NACA Newsletter

Published by the Network of Aquaculture Centres in Asia-Pacific, Bangkok, Thailand

ISSN 0115-8503

Volume XXV, No. 3
July-September 2010

Vietnamese catfish – better management practices update

A number of farmers have volunteered to trial the draft better management practices (BMPs) developed by the catfish BMP project, for the purpose of evaluation and demonstration. The draft BMPs were developed following extensive surveys of industry practice and stakeholder meetings convened by the project team in October 2009 in Cao Lanh City, Dong Thap Province (Chaired by Provincial Agricultural Office and the Director RIA 2, Dr. Nguyen Van Hao), and in Can Tho City (Chaired by Professor Nguyen Than Phuong).

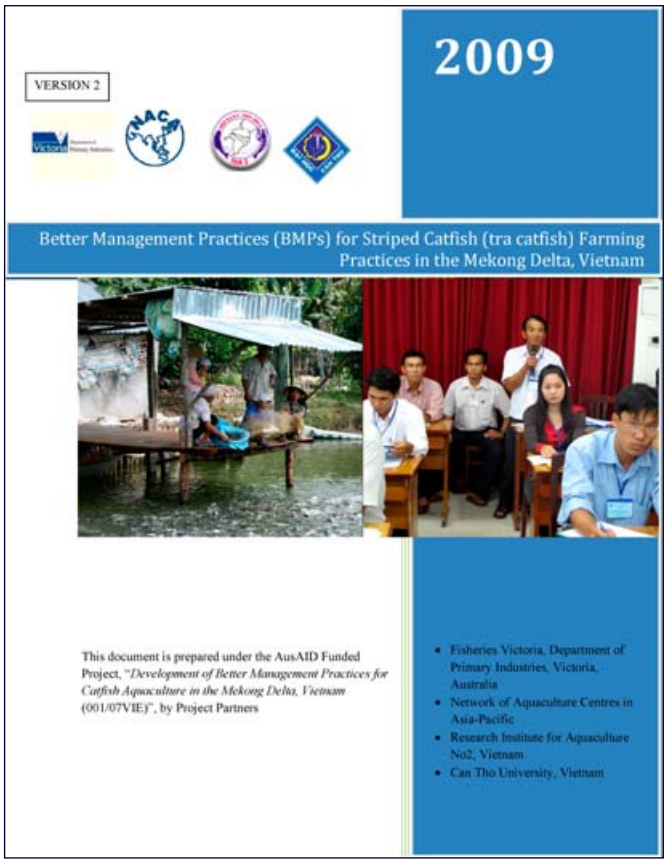
Eleven 'BMP demonstration farms' have been setup in partnership between farmers and the project team and are about three months into the six-month production cycle. These include seven grow out farms (three in Can Tho, one each in An Giang, Hau Giang, Vinh Long and Dong Thap), three nurseries (two in Dong Thap, one in Can Tho) and on hatchery in An Giang.

In addition, extension material on BMPs and the advantages of a cooperative approach to farm management amongst locally clustered farms have been prepared and distributed. Overall there has been a very good response from farmers with clusters being organised in certain communities. An evaluation of the effectiveness of the BMPs as part of the demonstration farm trials is being undertaken by the project team in collaboration with the Department of Resource Management and Geography, Melbourne University, Australia. The evaluation will focus on Can Tho and An Giang provinces, with specific emphasis on economic, environmental and social impacts of BMP implementation as part of the demonstration trials.

In the mean time, the findings from the project's field studies and associated surveys which led to the formulation of the draft BMPs are being published in peer reviewed scientific journals, thereby subjecting the collated information on the catfish farming sector in Vietnam to the scrutiny of the scientific world. It is expected that these publications will have a bearing on the subsequent development of certification standards for the sector by a wide range of independent organisations, and thereby enabling a more pragmatic approach to be adopted. The publications generated by the project to date are:

- De Silva, S.S., Ingram, B.A., Phuong T. Nguyen, Bui Tam T., Gooley, G.J., Turchini, G.M., 2010. Estimation of nitrogen and phosphorus in effluent from the striped catfish farming sector in the Mekong Delta, Vietnam. Ambio.

- Bui, Tam M., Phan, Lam T., Ingram, B.A., Nguyen, Thuy T.T., Gooley, G. J., Nguyen, Hao V., Nguyen Phuong V., De Silva, ,S. S., 2010. Seed production practices of striped catfish, *Pangasianodon hypophthalmus* in the Mekong Delta region, Vietnam. Aquaculture (in press).



- Phan Lam T., Bui Tam M., Nguyen Thuy T.T., Gooley Geoff J., Ingram Brett A., Nguyen Hao V., Nguyen Phuong T. De Silva Sena S., 2009. Current status of farming practices of striped catfish, *Pangasianodon hypophthalmus* in the Mekong Delta, Vietnam. Aquaculture, 296: 227-236.

The BMP project is also linked to a study on climate change impacts on the catfish sector in the Mekong Delta. In this instance, the network of farmers that have been involved in the initial BMP surveys and at various stakeholder meetings are also cooperating with the climate change project to assess and evaluate the perception of climate change and potential adaptations to mitigate impacts. In addition, an attempt is being made using available models to determine the extent of catfish farming activities that are likely to be impacted from salinity intrusion resulting from expected sea level rise.

For more information, please visit the catfish BMP project webpage, at:

http://www.enaca.org/modules/inlandprojects/index.php?content_id=1.

Is this the perfect prawn?

After 10 years of careful breeding and research, scientists have developed what could be the world's most perfect prawn.

CSIRO scientists and the prawn industry have bred an improved black tiger prawn which is producing record yields in aquaculture farms and winning awards.

So good are these prawns that they have won five gold medals at the Sydney Royal Easter Show in the past two years, including 'Champion of Show', the highest award possible.

The scientists from CSIRO's Food Futures Flagship have used DNA technology to ensure the breeding program captures the very best black tiger prawn stocks that nature can provide and boost the performance of stocks each breeding season.

With about 50 per cent of all prawns sold in Australia currently imported from countries such as China and Vietnam, developing an Australian prawn that breeds in captivity and is completely sustainable is a major gain for both the local prawn industry and consumers wanting to buy Australian seafood.

After eight generations of selective breeding, one of CSIRO's industry partners, Gold Coast

Marine Aquaculture, has this year achieved average yields of 17.5 tonnes per hectare – more than double the industry's average production. Several ponds produced 20 tonnes per hectare and one produced a world record yield of 24.2 tonnes per hectare.

The Australian average industry productivity for farmed prawns is five tonnes per hectare. The new prawns produced an average of 12.8 tonnes per hectare in 2009.

Leader of the CSIRO Food Futures Flagship prawn research project, Dr Nigel Preston, said this specially bred prawn has the potential to revolutionise the local and international prawn farming industry.

"The new prawn's yield has exceeded all our expectations. The average industry productivity for farmed prawns is only five tonnes per hectare, so this year's average yield of 17.5 tonnes per hectare is a major leap forward," Dr Preston said. "These huge yields can be replicated year after year which means consistent supply of a reliable and high quality product - all vital factors for the long-term growth and prosperity of the Australian prawn farming industry."

If the rest of the Australian black tiger prawn industry adopted the new breeding technology Australia's production could increase from 5,000 tonnes to 12,500 tonnes, adding $120 million annually to the value of the industry by 2020.

The general manager of Gold Coast Marine Aquaculture (GCMA), Mr Nick Moore, said the partnership with CSIRO had assisted GCMA to breed successive generations of prawns in captivity, transforming their business from one plagued with seasonal fluctuations into a reliable primary producer with consistent and predictable output.

"Thanks to outstanding work by the staff here, aided by close collaboration with our partners at CSIRO, we have just finished a prawn breeding season that can only be described as staggering," Mr Moore said.

"Not only have we achieved national and international yield records with no reduction in quality or taste, these prawns are grown in a specially designed, environmentally sustainable

The new prawn is producing record farm yields which are leading to increased supplies of top quality, sustainably produced seafood

production system. This production system and the new breeds have produced a perfect prawn with beautifully textured meat, rich colour, robust size and a great taste.

"The awards (Sydney Royal Easter Show) are professionally judged on many criteria including size, colour, taste and texture, so the results speak for themselves."

Director of CSIRO's Food Futures Flagship, Dr Bruce Lee, said the results were a phenomenal achievement for the industry and for CSIRO.

"Our main goal is to add real value to the profitability of the Australian agrifood industry," Dr

Lee said. "With Australia's population predicted to reach 35 million by 2050, the challenge is to help Australia secure its own food supply, contribute to the food supply of the region and be competitive in global food markets. This result is just the tip of the iceberg for us and represents a major opportunity for the growth of sustainable marine aquaculture in Australia and with global partners.

"Of particular significance to Australia is that marine aquaculture is a drought-proof industry and there's huge potential for the environmentally and economically sustainable expansion of pond-based aquaculture farms right around the Australian coastline."

Until recently, Black Tiger prawns found in oceans and estuaries could not be bred in captivity, so prawn farmers had to rely entirely on trawlers to catch wild prawn parents to stock farm ponds with their progeny each season.

The project received critical funding in 2008 when the Queensland Government provided the CSIRO with a $500,000 Smart State Innovation Projects Fund grant to advance their research. This grant enabled CSIRO to expand its work with Gold Coast Marine Aquaculture to Australian Prawn Farms (near Sarina) and Pacific Reef Fisheries (near Ayr).

Queensland Treasurer and Minister for Employment, Economic Development and Innovation Andrew Fraser said the Innovation Projects Fund was part of the Queensland Government's $300 million Smart State Futures funding program.

Dr Nigel Preston, CSIRO.

"Queensland's prawn farmers produce an average of 3,200 tonnes of farmed prawns a year, worth about $50 million to the State's economy. With increasing demand for produce, especially from South-East Asia, our capacity to meet that demand has, until now, been limited," he said.

"Improving the quality of produce and increasing farm yields will give Australian prawn farmers a real market advantage. It will certainly boost Queensland's aquaculture industry and pay major economic dividends to the State."

Photo credit: All images courtesy of CSIRO Australia.

Specially designed tanks at Gold Coast Marine Aquaculture that house black tiger prawn breeding stock.

Fish Oil Replacement and Alternative Lipid Sources in Aquaculture Feeds

Edited by Giovanni M. Turchini, Wing-Keong Ng and Douglas R. Tocher

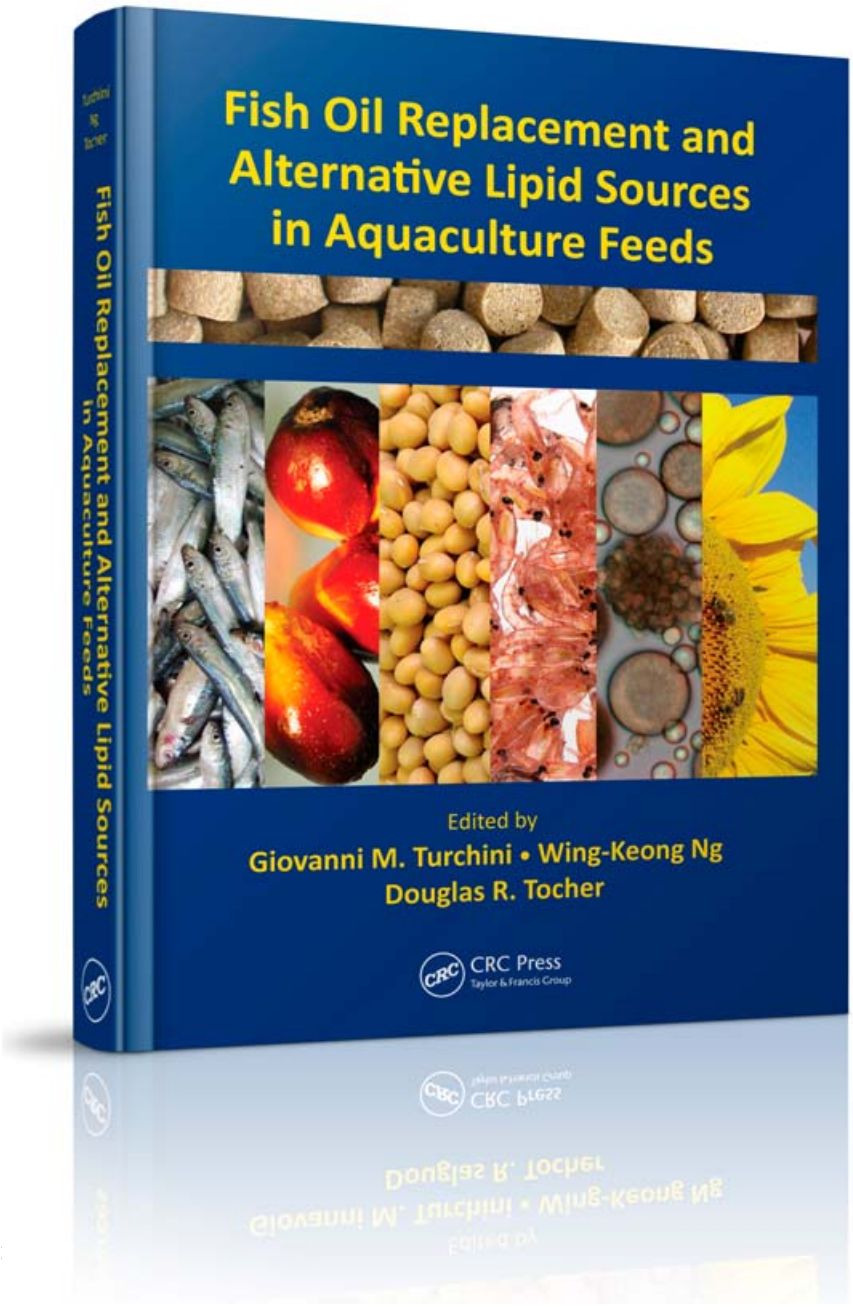
The First and Only Book Specifically Addressing This Issue

Experts are predicting that demand for marinefish oil will soon outstrip supply, creating extreme urgency within the global aquafeed industry tofind viable alternatives. Fish Oil Replacement and Alternative Lipid Sources in Aquaculture Feeds is the first comprehensive review of this multifaceted, complex issue. It also addresses the crucial questions about whether or not the aquaculture industry will be able to meet increasing worldwide demand for fisheries products.

Written by Leading Scientists and Industry Authorities

With contributions from more than 30 international experts, the book provides a global perspective on the production, rationale, and use of fish oils, vegetable oils, and animal fats in relation to the aquaculture and aquafeed industries. After a detailed discussion on alternative lipid sources, the book discusses groundbreaking research on the use of these lipid sources as fish oil substitutes, as well as their potential advantages and challenges for use in aquafeeds.

Rounding out its solid coverage, the book then explores the important physiological effects of various lipid sources and their components on growth, lipid metabolism, health, and postharvest qualities of the farmed fish. Both timely and pertinent, Fish Oil Replacement and Alternative Lipid Sources in Aquaculture Feeds is the most authoritative and comprehensive review on the substitution of fish oil in aquaculture feeds addressing the issues, science, and future directions of using sustainable alternatives. Available through www.crcpress.com – enter promotional code 757CC to receive a 20% discount.



Multilingual CD-ROM of FAO cultured aquatic species fact sheets

Our readers may well be aware of the excellent FAO Fact Sheet series available on the Fisheries and Aquaculture Department's website. Now you can get them offline as well.

This CD-ROM contains 50 cultured aquatic species fact sheets produced by the Fisheries and Aquaculture Department of the Food and Agriculture Organization of the United Nations. The fact sheets are written in simple technical language and focus on the practical aspects of aquaculture, from seed supply to farming systems including harvesting techniques and marketing issues.

All fact sheets are available in five FAO languages (Arabic, Chinese, English, French and Spanish), divided by groups of species and easily accessible through an introductory page and printable. For further information please contact: Mr Valerio Crespi – E-mail: Valerio.Crespi@fao.org.

Aquaclimate Annual Progress Report 2010

The annual report for the Aquaclimate project summarising project achievements of the project in its first year is now available for download from the NACA website.

The Annual report covers Aquaclimate project activities from March 2009 to March 2010 and was confirmed by the project project partners at the annual project meeting. The annual meeting was held at Can Tho University (a national project partner of the project) in Can Tho City, Vietnam (the heartland of Tra catfish farming – a key case study of the project).

Participants at the meeting discussed the progress of work done in the past year and agreed on a work plan for the next 12 months.

The progress and work plan are described in the annual report (which can be downloaded from the NACA website) and outputs are included as annexes to the report.

Key outputs from the first year of the project include:

- Report of the inaugural inception workshop of the project.
- Aquaclimate generic case study methodology.
- Perception of climate change impacts and adaptation of catfish farming in the Mekong Delta, Vietnam. Farmer focus group discussion and stakeholder workshop.
- A review of climate change model predictions and scenario selection.
- Aquaclimate technical brief: Vulnerability and adaptation to climate change on catfish farming: Stakeholder analysis in Can Tho Province, Vietnam.
- Aquaclimate technical brief: Reducing the gap between science and policy development: Creating scenarios together with catfish farmers in the Mekong Delta, Vietnam.
- Shrimp farming in Vietnam focus group discussion and stakeholder workshop report.
- Milkfish farming in the Philippines focus group discussion and stakeholder workshop report.
- Shrimp farming in India focus group discussion and stakeholder workshop report.
- Impact of extreme climatic events on brackishwater aquaculture in India.
- Multi-agency Policy Brief on fisheries and aquaculture for COP15.
- Food and Agriculture Organization (FAO) technical reports on the impacts of climate change on fisheries and aquaculture.

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
Website: www.enaca.org

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

For more information, please visit the Aquaclimate Project webpage at the link below. All reports and publications produced as outputs of the project are available for free download at:

http://www.enaca.org/modules/inlandprojects/index.php?content_id=10

Training course on application of business management principles in small-scale aquaculture

A training course on business management principles for small-scale farmers will be held from 1-10 August in Nha Trang University in Vietnam (NTU). The course is organised by NACA, NTU, Holar University of Iceland and sponsored by the United Nations University Fisheries Training Programme.

The course aims to assist small-scale farmers to acquire additional business skills that will help them improve their efficiency and profitability and competitivness in an increasingly globalised market.

The course will initially be offered to 15 participants drawn from six countries, ie. Bangladesh, India, Indonesia, Myanmar, Thailand and Vietnam. The course will be refined based on feedback and experience for subsequent offerings and wider use throughout the region. Please see the promotional brochure on the NACA website for details at:

http://www.enaca.org/modules/news/article.php?storyid=1873