affairs and Fisheries, Dr Rokhmin Dahuri. Others are from left, Saut Huttagalung, Director of Planning and Cooperation Bureau of Marine Affairs and Fisheries, Dr Fatuchri Sukadi, Director General for Aquaculture; Dr Rokhmin Dahuri; NACA's Pedro Bueno; and Head of Planning and Policy of the Aquaculture Department, Agus Apun Budhiman. Saut was a member of the Technical Advisory Committee and Agus represents Indonesia in the Governing Council. He was a graduate of NACA's Senior Aquaculturist Programme, Class of 1989

Iran poised to become member

A letter dated 28 October from the Public and International Relations Department of the Iranian Fisheries Company (SHILAT) has advised NACA that the Government has approved Iran's membership and are now proceeding to sign the accession instrument to the NACA Agreement.

Iran first took part in NACA activities at the First Technical Advisory Committee Meeting held in Hat Yai, Thailand in November 1992, followed immediately by the Third Governing Council Meeting held in Hong Kong in December 1992. Then Minister of Jihad e Sezandegui, Mr Lahijanian led a delegation that

attended the Fourth GC Meeting. In turn, for better familiarity with Iranian aquaculture, SHILAT sponsored the visit in 1993 of a NACA team consisting of the GC member from India (former DDG for Fisheries of ICAR, Dr PV Dehadrai), former Coordinator Dr Banchong Tiensongrusmee, and then Information Specialist Pedro Bueno.

Cooperative activities were meanwhile launched that included training and study tour in Thailand (shrimp hatchery techniques), the Philippines (shrimp pond culture) and India (general freshwater aquaculture), arranged by NACA for Iranian fisheries personnel. Under an FAO Fishery unilateral fund project in Iran, whose CTA was former NACA Coordinator

Chen Foo Yan, experts of the NACA Regional Lead Centre in China (the Freshwater Fisheries Research Centre in Wuxi) provided expertise in carp breeding, hatchery and culture, which significantly boosted Iran's carp production. Several Iranian fishery officers have also been trained in China in Integrated Fish Farming. Subsequent missions under this UTF project for aquaculture and environment assessments were made by Michael J Phillips, NACA's Environment Specialist, as well as on mangroves by former TCEP Project Director Donald Macintosh.

While Iran was processing its membership, it had been participating in a number of regional activities of NACA including the projects under the aquatic animal health program, seaweed taxonomy, ecology and processing, environment and aquaculture sustainability study, and others. It has since 1992 taken part in all TAC and GC meetings.

Indonesia: Ministry endorses membership

Following an invitation by Indonesia's Directorate of Aquaculture, Dr Fatuchri Sukadi, to NACA, a series of meetings was held on 1-2 August between the NACA DG and the Directorate of Aquaculture, the Minister of

Marine Affairs and Fisheries and Foreign Affairs to discuss the issues related to membership. The result is that the Ministry of Marine Affairs and Fisheries has endorsed Indonesia's membership in NACA. A task force constituted by the Foreign Ministry to determine the most appropriate organizations to which Indonesia should become a member, is currently finalizing the decision. Indonesia has consistently and fully participated in NACA activities since its beginnings.

Sultanate of Oman to observe GCM

The Ministry of Agriculture and Fisheries has agreed to participate in the Council meetings as observer prior to making decisions on membership.

Secretariat of the Pacific Community

The Director General of SPC, Dr Lourdes Pangelinan, has written to the NACA Governing Council Chairman expressing SPC's intent to become Associate Member in line with the proposed amendment - which the GC 13 has taken up - and Government of Malaysia is sponsoring to the NACA Agreement to include associate membership.

NACA and FAO implements Phase II of the Asia-Pacific Regional Program on Molluscan Health Management

In 1999, FAO and NACA initiated a regional program on molluscan health management in response to the recommendations arising from the Second Workshop of the FAO/NACA/OIE Regional Program on Aquatic Animal Health Management regarding the shortage of information and knowledge about molluscan diseases in the region. The workshop considered and recognized the need to establish baseline expertise that will provide the foundation for countries to develop their own national programs for molluscan health assessment and monitoring, risk analyses and control of epizootics.

The over-all objectives of the Molluscan Health Management Program are to:

- Train national staff on techniques used in molluscan disease investigation, diagnosis and treatment
- Build expertise in molluscan disease diagnosis and research in the Asian region
- Through country-specific mollusc health survey/assessment – identifying molluscan diseases existing in, and of concern, to the Asian region
- Prepare a Manual on Molluscan Health Management for Asia-Pacific and establish a network of people with expertise in immunodiagnosics, nucleic acid assays, etc.)
- Provision of updated reference materials from support laboratories within and outside the region
- Development of formats (models) for molluscan disease diagnostics (laboratory and field), farm records, laboratory record keeping system
- Development of national strategies/mechanisms to support the Quarterly Asia-Pacific Aquatic Animal Disease Reporting System for Molluscan Disease

- Development of emergency response to molluscan disease outbreaks
- Evaluation of Asian materials available for the Molluscan Health Manual
- Development of concept for Phase III Workshop

The three phases include a training/workshop format, as follows:

- Phase I: Training Course on Basic Molluscan Health Management (Yr 1999)
- Phase II Training Workshop: Evaluation of Country-Specific Survey Results, Manual Preparation and Follow-up Training on Levels II/III Molluscan Disease Diagnosis (Yr 2002)
- Phase III: Tier II/III Follow-Up Training, Evaluation of Support and Results (Yr 2003)

Phase I was successfully completed in 1999 and a critical mass of researchers from Indonesia, Japan, Korea RO, Malaysia, Philippines, Thailand and Vietnam with upgraded capability on molluscan health was established. Phase I was supported by SEAFDEC-AQD, NIWA of New Zealand, DFO of Canada and IFREMER of France. To ensure continuity of the technical training and program of work, the programme will the same group of people during the three phases.

The second phase is planned in Australia from 29 November to 4 December 2002, in conjunction with the Fifth Symposium on Diseases in Asian Aquaculture organized by the Fish Health Section of the Asian Fisheries Society. NACA will provide part financial assistance, logistics, and organise the workshop/s with FAO and the University of Queensland, Australia and in cooperation with other

organizations/institutes from Australia (e.g., Western Australia Fisheries, Queensland Museum, Animal Biosecurity, Tasmania Primary Industry), Canada (Department of Fisheries and Oceans), France (IFREMER), New Zealand (Ministry of Agriculture, Forestry and Fisheries), and the USA (Maryland Department of Natural Resources) and the Office International des Epizooties (OIE) who are providing expert assistance. Trainers/resource experts are molluscan pathologists from Australia (R Adlard, B Lester, B Jones, S Kleeman, J Handlinger), Canada (S Bower), France (F Berthe), Korea RO (DL Choi, Kwang-Sik (Albert) Choi), New Zealand (M Hine) and USA (MB Reantaso). Participants for Phase II are from Indonesia, Japan, Korea RO, Malaysia, Philippines, Thailand and Vietnam with expressed additional participation from Australia, Indonesia, Sri Lanka and Thailand.

The objectives of Phase II include:

- Intensive examination of country histological and other preserved materials resulting from the country specific survey and other reference materials on molluscan diseases (normal and abnormal); and comparison with materials from other countries
- Discussion of country-specific data collection issues (limitations and problems encountered)
- Development of follow-up health assessment work based on results of initial country survey
- Introduction to Level III molluscan disease diagnostic techniques and discussion of needs and national/international linkages to Tier III health management capability (electron microscopy, immunodiagnosics, nucleic acid assays, etc.)

- Provision of updated reference materials from support laboratories within and outside the region
- Development of formats (models) for Molluscan Disease Diagnostics (Laboratory and Field), Farm Records, Laboratory Record Keeping System
- Development of national strategies/mechanisms to support the Quarterly Asia-Pacific Aquatic Animal Diseases reporting System for Molluscan Disease
- Development of Emergency Response to Molluscan Disease Outbreaks
- Evaluation of Asian materials available for the Molluscan Health Manual
- Development of concept for Phase III Workshop

The expected outputs are:

- Baseline data on health profile of economically significant molluscan species in the region (diseases present and important to the region)
- Baseline information on molluscan species produced in the region (including production sites, data, import/export data, spat origin, number of farms, professional and farmer organizations, facilities of molluscan health, other national players involved in molluscan health)
- Enhanced national and regional capability on standardized techniques for molluscan disease investigation, pathogen detection (laboratory and field level), disease surveillance and reporting and emergency response to disease outbreaks
- Collection of reference materials (histological slides – normal and disease, shell abnormalities and other preserved materials) which participants can take back to their countries and a complete set to be kept at designated laboratory/institute
- Model format for molluscan disease diagnostics, farm records and laboratory record keeping system
- Draft Molluscan Health Manual for the Asia-Pacific region
- Phase III Concept Proposal

Profile of Resource Experts:

Australia

Dr. Rob Adlard is Curator of Parasitology, Biodiversity Program at the Queensland Museum, Brisbane, Australia, and on the Executive Council of the Australian Society for Parasitology. Rob has been studying parasitic disease of bivalves for 10 years with a focus on diseases of Australian commercial rock oysters. He has co-supervised (with Prof Bob Lester) the doctoral studies on diseases of bivalves of Tim Anderson, Stephen Wesche and Sarah Kleeman. Rob currently holds two large grants administered by the FRDC on the scientific basis for zoning policy for notifiable pathogens of oysters and on the development of standard diagnostic procedures (molecular diagnosis) used for surveillance programs. As a parasitologist he has focussed on the characterisation of pathogens and their biology and extends his studies into parasites of fish and terrestrial wildlife.

Dr. Judith Handler is Senior Veterinary Pathologist (Aquatic Animals) with the Department of Primary Industries, Water & Environment, Tasmanian, and the Tasmanian Aquaculture and Fisheries Institute. She has 26 years experience in veterinary pathology, including 16 years with aquatic animals (predominantly fin-fish and molluscs). Her involvement in mollusc health has included health surveys, diagnostic services, and development of health surveillance programs (Pacific oysters, abalone); health certification for inter-state and international movements; and disease investigation and research. Mollusc research has included Bonamiasis of native flat oysters, early mortalities of molluscs (including herpes virus infection of clam larvae), the effect of a major oil spill on Pacific oysters, treatment and control of shell boring polychaete worms, and antibiotic use in abalone. She has been an invited lecturer in a number of professional training workshops in fin-fish and mollusc pathology.

Dr. Brian Jones is Senior Fish Pathologist at the Department of Fisheries, Government of Western Australia, Adjunct Professor of Fish Health at the Muresk Institute and Adjunct Associate Professor at Murdoch University School of Veterinary and Biomedical Sciences. Brian is author or co-author of over 80 scientific papers and technical reports and has broad international experience of both freshwater and marine shellfish aquaculture, including development of translocation protocols and risk assessments. For the past 7 years has provided a disease diagnostic and surveillance service to the aquaculture and pearl oyster industries in Western Australia. Shellfish under cultivation in the State include scallops, rock oysters, mussels, abalone and several pearl oyster species.

Dr. Sarah Kleeman is a Senior Scientific Officer at Biosecurity Australia (BA), which is part of the Commonwealth Government Department of Agriculture Fisheries Forestry - Australia, where she is working on an import risk analysis for non-viable bivalve molluscs. Sarah undertook her PhD in the development of molecular diagnostic tools for the detection of *Marteilia sydneyi*, under the supervision of Professor Bob Lester and Dr Rob Adlard, and was employed by Professor Lester as a postdoctoral researcher to investigate control methods for *Perkinsus marinus* before taking up her current position at BA.

Dr. Bob Lester is a Professor of Marine Parasitology at the University of Queensland where he teaches marine parasitology and health in aquaculture to undergraduates and postgraduates. With his former students and postdoctoral fellows, Drs Kleeman, Adlard and Wesche, he has researched *Marteilia sydneyi* and other molluscan parasites. He currently has a large grant to investigate control methods for *Perkinsus marinus* with Dr Hayward.

Canada

Dr Susan Bower, is currently a Canadian federal government employee of Fisheries and Oceans Canada at the Pacific Biological Station in Nanaimo, British

Columbia where she conducts research on diseases of shellfish. Most of her research is directed towards investigating the identity and biology of shellfish pathogens in order to identify mechanisms of prevention or control. Susan also works on designing sensitive and specific diagnostic tests for shellfish pathogens. Another initiative is directed towards the development of Canadian Shellfish Health Protection Regulations. In this endeavour, Susan has co-authored an Internet web site that presents a synopsis of infectious diseases and parasites of commercially exploited shellfish from around the world (http://www.pac.dfo-mpo.gc.ca/sci/shelldis/title_e.htm).

France

Dr. Franck Berthe is a Veterinarian specialized in microbiology. Since 1995, he has been working as a Research Scientist at the laboratory of La Tremblade, with several responsibilities. These are: (a) research on Marteiliosis, a parasitic disease of European flat oyster, *Ostrea edulis*, (b) shrimp disease diagnosis and control work in collaboration with overseas IFREMER teams of Tahiti and New-Caledonia, (c) in-charge of the Reference Laboratory for Mollusc Diseases for the OIE, and (d) a member of the Aquaculture Department Directorate in IFREMER. Franck is also a regular observer at the Fish Diseases Commission of the OIE and has been involved in organizing training courses, workshops, conferences, etc. on fish health. He has published many research articles and a regular contributor to the OIE Aquatic Animal Health Code and Manual.

Korea RO

Dr. Dong Lim Choi is a Pathologist at the National Fisheries Research and Development in Korea. Current scope of work involves monitoring diseases (bacterial, viral and parasitic diseases as well as environmental parameters) of important molluscs (oyster, mussel and pearl oyster on southern coast, manila clam on western coast, scallop on eastern coast) in Korea. The program involves (a) development of monitoring molluscan diseases; (b) development of diagnostic

methods of infectious diseases; (c) identification of causative agents of mass mortalities of cultured molluscs; and (d) development of health management of molluscs.

Dr. Kwang-Sik (Albert) Choi is Associate Professor at Cheju National University. His current research interest include: (a) reproductive physiology of marine bivalves (oysters, clams, scallops); (b) bay ecosystem modeling using oysters; (c) taxonomy of *Perkinsus* found in Korea (rRNA sequences of *Perkinsus*); (d) epizootiology of *Perkinsus* in clam population; (e) histopathology of marine bivalves including oysters, mussels, clams and scallops; (f) reproductive physiology of the Antarctic clam, *Laternula elliptica* and (g) cellular defense of the clams, *Ruditapes philippinarium*. Albert obtained his MSc and PhD at Texas A & M University.

New Zealand

Dr. Mike Hine possess BSc and PhD degrees from the University of Exeter and has worked as a (a) Scientist at Fisheries Research Division of the New Zealand Ministry of Agriculture and Fisheries, from 1970-1993, (b) Senior Fish and Shellfish Pathologist, at Department of Fisheries, Western Australian government, from 1993 - 1994, (c) Scientist, National Institute of Water and Atmospheric Research (NIWA), New Zealand, from 1995-2001. He is currently, a scientist, at National Centre for Disease Investigation, New Zealand Ministry of Agriculture and Forestry. He is currently responsible for fish and shellfish disease diagnosis, advisory role on aquatic disease issues in trade, and other international issues (OIE), nation-wide emergency disease responses, and regulation updates. Mike is a specialist in diseases of molluscs, particularly protozoan and viral diseases. Mollusc pathology, particularly cellular aspects of bivalve haemolytic defence, parasites of fishes, particularly protozoan and myxozoan infections, fish pathology, particularly cellular aspects of the inflammatory response to disease are his interests. He is an editor for the Journal of Aquaculture, Journal of Fish Diseases, Diseases of Aquatic Organisms.

A hard act to follow

NACA has to say goodbye to Dr. Melba Reantaso, the network's Aquatic Animal Health Specialist from 1999 to 2002, who has recently taken up another posting in the United States.



Melba earned her PhD at University of Tokyo and did her post-doctoral studies at Nippon Veterinary and Animal Science University in Tokyo, Japan. She subsequently worked in the Fish Health Section of the Philippine Bureau of Fisheries and Aquatic Resources (BFAR) for 20 years including on pearl oyster health before joining NACA.

While at NACA, she coordinated and was instrumental in developing the Asia-Pacific Regional Program on Aquatic Animal Health, one of NACA's most successful programs. She worked closely with Asian governments, APEC, ASEAN, FAO, OIE and SEAFDEC and other aquatic animal health institutes in Asia-Pacific developing national strategies and regional projects and policies on various aspects of responsible health management. She also initiated and is still involved with the Molluscan Health Program (see the previous article).

Melba has recently taken up a post as Aquatic Animal Research Pathologist at the Cooperative Oxford Laboratory, Maryland Department of Natural Resources in the United States where she is currently involved in an annual active targeted surveillance of *Haplosporidium nelsoni* in Chesapeake Bay. She is also

currently Secretary/Treasurer of the Fish Health Section of the Asian Fisheries Society.

On behalf of NACA I would like to thank Melba for all her dedication, persistence and sense of humour during her years of service at NACA. She will be sorely missed.

The Editor.

Message to NACA Alumni: Proposed Alumni Network

My Dear Friends,

It has been 17 years since I left the NACA Training Center in Tigbauan, Iloilo in 1985. By then, about 100 graduates have received their postgraduate degrees under the course. I was very pleased that NACA training course was able to continue for several years after I left and had produced more graduates. I am very proud of your success and of the high standard and quality of the training that you all have achieved.

Looking back, we all have fond memories. The days in classes, the laboratory work, the hatcheries, the ponds, the field surveys and the fascinating overseas tour in China, India and Thailand, the examinations, tests, quizzes, as well as the parties at my house, at the beach. All are vivid memories that cross my mind every time I think about the young men and women I had the fortune of teaching and associating with.

Since the first training in 1980, there have been at least a couple of hundreds NACA graduates actively involved in aquaculture development all over the Asia and the Pacific. Some have attained remarkable achievements in aquaculture practices, while others have made significant progress in various fields. Some became politicians and many are now leaders in fisheries and aquaculture administration and development. Several made significant progress in the academic professions, while others made headway

in international agencies, and many more. I am indeed proud of you all and would like to see the spirit of NACA continue by supporting our graduates in their present and future endeavors.

Several months ago, I met Mr. Beato Pudadera in Brunei Darussalam and was very pleased to see his achievements in shrimp farming. I also learned from him that he still maintains some linkages with our NACA graduates. I thought it might be a good idea to develop a mechanism, by which all our NACA graduates could be linked. A network of NACA graduates might be a good start and an easy way of linking them is through the Internet as it is now the most convenient and powerful tool for communication.

There are many reasons why I consider that NACA graduates should be actively in touch with each other. Over 80% of aquaculture production comes from the Asia-Pacific region and a substantial number of our graduates serve as leaders in their respective countries. The impact of NACA graduates in promoting sustainable aquaculture development should be underscored. If we are well-linked and maintain a network, we could benefit each other through exchange of information, experiences and friendship that would not only strengthen our own endeavor, but would also promote greater regional cooperation and collaboration. With the NACA spirit, all of you can work together more efficiently, reinforced by higher level of trust, better understanding and mutual support. If NACA graduates are united, all of you can make a difference.

To start with, I suggest that a Yahoo E-Forum be created so that only registered NACA graduates can interact among each other using the free Internet service provided by Yahoo. This means that we can use the e-forum for exchange of news, ideas, or anything you wish to share with the other members of the forum. After so many years, it might be a good idea to know what you are doing. Perhaps, Beato or anyone could take the lead to develop a format for the Yahoo e-forum. Should any difficulty arises, my office or the NACA office in Bangkok would be able to help out.

The second step is to get our contact addresses right. A directory of NACA graduates and past instructors would be very useful to promote networking. The NACA office in Bangkok can certainly do this job. Finally, an opportunity for a gathering could be considered and be sought. We can have a NACA forum on aquaculture as part of a regional or international conference so that most NACA graduates can come and meet. We need ample time for this. Nonetheless, if you like the idea, we could start talking about it and some bright ideas might emerge from our discussion.

These are just my initial thoughts and I believe that those who are really interested to spread and continue the spirit of NACA and would like to continue interacting with each other would find a new forum to do so.

I will be very happy to hear from you through the following contact address:

GEF/UNDP/IMO Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)

Mailing Address: P.O. Box 2502 Quezon City 1165 Philippines Telephone: (632) 920-2211; (632) 426-3849 Fax: (632) 926-9712; E-mail: chuate@pemsea.org

Best regards.

Yours truly,

Chua Thia-Eng

www.enaca.org

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(including this newsletter)

Please spread the word

Research and Technology for Farmer- and Environment-Friendly Farming of Marine Fish in the Asia-Pacific

The farming of marine fish is contributing increasingly to national economic development and livelihoods of people. There is a growing demand for marine finfish, including high value coral reef species such as groupers. For example, in 2001, Hong Kong, destination of most of the live fish traded in the region, imported an estimated 15-19,000 tons of live reef fish (caught and farmed) valued at more than US\$ 315 million. The trade in fry, fingerlings and juveniles is also flourishing. Marine fish farming has become a promising area of aquaculture. The problem, among others, is that supply of seed from wild fishery sources is either dwindling or getting more expensive to obtain. There is also a growing concern over damage to the environment and resources from over-fishing or destructive collection of seed or adults from the wild. A special concern is incorporating into research planning and technology development the priorities of farmers and then translating their results into socio-economic benefits to the industry, especially to the small farmers and their communities.

It is these concerns that were addressed in a regional technical and policy workshop held from 30 September to 4 October at the coastal city of Halong in Vietnam. Around 100 participants attended the meeting from government, scientific organizations, industry, NGO's and regional and international organizations, from Vietnam, and 11 other countries in Asia-Pacific. Participants reviewed the status, research and development needs for marine finfish aquaculture in the Asia-Pacific region and made recommendations for collaborative actions to assist the sustainable development of the industry. In practical terms, the workshop looked at effective substitutes for trash fish in feed, more economical feed, better feeding

systems and better culture systems and techniques for hatchery and grow-out, and good management practices. The workshop included a special session on the development of a set of standards for farming of coral reef fish as part of a wider Asia-Pacific initiative to develop industry standards for the live reef fish trade, a joint project of the International Marinelife Alliance (IMA), Marine Aquarium Council (MAC), and The Nature Conservancy (TNC), with the support of the APEC Fisheries Working Group.

The scientific gathering was sponsored by the Ministry of Fisheries, Vietnam, the Australian Centre for International Agricultural Research (ACIAR), the Australian Academy of Technological Sciences and Engineering, NACA and the Asia-Pacific Economic Cooperation (APEC).

Results of the regional collaborative grouper research and development network supported by APEC, NACA and the findings of an ACIAR project "Improved hatchery and grow-out technology for grouper aquaculture in the Asia-Pacific region" are being reported and will suggest further steps for research, development and policy. This ACIAR project involves the collaboration of scientists and technologists from several institutions in Australia, Indonesia, Thailand, Vietnam, and the SEAFDEC Aquaculture Department in the Philippines.

The development of sustainable hatchery systems and farming systems for groupers and other coral reef fish species, environmental management and planning for aquaculture, extension of research findings to farmers, and ways in which sustainable development of marine aquaculture can be best used to create

employment and alleviate poverty among coastal communities was also addressed by the workshop.

Speaking at the opening, Dr Nguyen Xuan Ly, head of science and technology of the Ministry of Fisheries of Vietnam, emphasized the high level of government support for marine aquaculture in Vietnam, as a means of earning income and creating employment in coastal communities. He urged further collaboration in Asia, and support from international and regional agencies such as ACIAR and APEC for sustainable development of marine aquaculture.

Mr Barney Smith, Fisheries Program Manager of ACIAR, said he was pleased to see the participation of so many young scientists in the workshop. He praised the marine finfish research and development network — coordinated since 1998 by the Network of Aquaculture Centres in Asia-Pacific, and recently adopted by its member governments into NACA's regular work program -- as an excellent example of institutional, donor and government cooperation in support of sustainable aquaculture development.

Former Deputy Prime Minister of Vietnam, Mr Nguyen Cong Than emphasized the high priority the Government of Vietnam gives on sustainable development of marine fish aquaculture. In his keynote address, Mr Than identified the importance of building skills for managing environmental impacts, the need to develop hatchery technology to avoid use of wild resources, the importance of using manufactured feed rather than wild "fish by-catch" resources, for development of marine fish culture, building skills in health management and

Continued on page 8

NACA Organises Four Training Courses and Study Tours for Bangladesh in the third quarter

Requested by the Fisheries Training and Extension Project (Phase II), the NACA Secretariat organised a **Training Study Tour to Thailand on Fisheries Extension and Small-Scale Aquaculture Development**, on 1 – 14 July 2002 for a twenty two fisheries extension officers from the Department of Fisheries, Bangladesh, with funding from DFID. The participants held discussions with their counterpart officials of the Thai Department of Fisheries concerning fisheries extension methodologies and visited active fisheries extension project sites and small-scale aquaculture farms in selected provinces the central and northeast regions and the east coast of Gulf of Thailand. The visitors were also briefed on the recent changes in government policy and practice of decentralization of agricultural extension and strengthening of local / sub-district level administration in technology transfer.

The NACA Secretariat organized a **Study Tour to Thailand and China on Inland Fishery Resource Management and Aquaculture Development**, on 8 – 22 July 2002, for a senior delegation of five officials from the IFAD Aquaculture Development Project in Bangladesh. During the study tour, the delegation exchanged views and experiences with the fisheries



Participants in the Fisheries Extension and Small-Scale Aquaculture Development training & study tour

officials in Thailand and China concerning inland open water fisheries resource management and policy incentives in promoting freshwater aquaculture development. The visitors also visited fisheries research institutions and fish farms in the two countries.

With the assistance from collaborating agencies and individuals of Thailand, Lao PDR, Cambodia and China, the NACA Secretariat conducted a four-week **Training Course on Community Participation and Aquatic Resource Management** for a group of

seven Upazilla Fisheries Officers from the Forth Fisheries Project of Bangladesh, during the period of 28 July – 26 August 2002. The training started with two weeks of classroom sessions in Bangkok with lectures, discussions and case studies covering the essential subjects and issues in community participation and aquatic resource management. Resource persons were mobilized from various institutes in Thailand, Lao PDR, Philippines, China and the STREAM Team in the training. Field trips to Thailand, Lao PDR, Cambodia and China were organized for the trainees to observe actual examples of community



Study tour to Thailand and China on Inland Fishery resource Management & Aquaculture Development



Training Course on Community Participation and Aquatic Resource Management



participation in aquatic resource management in these countries.

Assisted by the Thai Department of Fisheries, the Secretariat organized a **Study Tour on Marine Shrimp Aquaculture Technology, Management and Related Industry Development** in Thailand for the Agro-based Industries & Technology Development Project-II (ATDP-II), Bangladesh, on 2 – 12 September 2002. The participants comprised on ATDP personnel, shrimp farmers and suppliers. The team were able to meet and hold discussions with government agencies, research academies and private sector and farmer associations over the important issues concerning shrimp aquaculture industry development. Extension discussions were held in several occasions on the development and implementation Code of Conduct for shrimp industry in Thailand. Following the study tour, ATDP is now trying to develop a workable Code of Conduct for responsible and sustainable shrimp farming industry in the country.



Participants from the study tour on Marine Shrimp Aquaculture Technology, Management and Related Industry Development



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Marine finfish research & technology

Continued from page 6

market diversification as key issues to address for sustainable development of marine fish farming in Vietnam. He requested APEC, NACA and ACIAR and other agencies to provide further support for transfer of technology on seed production and advanced, environmentally friendly farming systems, to assist in building human resources, especially in technical, environmental and socio-economic skills, so that Vietnam could develop its aquaculture, and economy in general, in a sustainable manner. The same sentiments would apply to the greater Asia-Pacific region.

For more information on cooperation in marine fish aquaculture in Asia and NACA, APEC and ACIAR projects, and to find out about the outcomes of the workshop, contact grouper@enaca.org or visit the grouper web site: www.enaca.org/grouper.

The presentation slides from the workshop are now available on CD. Around 40 presentations are included in PDF format, pictured opposite. Contact the NACA Secretariat to order.

