



Better management practices for Vietnamese catfish

Simon Wilkinson, NACA

Feeding time in a growout pond.

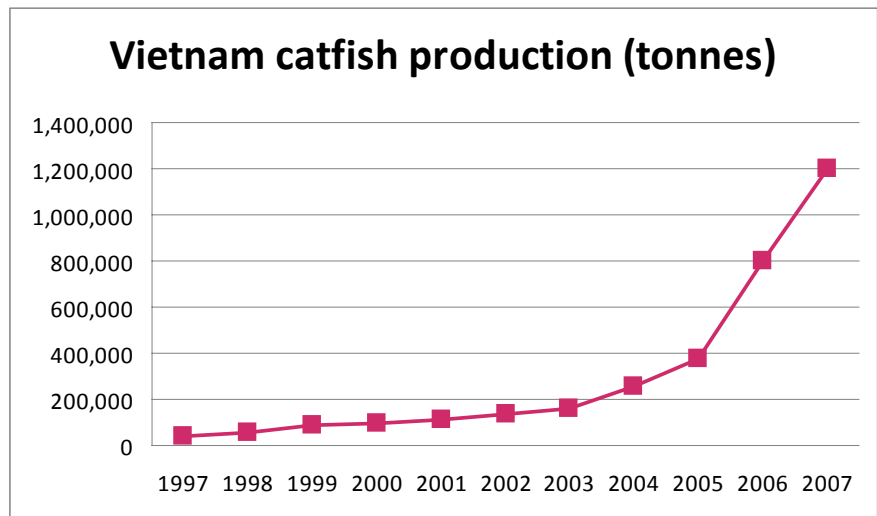
The phenomenal growth of the catfish farming industry in Vietnam is attracting the attention of the world, and with good reason. In 2007 the industry is estimated to have produced at least 1.2 million tonnes of catfish, a staggering increase considering that in 2000 the industry was only producing 100,000 tonnes. The spectacular success of the industry is due to a unique combination of factors that include market opportunity, the robust nature of the catfish, the abundance of high quality water resources available in the Mekong Delta, and the sheer determination and entrepreneurial nature of Vietnamese farmers.

In January we were privileged to travel to Vietnam to discuss implementation of a new project on Development of Better Management Practices for Catfish Aquaculture in the Mekong Delta, funded by AusAID's Collaborative Agriculture Research and Development Programme. The project team consists of a collaborative partnership between the Research Institute for Aquaculture No. 2, Can Tho University, the Victorian Department of Primary Industries (Australia) and NACA, with DPI and RIA2 taking the lead roles in the respective partner countries. The purpose

of the project is to help the industry improve its environmental performance and profitability through more efficient use of resources and improved farming practices. During our visit we had the opportunity to get out into the delta to discuss emerging issues with small and medium-scale catfish farmers and some of the major processing/export companies.

Development of the industry

Catfish farming has been farmed in the Mekong Delta of Vietnam for more than 50 years. However, the export of basa and tra catfish began in the mid-1980s primarily as fillet to Australia (Tuan 2003). Increasing interest from Asian markets fueled development of



the industry from 1990 onwards, with exports later expanding to European markets and the United States.

It wasn't long before the success of catfish as an export commodity began to attract the ire of producers in importing countries. In 2001 the Catfish Farmers of America and related interests formed a lobby to campaign for a ban on the import of catfish products from Vietnam. This culminated in the filing of an antidumping complaint with the US International Trade Commission. Faced with the reality of lower labour and input costs in Vietnam, the commission was forced to declare Vietnam a 'non-market economy' in order to apply penalty tariffs on imported Vietnamese catfish products, a move that was widely seen as trade protectionism on the part of the US government.

Although attempts to block the import of catfish into the US were frustrating for Vietnam at the time, they may actually have been a blessing in disguise. Exporters were forced to look for other markets and they found one: The rest of the world. Catfish once destined for the US started to find its way into other countries where it quickly found a niche as a cheap, white, tasty fish suitable for staple consumption. With wild catch fisheries no longer able to service the growing demand for fish, this niche quickly grew into a gaping chasm, one that even 1.2 million tonnes of catfish has not yet filled.



This farm has constructed their own pellet machine which dumps food directly onto a conveyor belt for express delivery to the pond.

Culture practices and emerging issues

The catfish aquaculture industry in Vietnam presently consists of about 60% small-scale producers, typically with ponds in the range of 2,000 square metres to several hectares. Catfish are typically grown in ponds around 4.5 metres deep with a high level of water exchange on the order of 20-30% per day required to maintain the health of the stock and keep the flesh colour white; if exchange is insufficient the flesh takes on a yellow cast which is regarded as undesirable by processors.

Tra is an extraordinarily robust fish with air breathing capability and a wide tolerance of environmental conditions,

enabling it to be cultured at extremely high densities. Farmers in the delta are commonly harvesting 300-400 tonnes/ha per crop, with some reports of yields of up to 700 tonnes/ha. Tra grows rapidly, reaching a marketable size of 1 kg within six months, allowing farms in the delta to produce two crops or an incredible 600+ tonnes/ha production per year. Even though the profit margin is small – typically around US\$ 0.1 – 0.15/kg – the total return to the farmer (US\$ 60,000 – 90,000+ per hectare) is massively superior to any other crop, and represents a huge improvement to the standard of living of farmers, many of whom were formerly growing rice.

Like other growth industries before it, catfish farming is beginning to experience some growing pains as



View of a catfish pond, a boom to confine floating feed pellets is visible to either side of the feeding shed.



Raceway inlet for water from the river.



Catfish processing facilities enforce strict hygiene standards to comply with the requirements of export markets.

farmers explore the limits of the system and importing countries start raising requirements for products to access their markets:

- Seed quality is the number one issue of concern to farmers as there has been a marked deterioration. Seed supply is currently insufficient to meet demand and there are suggestions that private hatcheries may have resorted to forced spawning of broodstock that are not in good condition or fully ripe. Losses in the nursery stage of culture are very high.
- Not surprisingly, health at all stages of production was also an issue of significant concern. Mortality rates, although widely variable from farm to farm, are generally felt to be on the increase, possibly due to seed quality and to increasingly high stocking densities.
- Feed costs are a major issue and there is currently no auditing system in place to ensure that feed manufacturers are meeting the advertised specifications of their feeds. Some farms are manufacturing their own feeds in order to gain control and flexibility over feed composition, in addition to reducing costs.
- Farmers are also concerned with the balance between stocking density, water exchange and flesh colour, seeking to minimise losses due to disease and pumping costs while



The growth of the catfish industry is fueling expansion of feed manufacturing plants.

achieving a high yield and quality necessary to get a good price from processors.

- Short production chains are an unusual feature of the industry. There are no middlemen; farmers sell their crops directly to large processing/export companies. Prior to purchase, processors collect samples of the crop to assess flesh quality and conduct laboratory tests for chemical residues. If the product passes inspection the farmer is offered a price based on its quality; if the farmer accepts the price a contract is signed and the crop harvested. Processors meet the cost of laboratory testing and transportation, farmers pay their own labour costs for the harvest.

Fillet quality is a major issue for processing plants, although preferences vary according to market, with fillet colour more important in Western European markets while Eastern Europe is mainly concerned with price. Trimming fillets of red muscle and fat is a major component of processing operations, with end products carefully sorted and graded before being frozen individually by blast or in blocks.

It was apparent during our visit that feed manufacturers and processing plants are also undergoing a dramatic expansion of the delta, with new facilities being constructed and existing facilities adding capacity to cater to growing international trade in catfish. This is generating significant employment opportunities; one processing plant



Processors are experimenting with value-added products such as this smoked catfish sausage.



From rice farming to riches: Catfish farming has dramatically improved the quality of life for many farmers. The pond with the feed conveyor belt is in the back yard!

we visited (Vin Hoan Corp.) employes around 3,500 workers alone. The labour requirements are such that the company is presently constructing accommodation facilities to house its workforce.

Proliferation of 'standards': A headache for farmers

The rapid growth of the catfish farming has not gone unnoticed by environmental NGOs. Several have or are attempting to establish various certification 'standards' for catfish aquaculture, including Eurepgap, GTZ, WWF (Pangasius Aquaculture Dialogue) and Naturland (Naturland Standards for Organic Aquaculture).

During our discussions with farmers and processors it was apparent that they are only too keen to improve the performance of their farms and the quality of their products. Due to the high intensity of catfish farming small improvements can deliver big gains to producers, and processors are very much concerned to ensure their products meet the requirements of importing nations. It was clear that the industry will gladly accept guidance that helps them to address such issues but the proliferation of standards is a source of concern. As one farmer said at our planning meeting: "Producers are being caught amongst a proliferation of standards.

I just want one standard I can't follow them all". Similarly, major retail buyers have made it clear that the proliferation of standards is also a source of confusion to consumers.

Ironically, even though proliferation is recognized as an issue, proliferation continues. It seems that the proponents of different standards find it difficult to bridge the ideological and political gaps that exist between them. Everyone wants 'their' standard adopted as 'the' standard; and this fragmentation is in turn a barrier to any particular 'standard-in-principle' gaining the widespread acceptance that is required for it to become a standard in fact.

Towards better management practices

The goal of the BMP project is not to develop certification standards per se. Instead, the project aims to improve management practices, simultaneously delivering increased profitability to the farmer and improved environmental performance through more efficient use of resources. As BMPs are implemented voluntarily, the incentive to adopt them is provided simply by their direct economic benefit to the farmer.

In our discussions farmers emphasized that BMPs should focus on simple, practical measures that they can easily implement. Some certification standards, for example, were considered difficult or impossible for farmers to follow. They emphasized the need to start the process of developing BMPs by working with them to see what changes

were required and also what changes were feasible for them to make, in a 'bottom up' approach. Demonstrating the practical value of BMPs to farmers was also seen as a critical issue for their adoption. The development of standards by foreign consultants with token input by farmers was not greeted with much enthusiasm; such 'paper standards' were at best viewed as being 'impractical', or as one participant exclaimed 'Just theory!'

As a starting point, the Vietnamese project partners (RIA 2 and Can Tho University) will conduct a detailed survey of catfish hatcheries, production and processing in the delta in the first half of 2008, which will identify key issues where the development of better management practices may benefit the industry. The project will run for two years, and further updates will be published in Aquaculture Asia, the NACA Newsletter and on the NACA website, where a dedicated page has been established to track the progress of the project, please visit the link below:

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

References and further reading

Tuan, L.Q. (2003). Country case study: Trade in fisheries and human development, Vietnam. Asia-Pacific Regional Initiative on Trade, Economic Governance and Human Development. Download from: <http://library.enaca.org/AquaMarkets/presentations/OtherPapers/VietnamCaseStudy.pdf>.



Project team after enjoying the hospitality at a catfish farm.