

IMPACTS OF EU FOOD SAFETY POLICY ON THAI SHRIMP FARMING*

Dao Huy Giap, giapdh@ait.ac.th
Yang Yi, yangyi@ait.ac.th
Dhirendra P. Thakur, thakur@ait.ac.th
Asian Institute of Technology

ABSTRACT

Thailand is the largest shrimp producer in the world. Thai shrimp production from aquaculture reached 280,000 tons in 2001, which accounted for about 33% of the total global shrimp aquaculture production. Detection of residues of banned chemicals in shrimp imported to Europe from Asia starting from 2002 was perceived as a biased stricture by the shrimp exporters, and many of the shrimp exporting countries had considered the measures as a sort of food-scandal. Containers of shrimp were destroyed when banned chemicals were detected and, therefore, Thailand and other shrimp producing countries are under tremendous pressure to follow European food-safety regulations. This paper reviews social, economic and environmental aspects of Thai shrimp farming, and provides background information of the Thai shrimp industry. Moreover, impacts of EU ban on shrimp imports from Thailand have been extensively analyzed based on the views of various sources such as media, press and peer-review papers from both Thai and EU sides. Impacts analysis has revealed that the ban has caused shrimp prices falling in Thailand and created image problem for Thai shrimps. It has triggered introspection among the stakeholders. Consequently, the Thai Government has implemented an action plan on food safety and has declared 2004 as "The Food Safety Year".

Keywords: Thailand, shrimp farming, food safety, antibiotic, European Union

INTRODUCTION

Use/abuse of chemicals in shrimp farming is widely known and has mingled with the normal culture practice, originating right from hatcheries (use of disinfectants) to farms (chemicals to treat water and sediment, antibiotics to reduce disease risk, etc.). The unauthorized and prolific uses of some chemicals such as antibiotics in aquaculture possess serious threat to the environment and human health (Arthur et al., 2000). Convincingly, several countries including Thailand have taken measures to manage the use of chemicals through some forms of regulation. Nevertheless, command and control approach often fails in dealing with the externalities in shrimp farming and has led to a new policy approach towards market-based incentive or economic incentive (Anantanasuwong, 2000).

In late 1990s, despite the existence of highly complicated food safety system with hundreds food directives for each kind of foods in European Union (EU), food crisis could not be prevented. This raised alarm to the EU food consumers and provoked them to seek radical changes in food safety policy of their governments as well as at the EU level. Consequently, in 1999 EU issued a law to ban 16 antibiotics used in animal husbandry (Nguyen, 2004). In January 2000, EU issued the "white paper on food safety" with the overall goal to ensure the highest standards of food safety. International food trade policy requires the ability to trace and safeguard measures in response to food safety standard throughout the food chain, not just based on the end-product quality (CEC, 2000). The policy has been implemented through international trade, and the shrimp exporting countries have been under tremendous pressure to follow EU food safety policy. Detection of banned antibiotic residues in shrimps imported from Asian countries in

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2002 was a serious issue and has triggered debate between the stakeholders and the policy planners. This paper reviews and analyses the impacts of EU food safety policy on Thai shrimp farming.

SHRIMP FARMING IN THAILAND

Thailand has been the world largest producer of farm-raised shrimp since 1992, accounting for 33% of global farm-raised shrimp production in 2001 (FAO, 2004). However, Thai shrimp production went down from 280,000 tons in 2001 to 250,000 tons in 2002 (Figure 1). Shrimp farming is an important source of income and an effective way to improve living standard of the local people. It also creates a large number of jobs from related industries such as shrimp feed, shrimp processing and export (Anantanasuwong, 2000). Obviously, shrimp farming industry has contributed significantly to the Thai economy and is a major export revenue generator.

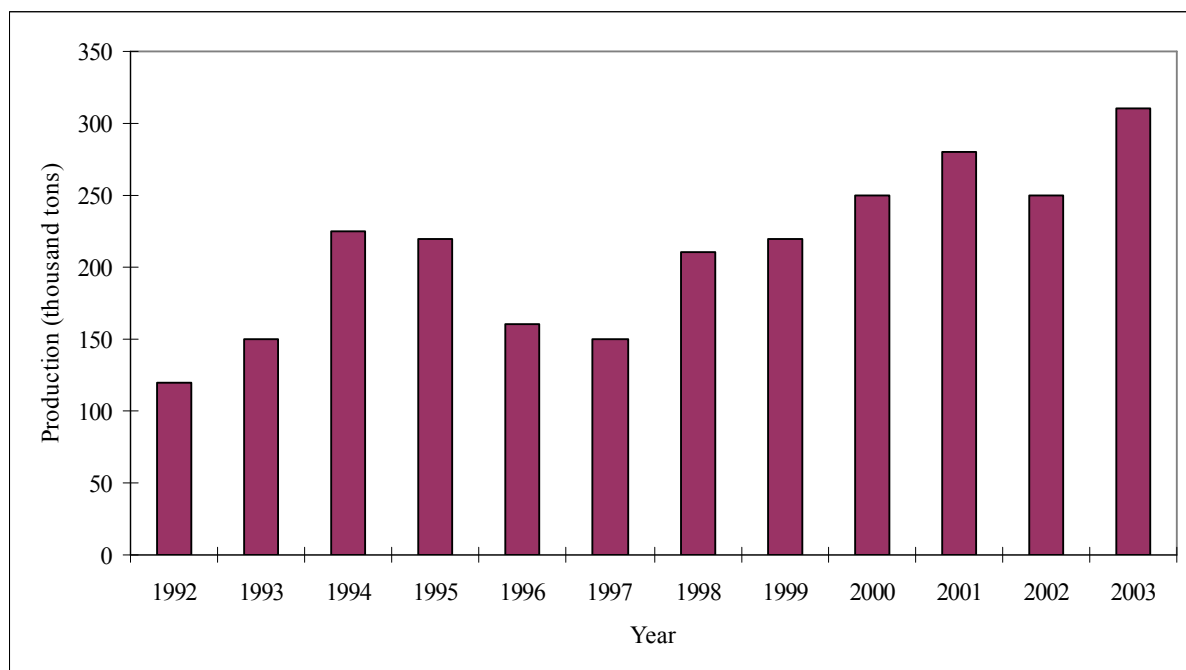


Figure 1. Thai shrimp aquaculture production (tons)

Despite its significant contribution to the national income and uplifting living standard of local people, shrimp farming has also been associated with a substantial number of negative socio-economic and environmental impacts, including: (i) conversion of mangroves, (ii) water pollution, (iii) salinization of drinking water wells and paddy fields, (iv) destruction of larvae and juveniles of various fish and crustacean species, (v) loss of access to land (Lin, 2000; Lebel et al., 2002). The most recent concern in shrimp farming is food safety/quality; the use of antibiotics in shrimp culture is a serious threat to human health as it can cause drug resistance to human pathogens (Hanekamp, 2003).

Typically, Thai shrimp farming industry is characterized by a large number of small owner enterprises with an average area of less than 1.5 hectares, making the industry more difficult to manage and adopt new technology (Lin, 2000). It may be the case that most environmental problems are caused by a large number of small ponds where producers simply do not have enough resources to invest in improved production and management methods (Clay, 1997). Nevertheless, success and failure of shrimp industry is not guided by a single entity rather influenced by several stakeholders working at different levels (Vo,

2003). Stakeholders can be broadly grouped into two groups, primary stakeholders and secondary stakeholders. Primary stakeholders include suppliers (seed, feed, chemical, and equipment), producers (small-scale, cooperative, and company), and traders/processors as outlets for shrimp products in domestic and international markets. Secondary stakeholders include domestic and foreign consumers, local and society-at-large communities, interested groups, Thai and importing countries governments, media, quality assurance and certification agencies, and training providers (Figure 2). Markedly, different stakeholders have different views on shrimp farming primarily based on their interests. The primary stakeholders concern more about the benefits of shrimp farming, yield, farmers' health and environment, whereas the secondary stakeholders concern more about the food safety/quality processes such as good aquaculture practices (GAP), good manufacturing practices (GMP), hazard analysis and critical control points (HACCP) and organic aquaculture and environment.

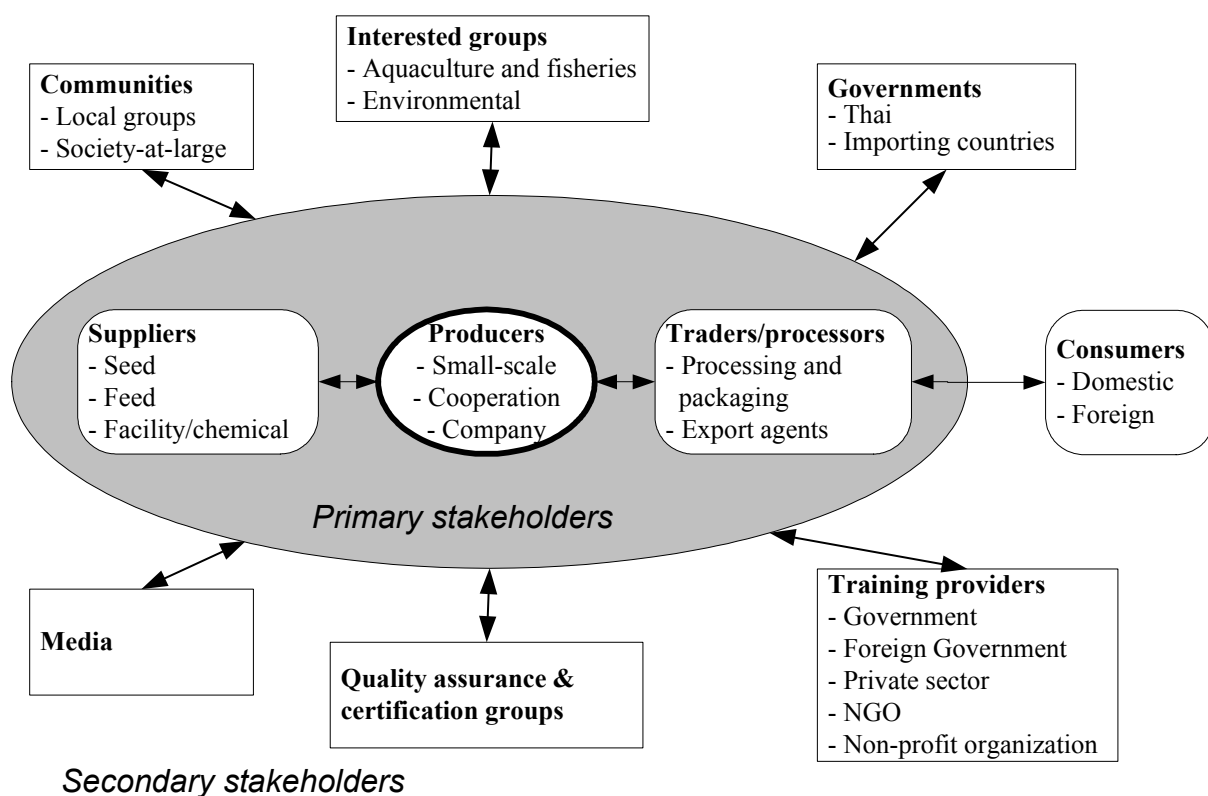


Figure 2. Stakeholders in Thai shrimp farming

Major export markets for Thai shrimp are Japan and USA. As a result of the violent competition being faced in international shrimp trade, primarily by the neighboring countries, Thai shrimp exporters have adapted themselves to maintain their international competitiveness via creation of more value-added products. Maintaining superior product quality and procurement of raw materials from other developing or under-developed countries for further processing are the strategies which Thai exporters are adopting to keep their dominance in international shrimp market. A comparative look to the total Thai shrimp trade reveals that about 80% of the shrimp produced was exported and only 20% consumed domestically in 2002, with almost equal proportion being exported to USA (45%) and Asia (43%), and 5% and 2% of the total Thai exported shrimps to Canada and EU, respectively (TFFA, 2004). The analyses of strengths, weaknesses, opportunities, and threats of shrimp farming in Thailand as mentioned above are summarized in Figure 3.

Strengths (S)	Weaknesses (W)
<ul style="list-style-type: none"> • Reputation of Thai shrimp • High capacity to produce shrimp • Proliferation of efficient small-scale farmers • Strong and well-organized leadership from government and private sectors 	<ul style="list-style-type: none"> • Shrimp farmers lack of market knowledge • Shrimp farmer not unity • The government support too slow • Farmer lack of code of conduct for shrimp culture • Lack of regulation on rampant abuses of chemicals
Opportunities (O)	Threats (T)
<ul style="list-style-type: none"> • A steady recovery from the economic crisis of Thailand • As the world's leading producers and exporters of agricultural and food products • Larger pool well-trained fishery biologists • High potential need of shrimp products • Ready foreign markets and high rate of investment return 	<ul style="list-style-type: none"> • Very strict quality control (zero tolerance) • EU concessions to other poor countries • High completion with products from Vietnam, India and Bangladesh • Rapid deterioration of macro-environment due to multiple uses of coastal lands and waters

Figure 3. SWOT analysis for shrimp farming in Thailand

THE EU POLICY ON FOOD AND FOOD SAFETY

European Union countries assemble as a single market and they follow central regulations upon which majority of the nations in the Union have agreed (Europa, 2004). EU has a huge frozen shrimp market and likely to be the preferred destination for shrimp exporters. However, EU import of Thai frozen shrimp is very small, accounting for only 1.6% of total Thai shrimp export. Change in EU policy has made Thai shrimp more expensive as it has decided to no longer allow Thai shrimp industry to get benefit of the EU's Generalized System of Preferences (GSP), which allows reduced tariffs for countries with weak economies below average economic growth (Brenton and Manchin, 2003). Consequently, Thai tariff on shrimp exported to EU increased from 4.5% to 14.5% and thus, made Thai shrimp more expensive (Bangkok Post, 2001).

In recent years, consumer confidence in the safety of food supply has been seriously undermined. Lack of confidence has arisen as a result of a number of significant food safety scares involving the contamination of major food production chains. EU in 1999 and USA in 2000, issued the laws to ban 16 antibiotics residues in foods (zero tolerance) (Phillips, 2003). The zero tolerance approach is the regulation translation of the precautionary principle in food safety issues: "when it doubt, leave it out" (CEC, 2000; Hanekamp, 2003). However, the zero tolerance policy does not exist in the real world situations. "Zero tolerance" effectively means a best-available-techniques approach in the quest for analytical limit of detection, which, in turn, might result in the crossing of natural base-line concentrations ever presented in food products (Nguyen, 2004). The "zero tolerance" policy regarding antibiotics residue was the biggest difficulty faced by shrimp exporting countries in 2002. The case happened when some antibiotics such as chloramphenicol and nitrofurans residues at the level of lower than part per billion detected by the most modern EU lab technology in some shrimp products imported from Asian countries (Nguyen, 2004).

Certainly, "zero tolerance" on food safety is the most serious challenge being faced the food exporting countries in order to ensure the accessibility and competitiveness of their product in the EU food markets. Furthermore, EU has the strictest and the most sophisticated systems of food safety control, which will

not only improve EU's public health protection but also will restructure relations with the food exporting countries (Lam, 2003; Nguyen, 2004).

If we look at the fundamental changes undergone in the food safety policy, it is the shift from maximum residues limits (MRL) to zero tolerance. Maximum residues limits are no more food safety standards; they are trade standards and serve to indicate whether the practice has been used in accordance with good aquaculture practice (GAP) (Hooper and Associates, 2003). Therefore, compliance with MRL is not a direct measure of food safety but merely establishes that good aquaculture practice has been followed and that a legal standard has been complied with. Zero tolerance policy is the restriction on the process of production, not just on the quality of products. EU has adopted maximum residues limits at a zero tolerance level to restrict the process of shrimp production, and this is the fundamental change in trading rules (Naylor et al., 1999).

IMPACT OF EU POLICY ON FOOD AND FOOD SAFETY

Negative impacts

The EU boundaries are practically closed for shrimp from many countries including Thailand. Numerous containers of imported shrimp have been kept at, rejected from or even destroyed in some EU ports (Lam, 2003; Nguyen, 2004). Producers lost millions of Euros, and thousand of people lost their job in exporting countries. At the same time, EU companies and consumers were in loss due to the depleted shrimp supply for rather long period (Nguyen, 2004).

The EU policy of zero tolerance can lead to economic inequality and may widen the division between developing and developed nations. For example, products designated as safe by an exporting country may be designated as non-compliant if the importing country uses a more sophisticated analytical method which results in lower detection limits (Hanekamp, 2003). Evidently, the food safety regulation has strongly affected the Thai shrimp export to EU markets as the shrimp export from Thailand to EU reduced by more than 50% per year since 2001 (Table 1). Although exports to EU in 2001 were small with a value of about US\$58 million, the ban affected Thai food reputation in overall food export markets with an annual value of about US\$7 billion.

Positive impacts

In response to the strict food safety measures adopted by EU, Royal Thai government and related agencies have evolved with corrective measures to protect the shrimp business and maintain the export revenue. A greater co-ordination between ASEAN seafood exporting countries has reduced internal competition and increased co-operation in dealing with importing countries to protect common interests. ASEAN Aquaculture Federation (AAF) has been established by 5 biggest ASEAN aquaculture producers including Indonesia, Malaysia, Philippine, Thailand and Vietnam, aiming to promote sustainable aquaculture development, respond to food security and exports and support long-term interests of aquaculture in ASEAN countries (Lam, 2003).

Though the present time is quite challenging and tough for Thai exporters, they are gearing-up to enter the high-end market quality to achieve the goal of becoming the "Kitchen of the World" by promoting biotechnology at shrimp farming, changing shrimp culture practices, reducing and eliminating drug and chemical usage, and turning to organic supplements. Additionally, Thai shrimp industry came to the realization that higher dependence on export markets makes the impact of any international trade policy huge on shrimp industry. Thus, Thai shrimp industry in association with the government agencies is trying to promote domestic shrimp consumption

Royal Thai Government has declared 2004 as “The Food Safety Year”. In respond to this policy, the Department of Fisheries has made action plan on food safety from “Farm to Fork” to ensure that shrimp and shrimp products are safe and comply with the national as well as international standards. In addition, the improvement on shrimp aquaculture practices (GAP, GMP, and HACCP) has been emphasized in all sectors of the food supply chain. Royal Thai Government is also encouraging the code of conduct or organic shrimp farming (Suwanrangsi, 2003).

Table 1: Thai fresh and frozen shrimp export products by country/region during 2000-2003 (TFFA, 2004).

Country/region	2000			2001		
	Quantity	Value		Quantity	Value	
	(Tons)	('000 US\$)	(%)	(Tons)	('000 US\$)	(%)
Asia	60,037	570,695	39.80%	57,366	483,680	37.10%
U.S.A.	65,261	692,818	48.30%	67,167	648,701	49.80%
Canada	4,498	47,605	3.30%	5,802	53,933	4.10%
EU	6,612	56,068	3.90%	7,059	57,677	4.40%
Australia	3,927	40,510	2.80%	3,643	33,517	2.60%
Others	4,003	27,310	1.90%	3,569	26,024	2.00%
Total	144,338	1,435,007	100.00%	144,606	1,303,524	100.00%

Country/region	2002			2003		
	Quantity	Value		Quantity	Value	
	(Tons)	('000 US\$)	(%)	Tons	('000 US\$)	%
Asia	47,672	350,308	42.70%	41,459	335,026	36.34%
U.S.A.	42,296	370,170	45.20%	62,920	479,641	52.03%
Canada	4,901	43,316	5.30%	6,696	53,103	5.76%
EU	1,814	12,765	1.60%	692	6,026	0.65%
Australia	3,209	24,210	3.00%	4,033	27,359	2.97%
Others	3,861	18,857	2.30%	3,636	20,641	2.24%
Total	102,753	819,632	100.00%	119,436	921,795	100.00%

CONCLUSIONS

Food safety has become an issue of utmost importance in all food industries including shrimp. The lesson learnt by the shrimp industry is that not only the end product quality but also quality management in the food supply chain is important. It is essential to control the quality from farm production to distribution and to consumers. Consumers and governments are demanding safe foods, and these demands are being passed back along each step of the food chain, and ultimately ending with the food producers. Thus, all stakeholders in this food chain will be required to share their responsibility for the integrity of the food supply.

The EU food policy on food safety has changed business structure between EU and shrimp exporting countries, primarily due to the shift in policy from end product quality control to production process control. The control on process of production is hard to implement, however, once implemented it will reduce the known and unknown risks at different levels of production and will, in turn, ensure the highest food quality. Furthermore, this will make the process more transparent, improve tractability, increase competitiveness within the sector and ultimately, will lead to better food quality. In a nutshell, the EU ban

on Thai shrimp import has resulted in improvement of Thai shrimp industry in following prime areas: (a) raise environmental and food safety awareness, that promotes biotechnology at shrimp farming to bring shrimp culture to more environmentally safe and friendly; (b) diversify shrimp products to deal with shrimp disease and market risks; and (c) promote domestic consumption of shrimp.

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