NACA Newsletter

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The long road to recovery

Rebuilding fish cages at Koh Yao Noi, Thailand. NACA is assisting several communities in Thailand and Indonesia to rebuild their livelihoods through the Special Program in Response to Tsunami (SPIRIT).

The tsunamis of December 26 delivered a very unpleasant surprise for coastal communities throughout the Indian Ocean. While around 300,000 people were killed and millions rendered homeless or without a job, such raw statistics do little to convey the full extent of the impact on people's lives and the sheer scale of the disaster. In the short term, the critical need has been, and in many areas it still is, for emergency relief, with this assistance provided primarily by humanitarian and government agencies. For people living in hard-hit areas, making a transition back to independence is not going to happen quickly. It will take many years and it is going to be a very difficult and painful process.

This issue of the NACA Newsletter does not attempt to report on the impact of the disaster, already well covered by the media. Instead, it focuses on network activities underway in support of the recovery. NACA, in partnership with many other organizations, is working to assist coastal communities to rebuild their livelihoods, specifically those dependant on aquaculture and coastal fisheries. The network's response to date has included a combination of field-level rehabilitation projects, support to strategic planning and coordination activities for the fisheries and aquaculture sectors and provision of information services. Needless to say, this is just the start.

Special Program in Response to the Tsunami (SPIRIT)

From the first news of the tsunami NACA began to receive offers of assistance from partner organizations and colleagues from all over the world.

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Outcomes of the 16th Governing Council

The 16th NACA Governing Council was held in Los Banos, The Philippines from 20-23 March, back to back with the STREAM Workshop on Aquatic Resources and Livelihoods: Connecting Policy and People, 17-19 March (see separate article page 5). The key outcomes of the meeting included expansion of the network with the participation of new centres, expansion of the R&D program, formalisation of a special program to address post-tsunami rehabilitation activities and endorsement of the workshop statement on livelihoods approaches to aquatic resource management. The NACA Secretariat would like to thank the outgoing Chair, Mr Hettiarachchi of Sri Lanka, for his contribution in guiding NACA through 2004 and a particularly difficult end of year. We would also like to welcome The Philippines, as the new Chair for 2005. We are sure it is going to be a challenging year !

Network strengthening

Council endorsed the proposal to include the Kalardasht centre of Iran as an institute within the network. The expertise of Iran lies in coldwater aquaculture, stock enhancement, and conservation and aquatic resources management. This is derived from more than 30 years of work on sturgeon and relatively more recent but equally intensive activities with some species in the Caspian region (*Rutilus* spp, Caspian "salmon" and rainbow trout).

In this regard, Iran's aquaculture R&D centers and institutions have the potential to strengthen NACA's

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The long road to recovery

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It rapidly became obvious that a tremendous will to act and pool of expertise exists within the aquaculture community. NACA has established a special program, SPIRIT, to harness this assistance, both professional and financial, in a coordinated fashion, focussing on community development projects that will help people to rebuild their livelihoods and become self-sufficient, targeting reconstruction and development of livelihoods that are based on aquaculture, coastal fisheries and other aquatic resources. The first SPIRIT activities got underway in February with initiation of field projects in several island communities in southern Thailand, and in Aceh, Indonesia.

On the ground

Rebuilding cage aquaculture and eco-tourism at Koh Yao Noi, Thailand

One of the many coastal communities affected by the earthquake and subsequent tsunami of 26th December 2004 was Koh Yao Noi, an island off the Andaman coast of Thailand. Three fishing communities on the exposed eastern side of the island were affected, with major damage to fish farms (over 80% of cages were damaged or destroyed), fishing vessels, fishing gear and anchorages. In addition, eco-tourism - an important source of supplementary income for fishers and fish farmers - was also impacted with a 70% decline in the number of visitors to the area.

A strong coordinating mechanism exists through the "Koh Yao Noi Community Based Ecotourism Club", a local community organization whose membership, despite the name, consists largely of fishers and fish farmers, reflecting the close integration of fishing and tourism activities on the island. The club has won several awards for its activities and has a successful track record both as a uniting force and in promotion of sustainable aquatic resource management, education and income generation for its members.

In the initial aftermath of the tsunami, the first visit to the community by NACA personnel was in January as part of an FAO mission to assess damage to the fishing and aquaculture sectors of Thailand and broad needs for relief and rehabilitation. Subsequent visits were made in February to hold discussions with the community representatives regarding both general and specific rehabilitation action. The main issues raised by local people during these discussions were:

- direct damage to fishing equipment;
- the resurgence of illegal fishing practices, due to loss of legitimate fishing gear and economic hardship;
- the encroachment of fishing vessels within the 3km limit, primarily reserved for small-scale fisherman;
- theft of fish from the cages by outsiders, presumably also facing economic difficulties;
- the decline in tourists to the island, and need to raise awareness that visitors are welcome;
- the possible establishment of a "Koh Yao Noi" quality brand for locally produced seafood; and
- the lack of a communication system for natural disaster warnings.

As an immediate response to requests from several communities, NACA provided support from its 'coastal livelihoods rehabilitation fund' for the community to provide loans for villagers to repair and rebuild fish cages, source fish seed and other supplies. New cages built by the villagers will, in the future, be operated, maintained and managed as community cages. After harvest, the payment of loans will return back into the revolving community fund where it will be made available for further infrastructure and culture technology improvements. Once the cages are fully operational, NACA will provide technical assistance for farmers to implement better management practices aimed at increasing their efficiency, profitability and sustainability. Training will be provided the the DOF station in Krabi.

The strategic objective of this project is to assist the people in returning to a sustainable, self-reliant lifestyle, and to monitor and share lessons in long-term sustainable development and support for alternative livelihoods that will be useful for similar efforts in other affected coastal communities in not just southern Thailand, but throughout the region.

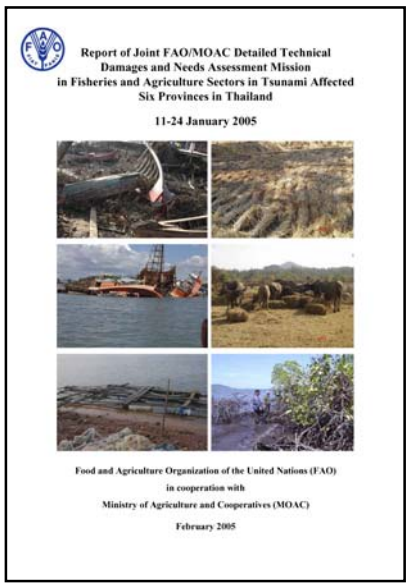
Cash for work, Aceh

On request by Indonesia's Directorate General for Aquaculture, NACA contributed start-up funds for a 'cash for work' scheme in Kemang Tanjung, employing more than 500 farmers to repair damage to coastal fish farms. There has been extensive damage to pond and canal infrastructure in terms of breached dykes, flooding and siltation, requiring excavation and repair. The World Aquaculture Society has also contributed funding to support this activity.

Assessment of tsunami impacts in Thailand and Indonesia

NACA staff participated in technical assessments of the damage to the fisheries and aquaculture sectors in both Thailand and Indonesia. The Thailand survey was carried out as part of a joint technical mission on fisheries and agriculture by the FAO and Ministry of Agriculture and Cooperatives, covering the six affected provinces along the Andaman coastline, aimed at identifying the emergency and rehabilitation needs of affected communities active in these sectors. The report of the mission is available for download from the NACA website, www.enaca.org.

The Indonesian assessment was carried out in the provinces of Aceh and North Sumatra, looking at impacts on the livelihoods of people dependent



The Thailand impact assessment can be downloaded from www.enaca.org/modules/mydownloads/viewcat.php?cid=142

on aquaculture and on the aquaculture infrastructure. NACA staff worked with national and provincial officials, as well as staff fielded by FAO and the Asian Development Bank. The assessment was performed to identify short-term priorities and medium term actions to support the recovery of this sector in this region.

Planning and coordination

Consortium to Restore Shattered Livelihoods in Tsunami-Devastated Nations

Since December 2004, NACA has been collecting and assessing information from affected coasts to inform relief and reconstruction efforts, and has begun to work with others to build effective partnerships, to coordinate efforts with other organizations, and also to collaborate on certain specific activities.

Medium to long-term rehabilitation efforts require significant planning. With so many organizations involved in the recovery at all levels there is a need for a framework for cooperation to ensure that resources are not wasted, and that efforts do not conflict or create more problems than they solve. To this end, FAO Regional Office for Asia-Pacific, WorldFish Center, Bay of Bengal Program IGO, SEAFDEC, and NACA have formed a Consortium to Restore Shattered Livelihoods in Tsunami-Devastated Nations, referred to as CONSRN. The consortium provides a flexible mechanism that allows partners to build on each others achievements, make efficient use of resources and share valuable lessons and results within the consortium as well as with external partners. Collaborating organizations that have also taken part in formative meetings or have been invited to work with the consortium include the Bangkok-based Asian Disaster Preparedness Center, SDF of Thailand, INFOFISH, AIT and the International Collective in Support of Fishworkers.

Consortium partners have agreed to concerted action to address the numerous and varied rehabilitation needs. In practical terms, action will be assured by a widely agreed consortium program, formulated by the partners, which broadly provides the guiding principles, suggests a range of strategies and describes possible approaches to respond to rebuilding needs and those of the longer-term sustainable development of livelihoods.

Regional Workshop on Rehabilitation of Fisheries and Aquaculture in Coastal Communities of tsunami affected countries in Asia

The first major activity of CONSRN was a regional workshop on Rehabilitation of Fisheries and Aquaculture in Coastal Communities of Tsunami Affected Countries in Asia, hosted by FAO in Bangkok, 28 February – 1 March. The purpose of the workshop was to build an agreed regional strategic framework and draft programme for CONSRN based on country inputs and advice from NGOs and donors. It was attended by 53 participants, including representatives from six of the tsunami-affected countries, donor agencies and NGOs.

The workshop was divided into four sessions on i) country priorities for rehabilitation; ii) the rehabilitation vision and guiding principles; iii) rehabilitation strategies and iv) aligning donors, agencies and countries to the strategies. The workshop developed a vision and guiding principles for rehabilitation of communities involved in the fisheries and aquaculture sectors, stressing the importance of "getting rehabilitation right" and the need for well-planned, inclusive processes. The goal is a rehabilitated sector free from the past mistakes and which is a substantial improvement over the pre-tsunami situation.

The workshop developed a set of guiding principles to achieve the vision, which emphasized i) putting people first in rehabilitation; ii) rehabilitating the whole production and marketing chain; and iii) rehabilitation that is consistent with international and regional agreements and guidelines. A set of rehabilitation strategies was also developed during discussions, including coverage of i) improving policy, institutions and processes; ii) providing physical assets; iii) ensuring equitable access to inputs and sustainably managed resources; iv) providing appropriate financial mechanisms; v) improving community livelihoods and responsible coastal resources management; vi) rebuilding and enhancing social assets, resources and networks upon which people in affected communities draw in pursuit of their livelihood strategies and well-being. The outcomes of the workshop will be used to develop a rehabilitation programme for CONSRN.

The detailed report of the workshop, which contains a full summary of proceedings, is available for download from the Asia-Pacific Fishery Commission website at:

http://www.apfic.org/modules/mydownloads/visit.php?cid=10&lid=28.

Outcomes of Governing Council 16

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activities in coldwater aquatic resources management. The Kalardasht Center is a state-owned hatchery that has the most advanced facilities for rainbow trout on the Southwest Caspian coast, and diverse research interests in coldwater fish species. It is a focal point of cooperation among universities, researchers and training centers, providing training services in cold-water fish farming to neighboring countries, including India and Afghanistan.

Council approved NACA's involvement as a partner in the proposed Center for Innovation in Tropical Aquaculture (CITA), a proposed collaborative centre of excellence with the purpose of increasing research capacity to enhance the growth and development of Australia's established and emerging tropical aquaculture industries. CITA will bring together key research and development institutes in Queensland to provide R&D and education support, with the core institutional group consisting of the Australian Institute of Marine Science, James Cook University, Queensland Department of Primary Industry and Fisheries and the CSIRO. There is significant opportunity for CITA to enhance linkages between Australia and the Asia-Pacific region, and NACA is seen as the preferred mechanism to facilitate exchange with centres in other countries.

R&D Program

Council endorsed the continued strengthening of assistance to member governments in managing the risks associated with aquatic alien species, including aquatic animal pathogens, within ASEAN and more broadly within the Asia-Pacific Region. The shrimp aquaculture program will be expanded, with support to develop a set of international principles for shrimp aquaculture, and with a view to improving market access for aquaculture products produced using responsible farming practices. The marine fish culture and mariculture networking will also be expanded, with participation in the network to be formalized through identification of regional resource centers and national focal points to assist in formulation of the program. Council supported further development of the new initiative on biodiversity and genetic conservation in relation to aquaculture and fisheries development as a special program of NACA, which will be closely tied to NACA's activities in inland fisheries and aquaculture.

Health

Council noted the continued developments in the region's health status as reported by the Third Meeting of the Asia Regional Advisory Group on Aquatic Animal Health (see article on page 9). These have included continuing impacts from Koi herpes virus in Indonesia and Japan, the occurrence of white tail disease in giant freshwater prawn *M. rosenbergii* in China and India, spread of taura syndrome virus in the region, the impact of monodon slow growth syndrome, problems with viral nervous necrosis and grouper iridoviral diseases, isolation of spring viremia of carp virus in China, abalone mortalities, and the need to address molluscan diseases.

The Council endorsed several proposed revisions to the regional Aquatic Animal Disease List and the Quarterly Aquatic Animal Disease reporting form, specifically the addition of "White Tail Disease (MrNV and XSV)" and other changes to conform with OIE Aquatic Code. Six institutions with specific expertise were given recognition as Regional Resource Centres for aquatic animal health. Council also endorsed the proposal to establish an emergency fund to deal with disease emergencies within the region, to facilitate rapid response to incursions and outbreaks.

Tsunami

There was considerable discussion on the impact of the tsunami and ways in which NACA could contribute to the recovery of affected communities. Council formally approved the establishment of the Special Program in Response to Impacts of the Tsunami (SPIRIT), an initiative that was established with the interim permission of the Chair shortly after the disaster. Please see the cover story for more detail on activities under SPIRIT.

Towards a framework for a Pro-Poor Regional Strategy for Sustainable Aquatic Resources Management in Asia-Pacific

NACA-STREAM welcomes the statement of understanding and recommendations from the regional *FAO/NACA-STREAM Workshop on Aquatic Resources and Livelihoods: Connecting Policy and People*, 17-19 March 2005, held in Los Baños, Laguna, Philippines, regarding livelihood approaches to aquatic resources management, which has been unanimously endorsed by NACA's 16 member countries.

The statement, which is expected to influence the direction of governmental thinking, is already adopted as the basis of NACA's 2006-2010 Research and Development Programs. It articulates a recognition that by adopting livelihoods approaches, people's needs and objectives are placed at the center of development, and recommends that livelihoods analysis and approaches are incorporated into government ways of working so that laws, policies and the way that institutions operate can better impact community development and support poverty alleviation.

The statement, which was informed by practice, as described by the heads of many government fisheries departments and national research institutes from throughout Asia-Pacific region, stresses moving beyond a policy and institutional focus on resources and technologies and highlights the benefit of increasing people's participation in efforts towards the Millennium Development Goals, implementing the Code of Conduct for Responsible Fisheries and developing national strategies for poverty reduction that recognize the importance of aquatic resources to the food security and livelihoods of poor people who fish and farm.

The workshop, which was the culmination of a Technical Co-operation Program project was chaired by the Under-Secretary for Agriculture, Government of the Philippines and built consensus on the value of livelihoods approaches in aquatic resources management and poverty alleviation. It was attended by forty four delegates from fourteen countries including heads of government fisheries and aquaculture agencies and national research institutes from across Asia-Pacific, Senior Advisors, NACA Governing Council delegates, representatives from the Secretariat of the Pacific Community, from FAO Fisheries Department, Rome and FAO RAP Bangkok, as well as STREAM National Co-ordinators, along with Communications Hub Managers and other partners.

The joint statement and a series of recommendations for national governments, intergovernmental and international organizations, highlights the role of aquatic resources in poor people's livelihoods and the need to invest in a shared understanding of the context of people's lives beyond the resource or technical focus, in order to formulate appropriate policies and laws and implement effective service provision.

As we work toward Millennium Development Goals – and in the context of the Code of Conduct for Responsible Fisheries and National Strategies for Poverty Reduction – we recognize the limits on aquatic resources and the importance of their management to the food security of poor and disadvantaged fishers and farmers.

The workshop statement:

In order to better identify poor people and understand the contexts of their lives and how they use aquatic resources, to understand their needs and objectives, and the role of local culture and indigenous knowledge, a comprehensive and broader approach is needed, that goes beyond a focus on resources and technology alone.

A *livelihoods approach* involves learning about the resources that people can command, the choices they make, and the circumstances of their livelihoods. The livelihoods approach means putting people at the center of development planning in aquatic resources management.

Livelihoods analysis is a systematic yet flexible approach to understanding situations, access to resources, vulnerabilities and influences. It makes use of participatory approaches for learning from individuals and groups within communities. This often means that the people involved in livelihoods analysis work may need to take on new roles.

Participation and shared understandings of all stakeholder groups are made possible through a livelihoods approach, which builds community capacity, develops trust and encourages ownership. This approach minimizes adverse impacts and reduces conflicts during changes to community development policy, the introduction of co-management and the consideration of options for people's livelihoods. These approaches can be a bridge between communities and policy-makers and can also play useful roles in the assessment of the impact of decision-making processes and policies on people. Therefore, policy development should not only depend on technical knowledge about aquatic resources management. It requires government investment and interventions in planning and implementing fair and equitable development strategies based on information about poor people in communities.

The full statement, recommendations and further information about the workshop are available for download from the STREAM website:

http://www.streaminitiative.org/pdf-news/StatementSTREAMFAOTCP.pdf

Artificial propagation of indigenous fish species in Sarawak, Malaysia

Artificial propagation of the indigenous species semah, *Tor douroensis* and empurau, *T. tambroides* in Sarawak, Malaysia, commenced in April 2001 funded by the State Government of Sarawak (Inland Fisheries Division, Department of Agriculture). The project was initiated due to a lack of success in artificially propagating these two most important species using captive pond reared broodstock, in spite of attempts by local researchers for over a decade.

Netting Tor fingerlings.

The Sarawak Government approached Professor Sena De Silva of Deakin University in Australia for assistance, when the project came into being. Over the last three years a team comprising researchers from Australia (Prof. Sena De Silva, Dr. Brett Ingram, Geoff Gooley) together with the help of local personnel, Stephen Sungan and David Tinggi, assisted by Sih Yang Sim of NACA, conducted research that was finally successful in induced breeding of empurau and semah, using broodstock maintained in ponds for over eight years. The captive breeding of these two indigenous species has now become almost routine. In order to develop a proper broodstock management strategy for the two species a genetic component was introduced in February 2004, the work being conducted by Dr. Thuy Nguyen, a Research Associate coordinating NACA's program on genetics and biodiversity.

Left to right: Dr Thuy Nguyen and Prof. Sena De Silva with the Minister for Industrial Development, George Chan and Mr. Joseph Wei How Kiong, Head of the Inland Fisheries Division.

NACA was represented at the negotiation on Phase 2 of the project, Artificial Propagation of Indigenous Fish Species in Sarawak, Malaysia, by Dr Thuy Nguyen and Sih Yang Sim, Research Associate and focal point for training and information of the Regional Marine Finfish R & D Network. The negotiations were finalised during the discussions with Mr. Tan Sri Datuk Amar, Deputy Chief Minister and Minister for Modernization of Agriculture, and Dr. George Chan, Minister for Industrial Development, Sarawak, and officials of the Inland Fisheries Division of the Department of Agriculture in November 2004. The project has been accepted and the second phase has now commenced. NACA personnel will be working on aspects of genetic diversity of *T. duoronensis* and *T. tambroides*, to develop a broodstock management program and a conservation strategy for the wild stocks of these two species. In addition, NACA personnel will also be involved in the improvement of

larviculture, nursing of fingerlings and grow-out stages of the two species.

NACA looks forward to strengthening this link with Sarawak Government and Deakin University. The program is a rare example in which the development of the culture of indigenous species has been linked, from the very beginning, with a conservation strategy.

Opposite: The usual suspects (from left to right: Sih Yang Sim, Thuy Nguyen, Brett Ingram, Sena De Silva, Geoff Gooley, David Tinggi and Stephen Sungan.

Inauguration of the National Advisory Committee of Aquatic Animal Health (NACAAH) of Viet Nam

As reported in the previous issue "A committee to manage fish health in Viet Nam", Viet Nam has developed a National Advisory Committee of Aquatic Animal Health (NACAAH) in an effort to better manage aquatic animal health issues. The establishment of the committee received great support from NACA and the DANIDA-funded SUMA project (Support to Brackish Water and Marine Aquaculture). This is an update on the progress of the committee.

Participants in the inauguration meeting for NACAAH.

The decision for the establishment of the Committee was approved by the Minister of Fisheries of Viet Nam, Mr. Ta Quang Ngoc and officially issued on 17 March, 2005. The decision clearly stated that the main function of the Committee is to advise the Minister of Fisheries (MOFI) on aquatic animal health related issues. The committee will also support the Minister in outlining development strategies, controlling the use of chemicals and veterinary drugs, managing environmental surveillance activities and in settling relevant commercial disputes. The committee consists of 18 members from government departments, universities and the private sector. The Chairman of the committee is Dr. Nguyen Xuan Ly – Director of the Department of Science and Technology, MOFI. He is also in charge of setting the regulations on the organization and activities of the Committee and for submitting them to the Minister for approval. Different technical units under the Committee will also be assigned on a needs basis.

The committee was inaugurated on 5 April, 2005 soon after the workshop on *Penaeus vannamei* farming. The first meeting is expected to take place on 6-7 May 2005 when the first steps towards the development of a harmonized national strategy for aquatic animal health management will be initiated. For further information, please contact Flavio Corsin at: flavio.corsin@enaca.org.

Supporting Viet Nam to make an informed decision towards *Penaeus vannamei* farming

Although diversification of aquaculture species is the development direction of Viet Nam, the shrimp farming industry there is still dominated by *Penaeus monodon* culture, in spite of the rapid expansion of *P. vannamei* elsewhere in the region. However, with growing interest by the private and government sector alike, Viet Nam decided to review its policy towards *P. vannamei* culture. To be able to make an informed decision on the matter, the Ministry of Fisheries (MOFI) requested the support of NACA and of the Danida-funded SUMA project (Support to Brackish Water and Marine Aquaculture) to provide the necessary expertise at a workshop, where the issue would be discussed in depth by national and international experts.

A workshop on *P. vannamei* in Viet Nam was therefore held in Hanoi on the 4th and 5th of April 2005. This was organized by the National Fisheries Quality Assurance and Veterinary Directorate (NAFIQAVED), under MOFI, SUMA and NACA.

About 170 people participated in the workshop, with 150 national attendees from MOFI, provincial administrations, research institutes, universities and experts from the SUMA and Support to Freshwater Aquaculture (SUFA) components. Many international experts also attended to relay experiences in *P. vannamei* culture in other countries, including Prof. Timothy Flegel (Mahidol University, Thailand), Dr. Simon Funge-Smith (FAO RAP), Dr. C.V. Mohan (NACA), Dr. Flavio Corsin (NACA), Dr. Matthew Briggs, Dr. Celia Lavilla-Pitogo (SEAFDEC), Mr. Sudari Pawiro (INFOFISH), Dr. John Hambrey (Hambrey Consulting), Mr. Jesper Lund (SUMA), Mr. Chen Shuping (INFOYU, China), Mr. Siri Ekmaharaj (Tookwinas) (Department of Fisheries, Thailand), Mr. Slamet Subyakto (Brackishwater Aquaculture Development Center, Indonesia), Mr. Mazuki bin Hashim (Department of Fisheries, Malaysia) and Mr. Leonardo Mariduena (Ecuador).

The workshop was opened by Dr. Nguyen Viet Thang, Vice-Minister of Fisheries. The opening was followed by 14 presentations by international experts, who brought to participants an overview of *P. vannamei* culture in in the Asian region and elsewhere in the world, as well as presenting their own views on the matter. The presentations covered many different aspects of *P. vannamei* farming, including animal health, environmental impact and marketing and socio-economic issues.

National participants also presented nine reports on the present status of *P. vannamei* culture in Vietnam, which is allowed only in companies holding a license, and on the opinion of national experts on shrimp farming. On the second day the delegates were divided into three groups with three different discussion topics: (1) Biological issues concerning *P. vannamei* seed production and farming; (2) health and environmental issues; (3) socio-economic and marketing issues.

Most of the international participants felt strongly that *P. vannamei* culture should be halted because of the low market price and high competition for markets; potential environmental impact in areas densely populated by shrimp farms (e.g. Mekong delta); shrimp health risks and the difficulties to manage them in spite of the advantages posed by the possibility to produce Specific Pathogen Free broodstock and seed. On the Vietnamese participants' side, some major shrimp farming provinces (e.g. Khanh Hoa) also expressed their intention to ban *P. vannamei* culture.

Vice-Minister Nguyen Viet Thang summarized the main points of the workshop with emphasis on the need for further investigation and research so as to find the best solution for *P. vannamei* farming issues in Viet Nam. For the forseeable future, *P. monodon* will still be the major shrimp farming species of Viet Nam. MOFI however will allow *P. vannamei* to be experimentally cultured with strict control of broodstock, seed quality and diseases in the farming area from Binh Thuan to Quang Ninh provinces (central and northern Viet Nam). *P. vannamei* production will not be allowed in the Mekong delta yet. However, this decision might be reviewed if positive results are shown from culturing this species in central and northern provinces.

The Deputy Minister also stressed that the criteria for *P. vannamei* broodstock and seed production and testing procedures would be developed soon and that the support, cooperation and contribution of international and national participants/organizations were highly appreciated.

For further information, please contact Flavio Corsin at: flavio.corsin@enaca.org

Health group calls for improved surveillance and reporting

The third meeting of the Asia Regional Advisory Group on Aquatic Animal Health (AG) was held at the NACA Headquarters, Bangkok, Thailand on 23-25 November 2004. The 10-member Advisory Group, constituted by NACA, in cooperation with the Office International des Epizooties (the World Organization of Animal Health, or 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 Pacific.

During the three-day meeting, the AG addressed key aquatic animal health issues in Asia, including regional disease reporting systems, emerging aquatic animal disease problems (emphasizing white tail disease in *Macrobrachium rosenbergii,* monodon slow growth syndrome, taura syndrome, infection with koi herpes virus 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 Asian aquatic animal health management. Some of the key points discussed and recommendations made on emerging disease problems and regional reporting are summarized below.

Crustacean Diseases

The AG expressed concerns on the risks associated with live crustacean introductions and on the possibilities of pathogen exchange/movement between species (e.g. *P. monodon* to *P. vannamei* and vice versa). This is especially important owing to the poor information available on exotic pathogens and the impact of exotic pathogens on native crustacean species. Considering the possibilities of pathogen exchange/movement between species, AG strongly recommended that before importation, farmers/governments should make sure that none of the known pathogens are present and co-habitation tests be included during quarantine to ensure that unknown viral pathogens will not cause disease in important local crustacean species

Monodon Slow Growth Syndrome (MSGS) is associated with significant economic loss in Thailand alone and it may already be present in other countries (e.g. Malaysia). A viral pathogen is possibly involved although known pathogens appear not to be involved. Although the information available so far is not conclusive, if MSGS is associated with an infectious agent, movement of *P. monodon* broodstock and post larvae (PL) might cause problems in other countries. Since no robust diagnostic test is available, MSGS will not be listed in the regional Quarterly Aquatic Animal Disease (QAAD) reporting list at this time. The AG emphasized the need to increase awareness on MSGS in the region. National Coordinators (NCs) are advised to strengthen surveillance and collect information on the occurrence of MSGS. An information sheet on MSGS has been developed and made available on NACA website and disseminated to NCs to increase awareness. Information sheets on various diseases may be downloaded from www.enaca.org/health.

Taura syndrome virus (TSV) is a new exotic shrimp virus in Asia now reported from *Penaeus vannamei* in China PR, Indonesia, Thailand and Vietnam. 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 in which it occurs. The AG expressed serious concern about TSV in the region especially because the pathogen is spreading and changing genetically. This could conceivably lead to changes in virulence, not only to *P. vannamei* but also to local crustacean species. Species other than *P. vannamei* (e.g. *P. monodon*, *P. japonicus*, *Macrobrachium rosenbergii*) can also be infected and, although no impact has been observed at the pond level, *P. monodon* infected by injection show 10-20% mortality. National Coordinators are advised to promote testing for TSV not only in *P. vannamei* but also in indigenous species of crustaceans.

White Body Disease in *P. monodon* is the biggest single disease problem in *P. monodon* hatcheries in Vietnam, but very little is known on its causes. NACA is in the process of developing an information sheet for this disease to raise awareness on the problem and collect further information on its occurrence and impact. National Coordinators were urged to increase vigilance and report it under 'any other diseases of importance' with epidemiological comments.

The AG expressed concerns regarding infectious hypodermal and haematopoietic necrosis virus (IHHNV), which has become a problem for *P. vannamei* farming in the region. Considering the large scale movement and culture of *P. vannamei*, the AG stressed the need for increased vigilance on exotic pathogens like baculovirus penaei (BP) and infectious myonecrosis virus (IMNV). National Coordinators in countries with *P. vannamei* culture should encourage testing for IHHNV and increase

surveillance for other exotic pathogens.

White Tail Disease (WTD) in *Macrobrachium rosenbergii* is emerging as a serious problem in the region. Two viruses, *Macrobrachium rosenbergii* nodavirus (MrNA) and extra small virus (XSV) have been found to be associated with the problem. The role of MrNV and XSV is not yet clear, although it appears that XSV, a satellite virus dependent on MrNA for RNA polymerase activity, may sometimes interact with a different RNA virus. Noting the economic impact and potential for the disease to spread, the AG recommended to include "White tail disease (MrNV and XSV)" under non-OIE listed crustacean diseases relevant to the region on the Regional Disease List. National Coordinators in countries with susceptible species are advised to promote surveillance for WTD.

Finfish diseases

The AG expressed serious concern about the spread of Koi Herpes Virus (KHV) within Japan and Indonesia and its potential impact on common carp and koi carp industry in the region. Considering that both "koi mass mortality" and "infection with koi herpes virus" are already listed in the QAAD, the AG recommended removing "koi mass mortality" from the QAAD list. The AG considered that level I diagnosis for "infection with KHV" would include koi mass mortality. National Coordinators in countries or regions with susceptible species are advised to increase vigilance for KHV. A comprehensive disease card on "infection with koi herpes virus" has been posted on the NACA website and disseminated widely in the region to assist in this matter.

Underestimated bacterial diseases like streptococcosis (*Streptococcus iniae* and *S. difficilis*), nocardosis (*Nocardia seriolae*) and infection with *Tenacibaculum maritimum* are believed to be associated with serious losses in finfish culture in the region and their significance for human health is often poorly known. Considering the impact, the AG recommended to consider inclusion of bacterial diseases in the QAAD during the next AGM-4 meeting and advised NCs to collect information on these diseases and report it under any other diseases of importance with epidemiological comments.

Mollusc diseases

Little attention has so far been given to molluscan diseases in the region, although serious losses are known to be occurring. The AG emphasized the need for further information on mollusc disease and called for increased efforts to better understand this problem and improve reporting of molluscan diseases. Abalone die offs in PR China and in Taiwan, Province of China are causes of concern. The occurrence of abalone mortalities, while generally accepted as being widespread, is not being officially reported, although "abalone viral mortality" is listed in the QAAD list from 2004. Considering the movement of abalone brood stock and seed in the region, and the potential impact of spread of abalone viral mortality, the AG recommended further investigations on this problem and advised NCs to increase surveillance.

The FAO/NACA/OIE regional Quarterly Aquatic Animal Disease reporting system came into effect from the 3rd quarter of 1998. Until December 2004, a total of 24 reports have been published. The quality of reports and epidemiological comments provided by countries has improved significantly over the years. The AG appreciated this improvement and emphasized the need to further strengthen such regional reporting for a number of reasons such as:

- the scope is not only to report to OIE;
- it is especially relevant to the region;
- fisheries authorities, and not only livestock authorities, are involved in the reporting;
- regional reporting has promoted national reporting in some countries;
- diseases of regional importance are covered even if they are not listed by the OIE;
- it creates awareness of aquatic animal health problems and serves as an early warning system for other countries;
- it highlights the need for capacity building and for prioritization of resources, as well as supporting strategy development; and
- it has significantly contributed to the improvement of disease reporting in the region.

Changes to the QAAD reporting form

The list of diseases in the QAAD reporting form are revised annually to conform with changes to the OIE Aquatic Animal Health Code and to reflect the aquatic animal disease situation in the region. The AG approved the following revisions to the QAAD list, with the new reporting form effective from the first quarter of 2005:

i) Adding "White Tail Disease (MrNV & XSV)" of *Macrobrachium rosenbergii* to the list of diseases prevalent in the region under non OIE-listed crustacean diseases relevant to the region;
ii) Moving "Necrotizing hepatopancreatitis" from under OIE-listed crustacean diseases relevant to the region to non OIE-listed crustacean diseases relevant to the region; and
iii) Removing "koi mass mortality" from the QAAD list under unknown diseases of serious nature, in view of the listing of "infection with koi herpes virus" in 2003.

The full report of the meeting can be downloaded from:

http://www.enaca.org/modules/mydownloads/visit.php?cid=154&lid=667

Training and study tours in Q1 2005

Freshwater prawn and marine shrimp hatchery and seed production, Thailand

Mr. M. K. Chattopadhyay, Project Director, OSSPARC, Marine Product Export Development Authority (MPEDA), India, attended a study visit to Thailand on freshwater prawn and marine shrimp hatchery and seed production, 26-27 February. He spent one day in Suphanburi Province, the largest freshwater prawn producer in Thailand. He visited Kaset Sunboon Prawn Hatchery, a large-scale hatchery owned by Chareon Pokaphan Foods Company Ltd. (CPF), and Wangkudaen Prawn Hatchery, a medium-size hatchery owned by a family. The day's programme ended with a detour to visit to the prawn wholesale market in Ayuthaya, north of Bangkok. The next day, Mr. Chattopadhyay visited Chacheongsao and Chonburi Provinces, northeast to Bangkok. This area is an important marine shrimp production base in the country. Hatcheries visited included Sorattanachai Farm and Hatchery in Bang Pakong, Chacheongsao, which produces *P. monodon* and *P. vannamei* nauplii and PL. The hatchery sells nauplii to other hatcheries who do not keep brood stock but nurture nauplii bought to PL size for sale to grow-out farmers. Mr Chattopadhyay was also exposed to other specialized farms, such as the Nathong Farm, which mass produces algae *Chaetocerose*, *Skeletonima* and *Spirulina* in Bang Pakong, and the Booma Farm producing rotifer and *Artemia*, in Chonburi. These farms sell their produce to shrimp hatcheries.

High-level delegation from Bangladesh visit China, Thailand

The NACA Secretariat hosted a visit by a high-level delegation from Bangladesh on 28 February, during their study visit to China and Thailand on fisheries and aquaculture planning and policy development. The delegation consisted of six members of the Parliamentary Standing Committee on Ministry of Fisheries & Livestock (Mr. Haji Md. Mozammel Haque, Chairman, Mr. Md. Nurul Huda, Mr. Dhirendra Nath Saha, Prof. Shahisul Islam, Mr. Mahmudul Haque, Mr. Shamsuddin Ahmed), the Secretary (Mr. Iqbal Uddin Ahmed Chowdury) and Deputy Secretary (Mrs. Mavis Jesmin) of the Ministry of Fisheries and Livestock, the Director General of Department of Fisheries (Mr. Md. Nasir Uddin Ahmed) and the Director of Fourth Fisheries Project (Mr. Md. Shariful Islam Akanda).

Marine shrimp aquaculture industry development, Thailand

Funded by FAO in Madagascar, the NACA Secretariat organized a study tour to Thailand for two Malagasy aquaculture personnel, 28 February – 12 March: Ms Harilala Rahantalisoa, the Coordinator of Aquaculture Development Project of Ministry of Agriculture, Livestock and Fisheries, and Mr. Rakotomala Hobiarivelo, a tilapia farmer. The visitors were exposed to important aspects of marine shrimp aquaculture industry development in Thailand. They visited and held discussions with various institutions involved in planning and policy, product quality control and food safety assurance, disease control and health management. They also visited shrimp hatcheries, grow-out farms, farmer club and business firms in distribution and processing. At later part, the delegates visited research institutes and farms working on hatchery and grow-out of freshwater fish species in Thailand.

Fisheries & aquatic resource management, China

Under the Global Environment Facility (GEF) component of the Fourth Fisheries Project of Bangladesh, twelve fisheries officials participated in a study tour to China on fisheries aquatic resource management 7-19 March. The study tour organization was locally assisted by Shanghai Fisheries University, the Freshwater Fisheries Research Centre and the National Fisheries Extension Centre. The delegation was lead by Mr. Md. Nazrul Islam, Director for Inland Fisheries. Others in the team included Mr. Md. Rafiqul Islam, Mr. A.K.M Saiful Islam Chowdhury, Mr. Md. Manir Hossain, Mr. Md. Abdul Khaleque, Mr. Giasuddin Khan, Ms. Begum Anwari, Mr. Khandaker Akhteruzzaman, Mr. Md. Serajul Karim, Mr. Md. Shahid Ullah Bhuiyan, Mr. M. Shahajat Ali and Ms. Nasima Sultana.

Participants in the study tour on fisheries and aquatic resource management, China.

Aquaculture development planning and environmental impact assessment

The NACA Secretariat organized a study tour to Thailand and the Philippines on aquaculture development planning and environment impact assessment, 24 March – 4 April, for the Fourth Fisheries Project of Bangladesh. The study tour team had a series of discussions with their counterpart officials in charge if planning and environment monitoring and assessment in Thailand and the Philippines following presentations by the hosts. They also visited selected aquaculture development sites with varying degree of success in planning and environment monitoring. Twelve officials took part in the study tour including three from the Ministry of Fisheries and Livestock (Mr. Nasimul Ghani, Joint Secretary, Mr. Md. Sobir Ahammed, Deputy Secretary, and Ms. Tahmida Ahmed, Senior Assistant Secretary) and nine from the Department of Fisheries (Mr. Md. Anisur Rahman Bhuiyan, Ms. Ferdous Parveen, Mr. Md. Abdul Mannan Mian, Mr. Rokibuddin Biswas, Mr. Md. Shamsuzzaman, Mr. Atiqullah Khan, Mr. Md. Iqbal Hossain, Mr. Chandra Kumar Chakma and Mr. Md. Murshidul Hossain).

Participants in the aquaculture development planning and EIS study tour to the Phlippines.

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NACA is a network composed of 16 member governments in the Asia-Pacific Region.

The NACA Newsletter is sent free of charge to governments, libraries, development agencies and other interested parties on request.

TVR "Ramu" Pillay (1921-2005)

Ramu Pillay, the motivator and strategist of modern aquaculture, passed away in his hometown of Bangalore, India on 9 February. Deliverance and peace came at 1910 hours on the Lunar New Year, his year.

We share the grief of his family and relatives. We offer our comfort and join them in their prayers.

Ramu worked hard for aquaculture, with creativity and passion, from 1947 until his passing away (he had just finished the second revision of one of his books on aquaculture), a fruitful career that spanned more than half a century and straddled two millennia, influenced many others' professional careers, strengthened several regional and national institutions in Africa, Asia, the Americas, and Europe, and

improved the welfare of rural people through better farming of fish.

NACA is a part of the global aquaculture development that Ramu Pillay had envisioned. He helped to guide NACA to be able to play a modest part in that vision.

We bid him goodbye and thank him for his legacy to NACA and to aquaculture.

As small recompense to the enormous effort he poured and dedicated to aquaculture development we have prepared a tribute to him in collaboration with many of his friends. The tribute Remembering TVR "Ramu" Pillay weaves his career with the evolution and development of modern aquaculture. It is available in the January-March 2005 issue of Aquaculture Asia, and on the NACA website, www.enaca.org.

The NACA Organization.