



## Iranian officers train in advanced marine shrimp farming and meet Iraqi delegation at NACA

18 technical officers from the Iranian Fisheries Organizations (Shilat) have visited Thailand for an intensive two-week training course in advanced marine shrimp farming, from 5 to 20 November, and met with an Iraqi aquaculture delegation at NACA.

The course included ten days of classroom lectures, discussions and case study analysis taught by internationally recognised experts in shrimp health and farming systems, including Khun Pornlerd Chanratchakool, Professor Tim Flegel and Dr Charlor Limsuwan.

The course covered:

- Shrimp culture systems.
- Pond environments and preparation.
- Water and feed management.
- Shrimp product quality, food safety and inspection.
- Record keeping to aid decision making.
- Health management and disease diagnosis.
- Farm management and business risk management.
- Hatchery management.
- Assessment of postlarval quality and handling.
- Environmental management for intensive shrimp farming.
- Seawater irrigation and drainage systems.
- Overview of issues and problems in the Thai shrimp farming industry.
- International Principles for Sustainable Shrimp Farming.

Participants also spent 10 days on the road to observe different aspects of the Thai shrimp farming practices. Participants visited farms and hatcheries to discuss culture practices; government institutions and research stations involved in health monitoring, inspection and certification of product; shrimp wholesale markets; processing facilities;



*Left to right: Dr Basim J. Hussain from the General Board of Fish Resources Development, Iraq Ministry of Agriculture; Prof. Sena De Silva, Director General of NACA; and Mr Omid Reza Asghari, Head of Nutrition and Live Food, Aquaculture Department, Iranian Fisheries Organization, and team leader for the Iranian delegation.*

and feed producing companies. Discussions were also held with local shrimp farmer clubs. As our Iranian friends prepared to depart a five-member delegation arrived from Iraq, as part of a three-week visit to study freshwater aquaculture in Thailand and China.

NACA would like to thank the staff of the Thai Department of Fisheries, the resource persons and other people that made this training course possible.

See the following page for a group photo of participants.

## Green award recognises NACA work on shrimp farming

On November 8, 2006, the Consortium Program on "Shrimp Farming and the Environment" received a World Bank Green Award for their efforts towards responsible shrimp farming and the recent release of "International principles for responsible shrimp farming".

The Annual Green Award was instituted in 2001 by the World Bank's Environment Sector Board to recognize leadership and personal commitment among Country Directors and Task Teams to environmental sustainability and success in assisting World Bank client countries to integrate environment into development programs.

The Shrimp Farming and the Environment Consortium was formed in 1999 as a partnership between NACA, the World Bank, Food and Agriculture Organization of the United Nations, the World Wildlife Fund and recently the United Nations Environment Programme/GPA. The objective of this global program was to identify issues around shrimp farming and broadly advise on better management of the shrimp farming sector. The Consortium conducted a wide range of case studies and multiple stakeholder consultations involving governments, private sector, academia and NGO's totaling over 100 researchers in 20 countries over the past 6 years. One outcome from the Consortium Program is the International Principles for Responsible Shrimp Farming, recently welcomed at the FAO Committee on Fisheries Sub-Committee on Aquaculture in September 2006, as an overarching international framework for improving the sustainability of the shrimp farming industry.

The World Bank Green Award for the Consortium Program is a recognition of the work of many stakeholders who have collaborated over the past few years to develop and implement a common vision for better management of the aquaculture sector. The program has focused on shrimp farming to date but, following recommendations from

FAO Sub-committee on Aquaculture, the scope of this collaborative work is expected to expand in future to include a wider range of aquaculture commodities and farming systems.

The staff of NACA would like to thank Dr Michael Phillips for his substantial efforts and contributions to the Consortium.

### International Principles for Responsible Shrimp Farming now available in Spanish

The International Principles for Responsible Shrimp Farming has been translated into Spanish and is available for download at the link below. The principles document is currently being translated into several other languages and they will be available in the publication section of the NACA website in due course.

#### Español:

*Los Principios Internacionales para el Cultivo Responsable de Camarón han sido desarrollados por el Consorcio sobre Cultivo de Camarón y el Ambiente, el cual consiste de la Organización de las Naciones Unidas*

Principios Internacionales para el Cultivo Responsable de Camarón

2006



*para la Agricultura y la Alimentación (FAO), la Red de Centros de Acuicultura en Asia y el Pacífico (NACA), el Programa Global de Acción para la Protección del Ambiente Marino frente a Actividades Realizadas en Tierra del Programa de las Naciones Unidas para el Medio Ambiente (UNEP/GPA), el Banco Mundial (WB) y el Fondo Mundial para la Vida Silvestre (WWF).*

<http://www.enaca.org/modules/wfdownloads/singlefile.php?cid=142&lid=762>

### The combined delegations from Iran and Iraq together with NACA staff (from previous page).



## Building capacity on aquatic animal epidemiology in I.R. Iran

The recent outbreak of white spot disease which affected Bushehr, the largest shrimp producing province of I.R. Iran, has prompted the Iranian government to tackle capacity building on aquatic animal health management. Through its Aquatic Animal Health Programme, NACA has been supporting capacity building for development of strategies to effectively control the impact of aquatic animal diseases. As part of these efforts, a training course on Aquatic Epidemiology was conducted in Bushehr province from 16-19 September 2006. The training course was supported by the Iranian Fisheries Research Organization (IFRO) and was delivered by Dr Flavio Corsin of NACA, who is also a Regional Resource Expert in Aquatic Epidemiology.

The course was attended by 14 participants. These were staff from seven IFRO offices located across I.R. Iran and two offices of the Iranian Veterinary Organization (IVO) in Tehran and Bushehr.

After a brief introduction on what epidemiology is and how it can help to answer important questions for the management of aquatic animal diseases, the trainees used real life examples to learn how to design, implement and analyse epidemiological studies. The participants were also given a chance to strengthen their knowledge and put it into practice by



*Participants in the training course on aquatic animal epidemiology.*

working as a group. As part of this activity the preliminary design of two epidemiological studies was conducted. These studies were aimed at:

- Identifying the prevalence of monodon baculovirus (MBV) in shrimp hatcheries in I.R. Iran.
- Identifying the effect of introducing mechanisms to lower water temperature and increase DO on the occurrence of mortality and streptococcosis in rainbow trout farms.

The active participation and enthusiasm of the trainees made the training course a real success, leading IFRO and IVO to request NACA for several follow up activities including a second, more advanced, training course on aquatic epidemiology and support for the development of epidemiological studies aimed at controlling diseases in shrimp and marine, coldwater and warmwater fish.

## NACA Fisheries Team meets with new Governor of Aceh

NACA Fisheries Implementation Specialist, Dr Musri Musman, of the NACA Fisheries Team in Aceh, met with the new Governor-elect of Aceh, Irwandi Yusuf and Vice Governor, Mohammad Nazar. Dr Musri joined Mr Pieter Smidt, Head and other senior staff of the Asian Development Bank Project Management Office/Extended Mission in Sumatra, to brief the recently elected Governor and Vice Governor on the fisheries and agriculture components of the ADB Earthquake and Tsunami Emergency Support Project (ETESP).



*Governor-elect Irwandi Yusuf (left), with Mr Pieter Smidt (Head of ADB PMO/EMS), Dr Musri Musman (NACA team) and Richard Beresford (ADB)*

*Continued on page 48.*

# Aquaculture Certification:

## Programme to implement the COFI Sub-Committee on Aquaculture recommendation

Concerns over food safety and the environmental and social sustainability of aquaculture production have, over the years, lead to attempts to respond to public perceptions and market requirements. Food safety standards have been elevated and international trade regulations tightened. Policy and regulations governing environmental sustainability have been put in place in many countries, requiring aquaculture producers to comply with more stringent environmental mitigation and protection measures. In some countries these changes were initiated by the aquaculture sector itself, usually within the more organized private industry sector to ensure its sustainability and to protect operations from poorly managed activities. The private sector has made significant advances in the management of its activities and there are many examples of improved management of farming systems that have reduced environmental impacts and improved efficiency, including profitability.

Owing to the need for responding to these environmental and consumer concerns on aquaculture production and in order to secure better market access, there is increasing interest in certification of aquaculture production systems, practices, processes and products. Many markets increasingly recognize that some form of certification is a way of assuring buyers, retailers, and consumers that fishery products are safe to consume and originate from responsibly managed aquaculture farms or capture fisheries. Certification programmes have been underway in capture fisheries for some time and guidelines for eco-labelling of capture fishery products were developed by FAO in 2005. Efforts are also being made to develop eco-labelling guidelines for inland fisheries.

In several countries, aquaculture producers are introducing environmental certification of aquaculture products, either individually or in a coordinated manner, in order to credibly demonstrate that their production practices are non-polluting and/or non-ecologically threatening. Some countries are attempting to introduce state-mediated certification procedures to certify that aquaculture products are safe to



*A sample of the many fisheries product certification schemes that exist. Harmonization is an issue, particularly for small-scale producers.*

consume and farmed in accordance with certain environmental standards. Most of the work done on improved management has been on salmon and shrimp, mainly due to their high commodity value and the importance attached as the most internationally traded products.

Within the context of the application of the Code of Conduct for Responsible Fisheries (CCRF), the FAO Committee on Fisheries Sub-Committee on Aquaculture (COFI/SCA) requested FAO to organise Expert Workshops to make recommendations regarding the development of harmonised shrimp farming standards and review certification procedures for global acceptance and transparency, which will also assist in elaborating norms and reviewing the diverse options and relative benefits of these approaches. In this regard, the Sub-Committee encouraged FAO to play a lead role in facilitating the development of guidelines which could be considered when national and regional aquaculture standards are developed. Several members of the Sub-Committee as well as a number of inter-governmental organizations offered to cooperate at national, regional and international level, and requested

FAO to provide a platform for such collaboration. The Sub-Committee also requested setting up of an expert group on reviewing certification of shrimp farming systems. An Expert Workshop on "Guidelines for Aquaculture Certification", as recommended by the COFI Sub-Committee on Aquaculture will be held in Bangkok from 27-30 March 2007. The Bangkok Expert Workshop will be hosted by the Government of Thailand. It will be conducted as a joint FAO/DOF-Thailand/NACA Expert Workshop. The workshop is the first in a series of workshops/consultations as needed to prepare the international guidelines for the certification of aquaculture products. This initial workshop, being hosted in Asia, will have a strong emphasis on aquaculture products from Asian aquaculture producers. Further workshops are planned for Brazil during July 2007, and possibly elsewhere with the intention of bringing together global consensus on the guidelines and to address other issues and needs around aquaculture certification. Further background is provided in a separate Concept Note available at [www.enaca.org/certification](http://www.enaca.org/certification). The programme secretariat invite you to send your comments and views on aquaculture certification to [certification@enaca.org](mailto:certification@enaca.org).

## Current Developments in the Aquaculture Feed Industry

*Proceedings of the Asian Aquafeeds Seminar, 12-13 April 2005, Kuala Lumpur, Malaysia.*

*Editors: Wing-Keong Ng and Chee-Kiat Ng*

*223 pages, ISBN 983-99563-8-8.*

This book is a compilation of invited papers presented at the inaugural Asian Aquafeeds 2005 regional seminar held in Kuala Lumpur, Malaysia.

The aquafeed manufacturing industry is widely recognized as one of the fastest expanding agricultural industries in the world. With Asia accounting for more than 90% of global aquaculture production, this publication presents a comprehensive analysis of some of the current issues facing the Asian aquafeed industry and its contribution to the rapidly growing global aquaculture industry. The information contained within the pages of this book will add a small but important piece to the huge puzzle of how the global aquafeed industry works and the challenges and opportunities it provides for industry players. They consist of topics such as:

- Concepts in aquafeed formulation and feeding management.
- Alternatives to fishmeal and fish oil in aquafeeds.
- Twin screw extrusion technology.
- Current issues such as traceability, replacement of trash fish in caged marine fish culture, the establishment of an Asian Aquafeed Network, new FAO initiatives ; and
- Comprehensive reviews on the status and developments in aquafeed production in some Asian countries.

These technical proceedings provide a valuable reference for fish and shrimp feed manufacturers, nutritionists, feed mill operators, feed milling and processing equipment suppliers, feed ingredients suppliers as well as researchers, aquaculture producers, entrepreneurs and policy makers.

Purchasing a copy: RM 35.00 for local orders and US \$15.00 for orders outside Malaysia; excluding postage and handling charges. Payment by crossed cheque or bank draft should be made payable to the Malaysian Fisheries Society.



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## Global Advances in the Ecology and Management of Golden Apple Snails

*Edited by Dr. Ravindra C. Joshi and Dr. Leocadio S. Sebastian.*

Here in one publication is all information so far known about golden apple snails (GAS) and the rice systems and countries they have afflicted. Around 500 pages of information are devoted

to this species that continue to expand their distribution. With this complete publication, the knowledge vacuum on the ecology and management of GAS will be filled. Some 24 chapters cover various aspects of snail taxonomy (traditional as well as molecular tools), impacts of GAS on aquatic ecosystems and farmers' health, and pesticide abuse/misuse. Even GAS-invaded countries have submitted their separate country reports. Further, some chapters are dedicated to the utilization of GAS as food and as natural paddy weeder, with some information available on the biorational approach in its management and control. The publication ensures comprehensive reference on the topic, written by experts around the world for the benefit of all researchers, students, and various organizations and libraries who need information on the subject. 600 pages, hardbound.

*ISBN 978-971-9081-31-9*

*Price: Developed countries US\$102,  
Developing countries US\$52.*

## NACA Mission to Myanmar

NACA's Director General and R&D Programme Manager undertook a visit to Myanmar in December 2006 to explore possible areas of support to the emerging aquaculture sector. Based on the discussion, a number of areas of support to Myanmar were identified and activities will be initiated on these within the first half of 2007. The specific initial areas of support will include:

- A mission by an expert in grouper hatchery techniques to visit the coastal hatchery at Kyun Su Township in Myeik to make an assessment of its suitability to be used as a grouper hatchery and to make relevant recommendations in this regard to the Department of Fisheries (DOF).
- A mission by a mollusc expert to the Rakhine area to assess and determine the feasibility of introducing mollusc culture of suitable species into the area.
- Arrangement of a study tour for a group of farmers practicing crab fattening / soft shell crab production to two countries in the region, with additional support for two DOF officials to accompany the group.
- Funding of a fish nutrition expert to visit Myanmar and assess the range of farm made feeds used in freshwater fish culture, assess nutritional quality of the feeds and recommend suitable improvements. This expert will work in conjunction with nutritional specialists in the DOF.
- Seeking funding in conjunction with the FAO for expert inputs into two workshops on Good Aquaculture Practices for shrimp and freshwater fish, to be held in Yangon in the second half of 2007. In this regard, NACA has already made arrangements to translate the "International Principles for Responsible Shrimp Farming" into Myanmar language, which will be used as one of the key resource materials for the workshop.
- Support two young people to study Masters Degree in the areas of fish health and application of genetics in broodstock management.

It was also apparent that Myanmar is going through some rapid changes in inland aquaculture, particularly in response to the market demand for carp species such as *Labeo rohita* and *Catla catla* in the Middle East. These new developments are driving changes in culture techniques and systems and are in turn impacting on local consumers. These effects will soon be reported in an article in Aquaculture Asia Magazine.

## Workshop on insurance in aquaculture to be held in Bali, May 2007

The small scale farming sector hardly benefits from insurance coverage. Recent surveys, studies and forums all show that aquaculture insurance services do not reach the small-scale aquaculturists.

Taking cue from the findings of the Regional Conference on Insurance and Credit for Sustainable Fisheries Development in Asia, Tokyo November 1996, the Review of the Current State of World Aquaculture Insurance, the 10th Aquaculture Insurance and Risk Management Conference, Spain April 2006, and the FAO report "Livestock and Aquaculture Insurance in Developing Countries", FAO, NACA and the Asia-Pacific Rural and Agricultural Credit Association or APRACA have agreed to hold a workshop on the Promotion of Aquaculture Insurance in Asia. It will be organized in cooperation with the Government of Indonesia's Directorate General of Aquaculture and is scheduled for 30 April-2 May in Bali, Indonesia.

Participants have been invited from governments, the insurance industry, credit institutions and aquaculturists and their organizations, as well as from development assistance agencies. The Bali workshop aims to:

1. Raise awareness among policy makers of the positive aspects and limitations of insurance as a risk management tool for the sustainable development of the sector as well as awareness of other risk management tools such as safe and remunerative savings and deposit facilities at banks or credit cooperatives that might, in some instances, be more attractive and provide better alternatives for small-scale aquaculturists.
2. Present the aquaculture sector to the insurance industry and illustrate its potential as a profitable segment to insurers in search of new markets.
3. Discuss ways and means to support aquaculture management and development through the introduction of insurance as an additional risk management tool. Under this objective, two issues will be tackled:
  - i) The constraints of establishing insurance programmes such as high administration costs for the insurance companies due to small and dispersed farmers and poor infrastructure and limited ability of fish farmers to pay premiums; and
  - ii) how insurance can contribute to improving livelihoods.
4. Arrive at a consensus with regard to guidelines for insurance in support of aquaculture development in Asia and what such guidelines should include.

The prospectus and draft program of the Workshop are available for download. Inquiries may also be sent to raymon.vananrooy@fao.org or to NACA at: pedro.bueno@enaca.org.

## Catfish 2007 Vietnam

An international technical and trade conference on catfish will be held from 12-14 June 2007 in Ho Chi Minh City, Vietnam, in conjunction with VIETFISH 2007, 14-16 June 2006. The conference is aimed at industry players, policy makers and planners, farmers and export-processors, imports, investors and suppliers of inputs and services.

The catfish has emerged as a bright new star in the international seafood industry in the last few years. This first ever comprehensive business-oriented international conference on the commodity will take a close look at the interesting developments that are taking place in the industry. Among topics that will be discussed are:

- Production and trade trends.
- Status in various producers countries and regions.
- Recent developments and trends in major markets
- The "catfish wars" and their effects.
- New products and marketing strategies.
- Technological developments and issues.
- Environmental aspects and sustainability.
- Prospects for the future.
- And many, many more.

The meeting is organized by FAO-GLOBEFISH, VASEP, the Ministry of Fisheries of Vietnam, INFOFISH and NACA.

## Tilapia 2007 Kuala Lumpur

An international technical and trade conference and exposition on tilapia will be held from 23-25 August 2007 in Kuala Lumpur, Malaysia. The meeting will provide an important forum for industry leaders, policy makers and planners, aquaculturists and producers, export-processors and importers, investors and suppliers of inputs and services.

Significant developments have taken place in the global tilapia industry since 2001 when the first comprehensive, business-oriented international technical and trade conference on the species was held. Production of farmed tilapia increased by more than 40% from 1.27 million mt in 2000 to 1.82 million mt in 2004. Meanwhile, landings from capture fisheries rose modestly from 0.68 million mt to 0.72 million mt in the same period. The total production from both capture and culture thus rose from 1.95 million mt to 2.54 million mt, an increase of 30% within a period of just five years.

Total farmed production in 2004 alone was estimated to be worth US\$ 2.2 billion, up 30% from five years earlier. Major developments have taken place in the form of growing domestic and international markets, introduction of a wide range of value added products, expansion of farming and advances in culture technology. All these, and more, will be discussed in depth at TILAPIA 2007 KUALA LUMPUR, the much awaited follow-up to the 2001 event. The conference will be accompanied by a trade exhibition featuring companies involved in growing, processing and marketing tilapia and providing various inputs and services to the industry. The conference is being co-organized by INFOFISH and NACA. For more information, please contact the conference secretariat.

### Further information:

For further information on both conferences please contact the conference secretariat at: INFOFISH, 1st Floor, Wisma PKNS, Jalan Raja Laut, P.O. Box 10899, 50728 Kuala Lumpur, Malaysia, Tel: (603)- 26914466, Fax: (603)- 26916804, E-mail: infish@po.jaring.my; or visit [www.infofish.org](http://www.infofish.org).



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### NACA Fisheries Team meets with New Governor of Aceh

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The meeting was highly positive with strong interest in the support for livelihood recovery being provided by ETESP, with the Governor-elect showing special interest in aquaculture and fisheries activities. NACA is contracted by ADB to support implementation of the Fisheries Component of ETESP and looks forward to working with the new Governor and his team in this new phase in the development of the province of Nanggroe Aceh Darussalam.