Ca Mau Shrimp Aquaculture Improvement Project
Last Update: March 2015

Species:
Shrimp species including:
black tiger shrimp (*Penaeus monodon*)
Pacific white shrimp or whiteleg shrimp (*Litopenaeus vannamei*)

AIP Region:
SFP, in collaboration with Mekong Tomland Co., conducted scoping activities in the first quarter of 2014 and consulted with key stakeholders including the local government, the Department of Agriculture and Rural Development (DARD), provincial aquaculture offices, fishery associations, producers, and processing plants in the targeted shrimp-producing area in southern Vietnam. Although Vietnam has a long coastline and shrimp farms are scattered across the country, 70% of shrimp production is still coming from the southern part of the country. Hence, SFP identified Ca Mau Province, which contributes 25 percent of the nation’s shrimp production, as the pilot zone for Vietnam’s shrimp improvement. More than 40 shrimp producers/stakeholders, all operating in the same bodies of water, have recently formed a network in the CaiDoiVam District of Ca Mau (see maps below).

(A) Map of Southern Vietnam; (B) Ca Mau Province; (C) Cai Doi Vam District
Source: Google Maps
AIP Participants:

Key stakeholders of the shrimp industry in Ca Mau Province:
• Cai Doi Vam Shrimp Farmers Group – includes 40 small-scale shrimp producers with a total production area of 40 ha. This group is led by a committee of five local farmers.
• Aquaculture Division of Ca Mau
• Department of Agriculture and Rural Development of Ca Mau
• SFP
• Mekong Tomland Co. (Ho Chi Minh City) – a local company that provides technical supports to shrimp farmers in the Mekong Delta of Vietnam
• Intron Life Sciences Co. (Ho Chi Minh City) – supplier of probiotics for shrimp farming
• Hawaii Vannamei Co. (Phu Yen Province) – supplier of postlarvae

Stakeholders to be invited:
• Nutreco International Vietnam – shrimp feed producer
• Minh Phu Co. (Ca Mau) – shrimp processor and exporter
• Vet Department of Ca Mau

Contact: If you would like more information about the AIP and its zonal approach, or wish to support the AIP, please contact SFP.

Sustainability Information:

Several NGOs have ranked farmed shrimp from Asia including Vietnam, but provide conflicting assessments, creating confusion among consumers:

a. Monterey Bay Aquarium has no ranking for farmed shrimp from Vietnam but ranked farmed tiger shrimp coming from Southeast Asia as Best Choice.
b. WWF Hong Kong ranks farmed shrimp in Asia as red (Avoid).
c. WWF Singapore Seafood guide ranks tiger shrimp (both wild and farmed) as red (Avoid).
d. Greenpeace International ranks tropical shrimp and prawns on its Redlist of seafood species.
e. Blue Ocean Institute (BOI Seafood Guide) ranks all imported farmed shrimp as Red (based on a combination of farming issues including poor management and environmental impacts).

Other shrimp sustainability programs in Ca Mau:
• Selva shrimp (BlueYou)
• WWF is working with some shrimp farms moving toward ASC certification
• SNV FIT Program for shrimp producers in Ca Mau
Current issues in the AIP region:

1. Occurrence of early mortality syndrome (EMS) and unclear program on how to mitigate its spread.
2. Transparency on the traceability of farmed shrimp coming from the region.

Date Publicly Announced: 2014

AIP Development

The goal of the AIP is to improve regional management practices of shrimp farms in the major production region(s) in the southern part of Vietnam through zonal management and to embed improvements in official national and local regulations relating to regional carrying capacity, disease transmission, and impacts on the wider environment (e.g., through pollution, habitat destruction, feed ingredients sourcing, and wider biodiversity impacts). The improvements will also ensure that small-scale farmers have capacity to access information and increase awareness of better management practices in order to meet the requirements for certification.

SFP’s objective is to demonstrate that aquaculture zonal management is a critical aspect of ensuring sustainability in an aquaculture region. This will inform the AIP members and other key players that will provide input to the local government aquaculture development plan for the region, as well as educate producers and retailers regarding good aquaculture practices requirements and standards for farmed shrimp. Specific activities include:

• Convene buyers, their suppliers, and local farmers through meetings, workshops, and roundtable discussions to develop zonal management programs/activities in addressing cumulative impact of shrimp farming
• Conduct a carrying capacity assessment
• Work with the local government and researchers to initiate work to understand how disease spreads among shrimp farms in this zone
• Circulate updates on Cai Doi Vam/Ca Mau farmed shrimp to major buyers highlighting outstanding issues and improvements in the shrimp industry
• Assist major buyers in developing procurement policies for farmed shrimp
• Promote understanding of sustainability by engaging major players in the shrimp supply chains
• Develop and communicate strategies for small-scale farms aimed at improving management systems to a certifiable level.
• Share lessons learned regarding best management practices in aquaculture zones for shrimp farming elsewhere in Vietnam and in other shrimp-producing countries in the region.

The Ca Mau Shrimp AIP is a relatively new program for SFP (started in early 2014), but baseline information was gathered prior to the start of the program through its collaboration with Mekong Tomland Co. SFP has been working closely with key players of the shrimp industry in Vietnam, including several national and provincial institutions.
working on developing the shrimp industry in Vietnam, processors, as well as academic institutions. SFP is also working with the USAID MARKET project to promote the expansion of zonal management in the ASEAN countries.

**Background:**

As in most of the global coastal areas, and particularly in Asia, shrimp farming in Vietnam is one of the most common farming activities and is rapidly expanding in the lowland tropical coast. The rapid expansion of the shrimp farming industry has contributed to the economic development of the country. However, there are several trade-offs from this rapid expansion. The shrimp farming industry has had some serious negative environmental impacts: environmental degradation, loss of habitat through mangrove conversion, changes in the food webs, as well as the depletion of wild shrimp stocks due to broodstock collection. Most of these issues have arisen due to the lack of proper planning as well as lack of regulations.

In early 2000, a shrimp industry boom started in the Mekong Delta of Vietnam. During this period, the government allowed the conversion of saline and low-productivity rice fields into shrimp farms (Tho et al. 2014). This expansion was spearheaded by the producers themselves.

In the Mekong, particularly in Vietnam, there are four distinct classifications of shrimp farming: intensive, improved extensive, shrimp-rice, and shrimp-mangrove (Dieu et al. 2011). Among these systems, the improved extensive (mainly earthen monoculture with low stocking density and supplemental feeding) is the most dominant, particularly among the low- and middle-income producers. This is commonly known as well for its low percent of recovery. Most of the producers under this system are managing their pond water individually and the receiving waterbodies act either as a source or a sink for shrimp farms. However, this system is different with the improved and intensive systems, where effluents are treated prior to discharge.

In the early 1990s, white spot disease, yellowhead disease, and Taura syndrome affected shrimp farming globally and it heavily impacted the Asian region (Leano and Mohan 2012), including Vietnam. In fact, shrimp production in Asia collapsed when this happened. This prompted many shrimp producers to abandon their farming activity. However, for those that continued in the industry, producers have shifted to other species, including saline-tolerant species of tilapia. In early 2000, the remaining shrimp farmers found a new species – *L. vannamei* or whiteleg shrimp – that was perceived to be more tolerant than *P. monodon*. It gradually increased among Asian producers and is now the most common shrimp species being cultivated. The figure below shows the production trend during the years when *L. vannamei* production was reported in Vietnam.

Over the past 2 years, the industry has faced a serious threat from an emerging disease known as early mortality syndrome (EMS), which was eventually identified as acute hepatopancreatic necrosis syndrome (AHPNS). The disease was initially reported in China, but neighboring countries like Malaysia, Vietnam, and Thailand have now
reported the disease as well. This disease is now considered to be virulent as both species (*P. monodon* and *L. vannamei*) are affected. At present, there is no known cure or prevention for this disease and both industry and the government are struggling to address the issue. Several recommendations have been given by experts to change the farming system but the disease is continuing to damage the shrimp industry. This led to a reduction of operation in most of the country, leading to a massive reduction of supply. There is a need to immediately address this disease issue in order to sustain the demand for shrimp. The inclusion of zonal management as well as proper planning needs to be considered in addressing the EMS problem as well as other aquaculture-related issues.

![Figure 1. Annual production of farmed shrimp in Vietnam](image)

Globally, shrimp is one of the most popular seafoods consumed in the major importing regions (US, Europe, Japan, and China) and the pressures on farmed shrimp are mounting. At present, the growing issues in the capture fisheries for shrimp have increased the demand for farmed shrimp. Furthermore, the fallout from the EMS issue has drastically impacted other shrimp-producing countries that are not yet affected by the disease, increasing demand and prices quite significantly. The EMS issue and its impact to the industry are somewhat similar to the white spot disease that hit Asian shrimp in mid 1990s. This resulted in drastic reduction of the number of shrimp operators in the region, but also led to the cultivation of new species – whiteleg shrimp (*L. vannamei*).
AIP Progress Update:

2014

- Mekong Tomland Co. and SFP initiated collaboration to further promote zonal management in Vietnam. Development and submission of proposal for aquaculture zones by Mekong Tomland Co. in Ca Mau Province to the Department of Agriculture and Rural Development (DARD).
- Identified 40 shrimp producers to be part of the pilot for zonal management in CaiDoiVam District. Collected baseline information on the general management of shrimp farms.
- Introduction of the concept of zonal management in nearby SocTrang Province.
- Two aquaculture policy roundtables were conducted in Ca Mau, where more than 40 stakeholders participated including the representative from DARD, fishery associations, processing plants, and individual small-scale farmers.
- Supported buyer (Aldi) visit as part of the global buyer engagement program.
- Training of shrimp farmers and local officials in the management zone on sustainable farming of shrimp.
- Presentation of the zonal management concept at the 5th FAO APFIC meeting in Hyderabad, India.
- Initial field activities on carrying capacity assessment in CaiDoiVam, Phu Tan District. Hands-on training with Mekong Tomland staff and Ca Mau Department of Agriculture and Rural Development (CDARD).
- Preparation of primary and secondary data to complete the carrying capacity assessment.
- Training of farmers towards VietGAP certification. Discussions with Minh Phu processor to support the AIP.
- Multi-stakeholder policy roundtable held in Ho Chi Minh City just before the Global Outlook for Aquaculture Leadership (GOAL) meeting. The timing enabled buyers from Europe and North America to also attend the meeting.

Activities (January – March 2015):
Further promote the zonal management approach in Ca Mau Province through several activities, including:

1. Improvement trainings for shrimp farmers, particularly the small-scale producers, with particular focus on zonal management (disease surveillance and water pollution), familiarization with VietGAP, and quality check for postlarvae.

2. Disseminate results of the initial carrying capacity to key stakeholders.

3. Work with Ca Mau DARD office for application of the carrying capacity assessment in the selected zone in order to determine the current performance as well as the production limit of the zone.

4. Increasing the demand for aquaculture improvement programs through a zonal
approach in other parts of the country, through informing DARD offices and shrimp clubs, and collaborating with World Bank-funded Coastal Sustainable Resource Development project.

Resources:
