



## Better management practices for catfish aquaculture released

'Better Management Practices for Catfish Aquaculture' Version 3.0 was released at a national workshop in Long Xuyen City, An Giang Province, Vietnam on 24 November. These improved farming practices are the culmination of a three-year project investigating catfish farming practices in the Mekong Delta, funded by AusAID under the auspices of the program Collaboration for Agriculture and Rural Development (CARD), and conducted in partnership between NACA, the Research Institute for Aquaculture No. 2, Can Tho University, the Victorian Department of Primary Industries and catfish farmers in the Mekong Delta.

Speaking at the workshop, NACA's Director General, Prof. Sena De Silva, said that Vietnamese catfish aquaculture is the most productive farming sector in the world and has put Vietnamese aquaculture firmly on the global map. 'More than one million tonnes of fish are produced from an area of less than 10,000 hectares in the Mekong Delta. The industry provides around 180,000 jobs and generates more than US\$ 1 billion in foreign exchange for the country', he said.

Catfish farming is highly intensive. The industry average yield in the delta exceeds 400 tonnes per hectare per crop, with farmers producing two crops per year. However, the profit margin is slim and farmers need to produce high volumes to survive. In this business, a few cents per kilo can make the difference between making a huge profit or a huge loss. 'But we have to understand that we cannot continue to intensify indefinitely', Prof. De Silva said.

Other aquaculture industries, notably shrimp farming, have undergone a classic boom-bust cycle at early stages of their development. An initial period of industry experimentation and intensification is often followed by a collapse and a period of readjustment when the production system is pushed too far. By 2008 the average yield in the catfish industry had already reached spectacular levels and downwards price pressure was becoming evident. NACA and its partners therefore began work on developing science-based better management practices for catfish farming. This was a forward-looking initiative to improve the efficiency of the sector and also to identify and forestall any potential problems before they emerged. 'Some of the problems facing the sector are real', said Prof. De Silva, displaying some negative articles from international newspapers, 'but some such as these are fiction circulated in the media by international competitors. This research will help the market distinguish fact from fiction'.

The project began by conducting a survey of industry management practices in May 2008 targeting hatcheries, nurseries and grow-out farms. Project staff visited a total of



*Vice Minister for Agriculture & Rural Development, Madam Thu.*

97 producers conducting detailed interviews. The survey data were analysed for indications of how variations in management practices may influence production outcomes. A risk assessment was conducted to identify areas of particular concern and opportunities for improvement. Based on this data, the project team developed draft better management practices which were evaluated by farmers at two consultative workshops in Dong Thap and Can Tho provinces in October 2009. After incorporating the feedback of producers, farm trials were conducted by volunteers on eleven farms in four provinces in the delta to assess their effectiveness. 'These improved practices have been developed through a science-based approach with direct involvement of farmers at every stage', said Prof. De Silva.

The project culminated in a final national workshop in Long Xuyen City 23-24 November to discuss the project findings with key stakeholders including farmers, policy makers and extension specialists related to the catfish sector. The workshop finalised the better management practices after considering an analysis of the on-farm trials and discussing the performance improvements. Key findings of the farm

trials, presented by Can Tho University's Dr Bui Minh Tam, included a reduction in FCR, improved water quality, reduced incidence of disease and an increased profit margin.

The Long Xyuen workshop was asked to evaluate the impact of the project and the better management practices for catfish farming. Participants were asked to vote on a series of questions presented on screen at the meeting by Ian Dreher, DPI Victoria. 46 participants cast their votes using small wireless voting machines about the size of a credit card, which allowed them to select from a number of options displayed on the screen. Votes were automatically tallied live by software and the results displayed graphically on screen. The results included:

- 66% of participants believed that implementation of BMPs had improved financial returns for farmers. Production volume had not necessarily increased but 91% believed that BMPs had reduced production costs.
- 91% of participants thought that BMP implementation had improved environmental management, including sludgement management (84%) wastewater disposal (81%) and chemical useage (81%).
- 77% believed that BMP implementation was increasing support from buyers and processors.
- 85% felt that farmers using BMPs were likely to progress to certification of their product in future, suggesting a complementary rather than competitive relationship between BMPs and certification.



Wireless voting machine used by workshop participants to evaluate the project and BMPs.



Farmer volunteers participating in the BMP trials are awarded certificates by the Vice Minister for Agriculture and Rural Development and Director General of NACA.



*Participants in the Long Xuyen workshop.*

'I want to make it clear that these BMPs are not the final story', Prof. De Silva said. 'They are simply the first step in improving catfish aquaculture practices and will evolve over time as the industry develops and the state of knowledge improves'. He stressed that the BMPs are 'not certification standards, although the approach is fully compatible with standards-based certification systems'.

Better management practices have proven to be very successful in the Indian shrimp farming industry, where NACA has been assisting the industry to develop improved science-based farming practices for around ten years. Mr N.R. Umesh, Director of India's National Centre for Sustainable Aquaculture gave a presentation on the key role that farmer groups have played in the implementation of BMPs.

'The formation of farmer societies has enabled small-scale farmers to coordinate water abstraction and discharge, stocking and harvesting, health management and other issues relevant to better management practices. Common infrastructure development has been made possible through these societies such as the provision of electricity to their farms. Farmers have been able to eliminate middlemen such as seed, loan and purchase agents because the society has enough market power to arrange contracts directly with hatcheries, banks and processors on behalf of the members', he said. 'They are able to set requirements in terms of how seed is produced and screened in order to assure its health status. They also now have access to policy makers'.

Mr Umesh noted that farmer societies are helping producers to meet market requirements. 'The society provides a mechanism for registering farms, improving food safety and traceability, social and environmental sustainability. It also facilitates certification, because the society can apply for certification and auditing as a group rather than each farmer having to apply individually. We are seeing increasing interest in BMP product from sustainability-conscious buyers'.

The formation of farmer societies/clusters had also improved market access for small-scale producers. 'Brand building for the produce is very important', he said. 'The societies have established a quality label and pool sales to jointly promote

their produce. Linkages with buyers have been established. The societies also help members to identify market trends and adapt quickly'.

There was general consensus at the Long Xuyen workshop that formation of catfish farmer societies based around local farm clusters would be a key strategy to promote industry adoption and implementation of the better management practices. Speaking at the meeting, Madam Nguyen Thi Xuan Thu, Vice Minister for Agriculture and Rural Development said 'Small farmers need to band together and work together to achieve better products through implementation of BMPs. The Government of Vietnam will provide support to promote the widespread adoption of BMPs in the future'. A proposal to establish an institution geared towards helping the industry adopt better management practices was favourably received by participants, and is slated for consideration by the Ministry.

The workshop strongly requested a second phase of the project be developed focusing on industry adoption and implementation of better management practices. NACA and its partners have undertaken to develop a proposal in consultation with industry and government and to seek further funding in this regard.

The third edition of the BMPs are available for download from the NACA website at:

<http://www.enaca.org/modules/wfdownloads/singlefile.php?cid=193&lid=1023>

For more information about the project and its outputs, please visit the project webpage at [http://www.enaca.org/modules/inlandprojects/index.php?content\\_id=1](http://www.enaca.org/modules/inlandprojects/index.php?content_id=1).

## 9th Meeting of the Asia Regional Advisory Group on Aquatic Animal Health

The 9th Meeting of the Regional Advisory Group on Aquatic Animal Health (AG) was held on 8-10 November 2010 at Maruay Garden Hotel, Bangkok, Thailand. It was attended by 10 experts representing the World Organisation for Animal Health (OIE), Aquatic Animal Health Standards Commission of OIE, Food and Agriculture Organization of the United Nations (FAO), SEAFDEC, aquatic animal health experts from Thailand, Australia and the private sector (Intervet, Singapore), and NACA Secretariat. One co-opted member from Inland Aquatic Animal Health Research Institute (IAAHRI) also attended the meeting.

Current concerns and issues on aquatic animal health as well as on biosecurity and other health-related issues were discussed during the three-day meeting. These include progress reports from NACA and other partner agencies (OIE, FAO, SEAFDEC AQD, DAFF Australia, and IAAHRI Thailand), updates of aquatic animal diseases in the region, status of disease reporting in the Asia-Pacific, the list of diseases for QAAD reporting in 2011, status of WAHIS online reporting,

certifications and standards related to aquatic animal health, and revision of the scope and terms of reference of AG. One of the recommendations that need immediate action was the current threat of Infectious Myonecrosis Virus (IMNV) currently affecting cultured *Penaeus vannamei* in Indonesia. One regional workshop on emergency preparedness to deal with IMNV threat in Asia Pacific and one-page Disease Advisory are planned for implementation/publication at the soonest possible time.

The AG, established in 2001 by the Governing Council of NACA, provides advice to NACA members in the Asia-Pacific region on aquatic animal health management. Recommendations of the AG provide guidance to governments in coordinating the implementation of aquatic animal health management strategies. The detailed report with recommendations will be circulated to Competent Authorities and National Coordinators/Aquatic Focal points in Asia Pacific and made available on NACA website in due course.

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## Trialling ocean temperature forecasts for fish farms

Marine scientists are trialling the first near-shore water temperature forecasts to assist Australia's aquaculture farm managers contending with rising ocean temperatures.

While land farmers have used seasonal forecasting for nearly a decade, marine farmers in south-east Australia have sought the technology for a region identified as a climate change hotspot, with rates of ocean warming up to four times the global average.

CSIRO Climate Adaptation Flagship scientist, Dr Alistair Hobday, said the project, funded through the Fisheries Research and Development Corporation, is a response to requests by Tasmania's four major salmon companies for short-term ocean forecasts for their farm sites.

"Marine farms in this region, particularly south-east Tasmania, want to use all available resources to ensure proper planning and response measures are in place to combat against the warmer summer months which can have adverse effects on fish performance," Dr Hobday said.

"While adaptation to long-term change is seen as important by the sector, dealing with climate variability exacerbated by ongoing climate change is a more immediate need.

"Our objective is to provide marine farmers with forecasts at their salmon farming sites up to four months ahead. This will enable management to consider a number of responses that will help maintain industry profitability in an uncertain environment. It should also help this valuable industry to come to terms with long-term climate change and begin formulating adaptation strategies."

Valued at \$380 million annually, salmon production is one of Australia's major seafood industries.

The work will be detailed in Melbourne during the CCRSPI (National Climate Change Research Strategy for Primary Industries) Conference 2011.

The trials began in September last year, with forecasts provided to Tasmania's four major salmon farmers each month. Historical data back to 1990 and a seasonal ocean-atmosphere model developed by the Bureau of Meteorology are being used in the predictions.

An associated cost-benefit analysis of the predictions applied to each site also will be generated. The project involves trialling advanced statistical techniques to determine how well scientists can resolve the variations at the different time scales.

Dr Hobday said warm summers can significantly impact farm production through an increase in operational expenses and direct impacts on salmon, while cool winters slow growth in salmon.

He said validation of the forecasts using historical data is improving their accuracy and illustrating the likely benefits to the industry.

## Global Conference on Aquaculture 2010: Publications

Dear Participants

On behalf of the Organising Committee we wish to express our sincere thanks for your active participation in the Global Conference on Aquaculture 2010, held in Phuket, Thailand, 22-25 September. We wish to keep you updated of the follow up activities from the conference so that you are able to access the vast amount of information that was generated by the conference:

- Audio recordings of the keynote addresses, plenary lectures, invited guest lectures and presentations of the thematic sessions and the discussions thereof are now available for download / online streaming from the NACA website at: <http://www.enaca.org/modules/aqua2010>.
- The Organising Committee has also decided to make handouts of the unedited power point presentations available for download in PDF format. We request that any material you may use from these presentations be cited as per the citation format suggested in the covering page. These are also available from the link above.
- The edited manuscripts for each of the reviews and presentations made at the conference will be published in both hard copy and electronic form. This will take some time, so please bear with us, but it is our intention to have this task completed in early-mid 2011. Participants in the conference will receive a printed copy free of charge when it becomes available.
- The publications arising from the conference will include: i) one that will include the regional and global aquaculture reviews, and ii) one that will include all the keynote addresses, plenary speakers, presentations and invited lectures, and (iii) the Phuket Consensus and the recommendations of the conference.
- Please feel free to contact us if you have any suggestions or observations on improving the dissemination of the material from the conference. Once again we would like to thank you for joining us in Phuket and participating in this important landmark meeting in the development of aquaculture.



FAO/NACA/DoF Thailand

## Capacity of small holder ASEAN aquaculture farmers for competitive and sustainable aquaculture strengthened

The ASEAN Foundation supported project Strengthening capacity of small holder ASEAN aquaculture farmers for competitive and sustainable aquaculture has been successfully implemented by NACA in five ASEAN countries. The project was conducted between May 2008 and August 2010 in Cambodia, Indonesia, Philippines, Thailand and Vietnam. It assisted ASEAN small scale aquaculture farmers improve their livelihoods by being competitive in markets and improving farm management practices to deliver quality and sustainably produced aquaculture products.

The project accomplished the following key results:

- Capacity building needs of small scale farmers along five commodity market chains identified (Cambodia-Snakeheads, Indonesia-Grouper, Philippines-Seaweeds,

Thailand-Tilapia and Vietnam-Shrimp), assessment report completed and disseminated to relevant national stakeholders.

- Considering the findings of capacity building needs, training of trainers (TOT) manual developed with special focus on development and implementation of better management practices, business skills, competitiveness and farmer group organization and functioning.
- TOT conducted and 18 master trainers from 5 ASEAN countries equipped with skills and necessary information to conduct national commodity specific farmer training programs.

- Five sets of draft commodity specific farmer training manuals (FTM) for small-scale farmers developed with special focus on better management practices (BMP), development of business skills and the mechanics of organizing and managing farmers' associations/groups.
- Farmer training programs conducted in 5 countries by national teams for 5 commodities to strengthen the capacity of farmers to organize and operate effectively self-help groups and adopt better management practices.
- Final regional workshop conducted to share lessons from the methodologies and results with other ASEAN countries.
- Recommendations from the workshop discussed and placed before the ASEAN Fisheries Working Group.

In summary, the project enabled better understanding of key capacity building needs of small-scale aquaculture for competitiveness along five commodity market chains, increased awareness and capacity of small farmers in group approach and BMP adoption, helped build capacity of servicing institutions, developed farmer training material, built awareness and capacity of small holder farmers and shared the lessons learned with all ASEAN countries. The project has helped to promote the concept of responsible and sustainable aquaculture in ASEAN. The lessons learned and experience gained strongly suggest that adoption of BMPs through group or cluster management approach is the gateway to ensuring sustainability of small scale aquaculture and meeting modern day market challenges and opportunities. The project has increased awareness about the concept of BMPs and cluster management in ASEAN. The momentum created needs to be sustained and where possible integrated with the national activities so that the project outputs are sustained. The project results and lessons learned will be relevant for future regional programs and national initiatives. The project results can be used by ASEAN governments and regional organisations (e.g. NACA, SEAFDEC, ASEAN, ASWGF) to widely promote the concept of BMP adoption through cluster/group management approach in the Asia Pacific region. Considering the various issues identified, lessons learned

and feedback obtained by different stakeholders at various stages during the project implementation, the following key recommendations are provided from the project:

- National governments should be encouraged to develop supportive policies and strategies for setting up of farmer groups/organisations so as to ensure empowerment of small scale farmers through collective action.
- National governments should be encouraged to support small scale farmers (farmer groups/clusters) to implement BMPs to comply with mandatory and voluntary standards so as to promote responsible and sustainable aquaculture.
- Regional organisations (e.g. NACA, SEAFDEC, ASWGF and ASEAN Secretariat) should consider providing necessary platform and facilitation mechanism for strengthening the capacity of small holder ASEAN farmers to remain competitive and sustainable.
- A regional project supporting farmer group formation in ASEAN members and linking to major markets should be initiated as a follow up to the present project.
- National demonstration sites of farmers group with good BMPs adoption should be set up for creating wider awareness and scaling up the models at the national level.
- Exchange visits for farmer group across countries should be organised to share experiences.
- Other commodities of ASEAN importance should be identified and more explicit BMPs covering the entire supply chain developed.
- Attempts should be made to develop cluster/group certification systems (focused on food safety and sustainable aquaculture) in ASEAN to support small scale farmers.
- Commodity specific FTM developed under the project should be printed in English and other ASEAN languages and disseminated widely in the region.



**Network of  
Aquaculture  
Centres in  
Asia-Pacific**

#### Mailing address

PO Box 1040,  
Kasetsart University Post Office  
Ladyao, Jatujak,  
Bangkok 10903  
Thailand

Phone +66 (2) 561 1728

Fax +66 (2) 561 1727

Email: [info@enaca.org](mailto:info@enaca.org)

Website: [www.enaca.org](http://www.enaca.org)

NACA is a network composed of  
18 member governments in the  
Asia-Pacific region.



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- As a long term goal, attempts should be made to establish ASEAN Fish Farmers Regional Network Forum to exchange experience and develop regional network.

All the project outputs are available for free download from NACA website. For further details about the project and possible collaborations please visit the project webpage at:

[http://www.enaca.org/modules/bmpprojects/index.php?content\\_id=13](http://www.enaca.org/modules/bmpprojects/index.php?content_id=13)