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# COMPLIANCE OF THE ICELANDIC AND VIETNAMESE FISHERIES SECTORS WITH THE NEW EU LEGISLATION ON FOOD HYGIENE AND OFFICIAL CONTROL

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## ABSTRACT

In recent years, the Vietnamese fisheries sector has become one of the key export sectors of Vietnam, in which the EU market has occupied an important position. The EU has adopted a legislation package on food hygiene and official control which took effect on 1 January 2006. For the purpose of increasing opportunities for export of fishery products into the EU, which has high requirements on food safety, fish exporting countries such as Vietnam and Iceland have to comply fully with the new EU legislation. Iceland has made much progress and gained valuable experience and knowledge. Therefore, after determining the basic requirements of the new legislation, this study focuses on the experience from Icelandic compliance with the EU legislation on food hygiene and official control, identifies the weaknesses and shortcomings of the Vietnamese fisheries sector as well as measures necessary to help the Vietnamese fisheries sector to meet the new EU requirements. As a result, some valuable lessons from Iceland and recommendations for a legislative framework, structure and activities of authorities in Vietnam as well as necessary changes in activities of the Vietnamese fishing industry are raised for relevant interests.

## TABLE OF CONTENTS

## LIST OF FIGURES



## LIST OF TABLES

## LIST OF ABBREVIATIONS

| | |
|---|---|
| BAP | Best Aquaculture Practices |
| CVO | Chief Veterinary Office |
| DFF | Directorate for Freshwater Fisheries |
| DOFI | Provincial Departments of Fisheries |
| EEA | European Economic Area |
| EEZ | Exclusive Economic Zone |
| EFA | Environment and Food Agency |
| EU | European Union |
| GAP | Good Aquaculture Practices |
| GDP | Gross Domestic Product |
| GHP | Good Hygiene Practice |
| HAB | Harmful Algae Bloom |
| HACCP | Hazard Analysis Critical Control Point |
| ISO | International Standard Organization |
| FISKISTOFA | Directorate of Fisheries |
| MRI | Marine Research Institute |
| NADAREP | National Directorate for Aquatic Resources Protection |
| NAFEC | National Fisheries Extension Centre |
| NAFIQACEN | National Fisheries Inspection and Quality Assurance Center |
| NAFIQAVED | National Fisheries Quality Assurance and Veterinary Directorate |
| PFRPS | Provincial Fishery Resource Protection Sub-departments |
| SPS | Sanitary and Phytosanitary Measures Agreement (WTO Agreement) |
| SSOP | Sanitation Standard Operating Procedures |
| TBT | Technical Barriers to Trade Agreement (WTO Agreement) |
| UK | United Kingdom |
| US | United States |
| US FDA | United States Food and Drug Administration |
| USD | United States Dollar |
| VASEP | Vietnam Association for Seafood Exporters and Producers |
| VND | Vietnamese Dong |
| WHO | World Health Organization |
| WTO | World Trade Organization |

# 1 INTRODUCTION

## 1.1 Background and rationale for this study

In Vietnam the fisheries sector makes up an important part of the national economy and at present, Vietnam is one of the biggest fish exporters in the world. In 2004 the total export value of fishery products was 2.4 billion USD, reaching third place after textile-garments and crude oil in the economy (GSO 2005).

The EU is an important market for Vietnamese fishery products, making up 10% of the total fishery export value in 2004, especially for shrimp, only after Japan (32%) and the US (25%) (FICEN 2005). However in 2002 the export value was under 4% of the total fishery exports mainly due to antibiotic residues in shrimp, although in 2004 it had increased to 10% (FICEN 2005).

In order to strengthen its place on the international market and to gain access to the WTO this year (i.e. 2006), in which the EU has an important role, Vietnam must comply with both general and specific requirements set by different markets.

In January 2000, the European Commission presented a complete overhaul of the legislation on food hygiene and official control, including four proposals on the following subjects:

- Food hygiene;
- Specific hygiene rules for food of animal origin;
- Official controls on products of animal origin intended for human consumption;
- Animal-health rules governing the production, placing on the market and importation of products of animal origin intended for human consumption.

This overhaul resulted in four regulations and one directive on official food controls and food hygiene which updated existing EU requirements and came into effect as of 1 January 2006. All food products produced or placed on the EU market, including those imported or exported, shall comply with the new legislation (Huss *et al.* 2005 and Chapter IV, Regulation (EC) No. 852/2004).

At present, the quality management system in the Vietnamese fisheries sector still has some weaknesses including a lack of knowledge and skills on food hygiene and official control. Vietnamese legislation on quality management also does not fully meet external requirements. Furthermore, not many businesses and individuals such as middlemen, farmers, and fishermen are aware of the new legislation. These facts pose many challenges for the Vietnamese fisheries sector.

## 1.2 Scope of research

This study focuses on the food hygiene and official food controls aspects of the fishery production chain in Vietnam in comparison with the experience, lessons learnt and advances of the Icelandic fisheries sector to find out means and ways to improve quality management in Vietnam to meet the new legislation requirements.

## 1.3 Purpose of this study

### *1.3.1 Aims*

The purpose of this study was to analyse current operational practices in the Vietnamese fisheries sector from harvest to export ("field to fork") in light of the new EU legislation on food hygiene and official food control, compare those to practices in Iceland and suggest necessary changes along the production chain.

For this purpose, the study compared the existing legislation and practices in Vietnam to the new EU legislation and evaluated experience, results, and the weaknesses of compliance with the new legislation in Iceland. Based on the findings, recommendations on necessary changes for the fishing industry and authorities in Vietnam were made.

### *1.3.2 Tasks*

In order to achieve the aim, the following tasks were conducted:

- An evaluation of the quality management system of the Icelandic fisheries sector in compliance with the new legislation to gain implementation experience and learn lessons from Iceland
- An evaluation of the weaknesses and shortcomings in the quality management system of Vietnam and the ability of the Vietnamese fisheries sector to comply with the new legislation
- A preparation of recommendations and guidelines for the Vietnamese fishing industry and authorities on food hygiene and official control matters to meet the new EU legislation requirements.

## 1.4 Potential benefits to the industry from this study

### *1.4.1 Long term*

Based on fulfilment of the new legislation, the quality of Vietnamese fish products will be improved and export opportunities to the EU markets in particular and other markets in general will be increased. In addition, the brand names and competitive ability of Vietnamese fish producers will be reinforced because of increased confidence of foreign and Vietnamese customers in Vietnamese fish products.

### *1.4.2 Short term*

The results from the project will be an impetus for the following activities in Vietnam in order to disseminate the new legislation and implement necessary changes in the Vietnamese fisheries sector:

- The results will be a part of contents of a seminar on SSOP application in Vietnam with attendance of representatives from the industry, VASEP and authorities from the Ministry of Fisheries of Vietnam. Recommendations of the project will be discussed to be supplemented and improved.
- The results will be discussed in the seminar in order to adjust the recommendations. Based on the results, a guideline for the industry will be developed and posted on the website of VASEP as well as published as a booklet to disseminate to Vietnamese fish production businesses and individuals in meetings or annual fishery exhibitions conducted by VASEP
- Based on the results of the seminar, the Human and Technological Development Unit of VASEP will compose lecture materials on the new EU legislation and necessary changes for the industry for training courses on fishery quality management.

# 2 STUDY METHODOLOGY

## 2.1 Legislation study

The new EU legislation package on food hygiene and official control was analysed and the basic requirements applying to fish production are summarised. This summary was classified by field groups of hygiene and official control.

## 2.2 Case studies: production, processing and marketing of shrimp intended for the EU market

Observations and investigations on legislation and practices of the Icelandic fisheries sector related to coldwater wild shrimp production and a similar study of the Vietnamese fisheries sector related to warm water cultured shrimp production were analysed and compared to the new EU legislation as follows:

- *For wild shrimp*: compare the new legislation with the current situation of the Icelandic fisheries sector, analyse new Icelandic legislation to comply with EU legislation and observe the practices of shrimp production businesses in Iceland (including fishing, auctioning, processing, cold storage and transportation) to draw on the experience, results and weaknesses in complying with the new legislation. In addition, an evaluation of the current situation of Vietnamese wild shrimp production was also carried out in order to find out the weaknesses and shortcomings in quality management systems in Vietnam as well as to understand the ability of Vietnam to apply the lessons learnt from Iceland.

- *For cultured shrimp*: the study compared the new legislation with the current situation in the Vietnamese fisheries sectors to find out the weaknesses and shortcomings in quality management systems in Vietnam.

The study covered the process from farms or catching vessels to export ports as outlined in Figures 1 and 2. For observation and investigation in Iceland, shrimp catching boats, auctions, processing factories and export ports were visited.


Figure 1: Production chain of wild shrimp products to export (Case study No. 1)

Figure 2: Production chain of cultured shrimp products to export (Case study No. 2)

## 2.3 Recommendations

Based on the results from the case studies, lessons learnt from Iceland suggested improvements in the quality management systems in the Vietnamese fisheries sector in compliance with the new EU legislation, including solutions for both authorities and the fishing industry,.

Step sequence of the study is illustrated in Figure 3:

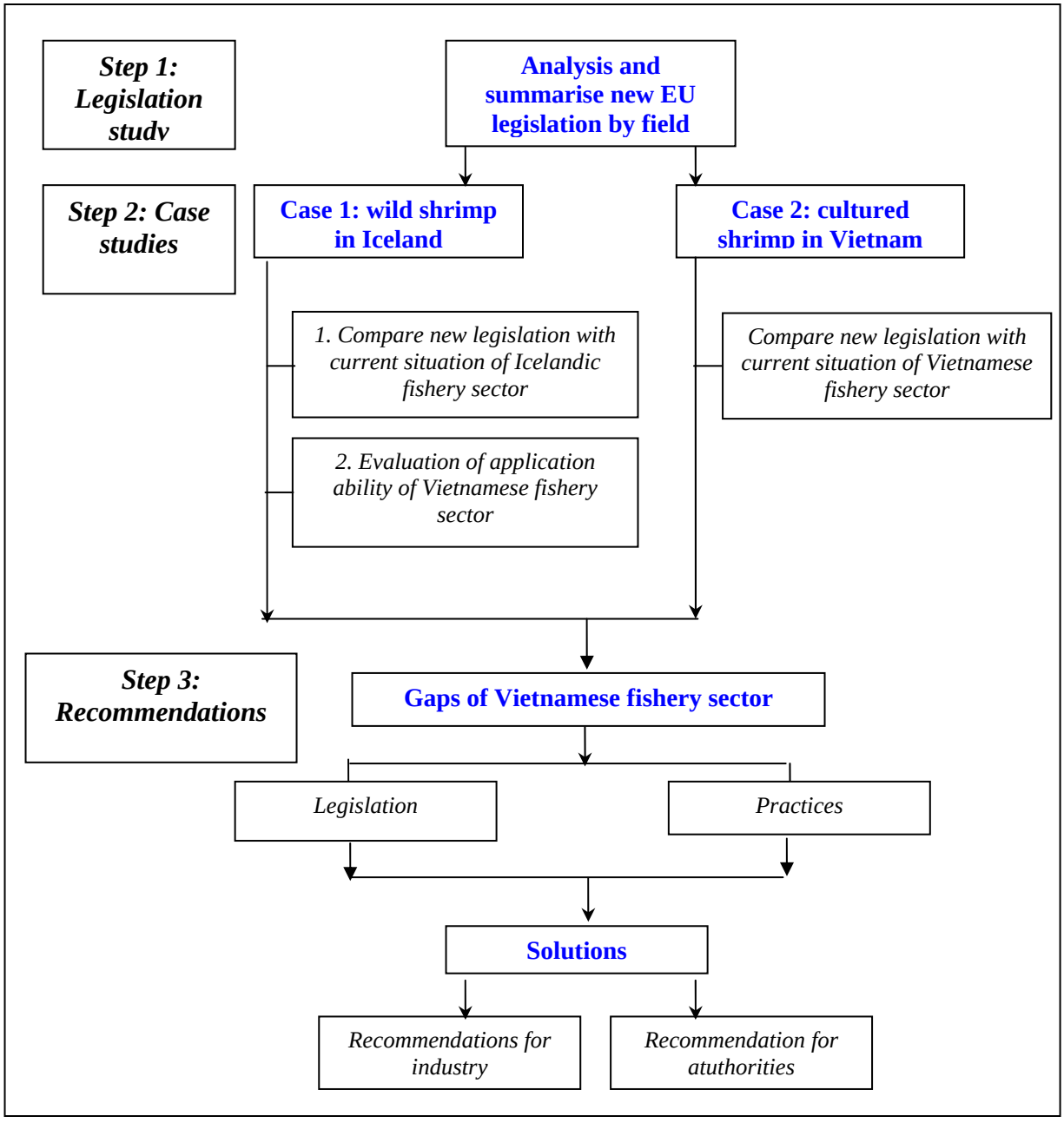


Figure 3: Study process flow chart

With this study method in mind, the report is organised as follows:

- Statistics of seafood borne diseases and seafood consignment rejections in international trade
- Importance of hygiene and official controls for food safety assurance
- Introduction of the new EU legislation on food hygiene and official control
- Overviews of the fisheries sectors and quality management systems in Iceland and Vietnam
- Assessment of compliance with the new EU legislation in the production of shrimp products intended for the EU market in Iceland and Vietnam
- Proposals for changes in hygiene management and official control systems in Vietnam

# 3 THE IMPORTANCE OF HYGIENE AND OFFICIAL CONTROL IN FISHERY SAFETY AND QUALITY ASSURANCE

Fishery products contribute to economies and are one of the main supplies of animal protein for human consumption in many parts of the world. However, seafood is a potential vehicle for transmitting diseases to humans and food hygiene is one of the leading reasons for seafood import refusals in international trade. The facts are outlined in section 3.1.

Food hygiene includes all conditions and measures necessary to ensure the safety and suitability of food at all stages of the food chain (FAO and WHO 2003). GHP always forms the foundation for all food safety management systems in fishery production businesses (Huss *et al.* 2004). GHP sets up general rules that pay attention to suitable environmental conditions for food processing, as well as practices that ensure hygienic procedures and controlled working conditions. GHP is an important part of HACCP system (EASTFISH and SIPPO 2000) which is a mandatory management system in most fish importing and exporting countries in the world.

## 3.1 Statistics of seafood borne diseases and seafood consigmment rejections in international trade

Statitistics from developed countries show that seafood is usually involved in 10 - 25% of the reported foodborne outbreaks (Valdimarsson *et al.* 2004). Correlatively, 10% of the 1.425 foodborne outbreaks in the period 1992 - 1999 in the UK were also caused by seafood (Huss *et al.* 2004). As shown in Table 1, three leading causes of the foodborne outbreaks in this period were Scombrotoxin (32% of confirmed seafood borne outbreaks), virus (18%) and *Salmonella* (10%). Hygiene conditions and procedures are considered as one of the main causes of the presence of virus and *Salmonella* (Huss 1994 and Huss *et al.* 2004).

Table 1: Etiological agents of foodborne outbreaks in the UK associated with seafood (Huss *et al.* 2004).

| Agent | No. of outbreaks 1992-1999 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Total[1] | Food-borne | Seafood | | Fish | Molluscs | Crusta-ceans | Other |
| | | | suspected | confirmed | | | | |
| Scombrotoxin | | | | 47 | 47 | 0 | 0 | 0 |
| DSP | | | | 1 | 0 | 1 | 0 | 0 |
| Virus | | | | 26 | 0 | 21 | 3 | 2 |
| *Salmonella* | | | | 14 | 7 | 1 | 4 | 2 |
| *Campylobacter* | | | | 3 | 1 | 0 | 1 | 1 |
| *S. aureus* | | | | 1 | 0 | 0 | 1 | 0 |
| *B. cereus* | | | | 1 | 1 | 0 | 0 | 0 |
| *C. perfringens* | | | | 3 | 1 | 0 | 1 | 1 |
| Unknown | | | | 52 | 12 | 31 | 7 | 2 |
| **Total** | **4 603** | **1 425** | **181** | **148** | **69** | **54** | **17** | **8** |

1: Total number of reported intestinal disease outbreaks

In relation to seafood borne diseases, competent authorities, esspecially in developed countries, have been tightening seafood import conditions as well as official import controls. Many seafood consignments imported to developed countries have been detained or rejected in international trade because of safety or quality defects. About 10% of refused food products by the US FDA in 2001 - 2002 were seafood products, in which the most common reason for the import refusal is "filth" (Table 3), which describes that the product appears to consist in whole or in part of filthy, putrid or decomposed susbances. Although there are not statistical details for each kind of product in the rejections, microbial spoilage is assumed to be the main cause of filth. The second rejection reason was again *Salmonella* (Huss *et al.* 2004).

Table 2: Seafood import refusals by the US FDA from July 2001 to June 2002 (Huss *et al*. 2004).

| Year | Month | No. refused | | No. of seafood import refusals according to reason | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total[1] | Seafood | Filthy | *Salmonella* | *Listeria* | Histamine | Poison | Other |
| 2001 | July | 1497 | 122 | 74[2] | 20 | 5 | 2 | 4 | 21 |
| | Aug | 954 | 146 | 79 | 40 | 3 | 3 | 4 | 25 |
| | Sep | 906 | 59 | 27 | 14 | 7 | 0 | 2 | 11 |
| | Oct | 1082 | 136 | 59 | 50 | 2 | 3 | 4 | 26 |
| | Nov | 1079 | 121 | 51 | 39 | 4 | 0 | 1 | 26 |
| | Dec | 826 | 83 | 57 | 18 | 2 | 2 | 5 | 7 |
| 2002 | Jan | 1452 | 177 | 84 | 71 | 2 | 6 | 1 | 42 |
| | Feb | 1569 | 184 | 84 | 35 | 12 | 4 | 0 | 64 |
| | Mar | 1630 | 213 | 90 | 38 | 8 | 4 | 4 | 73 |
| | Apr | 1381 | 126 | 60 | 20 | 0 | 0 | 5 | 43 |
| | May | 1621 | 174 | 72 | 41 | 1 | 1 | 5 | 64 |
| | Jun | 1525 | 143 | 80 | 41 | 3 | 2 | 2 | 34 |

*1: Total of food consignment refusals*

*2: Number of rejections where "filthy" is stated as a reason; note that some product rejections have several reasons*

Likewise, the number of alerts for food imported into the EU from third countries, which are states that are neither Member States nor Associated States of the EU, increased steadily in the period 1999 – 2001 and exploded in 2002 (Table 3). Microbiological contaminants and chemical residues are the two leading causes for the alerts (44.8% and 41.4% respectively) (Huss *et al.* 2004). Those data show that the sanitary and food hygienic conditions in handling and processing of fish in third countries are still inadequate.

Table 3: Causes of rejection/detention of seafood imported into the EU during the period January 1999 - June 2002 (Huss *et al.* 2004).

| **Cause of detention/rejection** | **No. of rejections / detentions** | | | | **Average of rejections/year** | |
|---|---|---|---|---|---|---|
| | **1999** | **2000** | **2001** | **2002** | **No. of cases** | **%** |
| Microbial | 59 | 53 | 49 | 47 | 52 | 41.4 |
| Chemicals / residues | 13 | 15 | 34 | 158 | 55 | 44.8 |
| Parasites | 1 | 13 | 11 | 7 | 8 | 6.4 |
| Others | 6 | 13 | 18 | 5 | 11 | 8.4 |
| **Total** | **79** | **94** | **112** | **217** | **126** | |

In the period from 1999 to June 2002, Asian seafood exporting countries accounted for 70% of the alert cases, followed by Africa (18%), the Americas (9%), Europe (non-EU) (3%) and Oceania (1%). Meanwhile by regions in 2000, the export volume of Asia accounted for only 15% of the total export from third countries, still behind American countries (23% in which 6% was for North America and 17% for Latin America) and Africa (20%) (Huss *et al*. 2004). Those facts indicate a strong necessity for improving further the hygienic conditions throughout the whole fishery production chain as well as strengthening the official control systems in developing countries, especially in Asia.

### 3.2 The importance of hygiene in fishery quality management

Currently, an increase of international food trade and globalisation has brought important social and economic benefits but also makes the spread of foodborne illnesses around the world easier. Food safety, including food hygiene, is one of the main concerns facing fishery industries today. Consumer awareness and demands about the safety of their food is increasing. In global trade, food safety is not only a consumer concern but also a prerequisite for a properly functioning market (Huss *et al.* 2004).

Food safety serves as a prerequisite tool for protecting consumer health as well as the reputation of producers and the interests of those involved in processing and marketing foodstuffs. As mentioned above, food hygiene is an important part of food safety and GHP is always one of the foundations of all food safety management systems in fishery production businesses. The Codex Alimentarius Commission also recommends effective hygiene control as a vital tool to avoiding adverse effects to human health by foodborne illness (Codex 2003).

### 3.3 Official control: a govermental tool to assure fishery product safety and quality

With the constantly increasing amount of information available about food and related matters, there is a greater awareness among consumers regarding issues of food safety and quality. While previously, consumer concerns had focused on "visible" matters only such as underweight contents, size variations, misleading labelling, poor colours or tastes, they now are worried more about "invisible" problems such as micro-organisms, banned drug residues, environmental contaminants such as pesticides, heavy metals, etc. Consumers demand that governments take legislative action to minimise foodborne health hazards and ensure the quality of imported food products (FAO and WHO 1999).

With the blossoming of consumer protection groups and organisations, both internationally and nationally, there is growing pressure on governments all over the world to protect communities from foodborne diseases and poor quality foods. In addition, foodborne outbreaks and quality problems can damage trade and tourism, destroy the credibility of importers, increase commercial barriers in importing countries as well as produce waste because of food spoilage (FAO and WHO 1999).

In order to overcome the problem mentioned above, competent authorities all over the world have set up adequate "from farm to forks" control and monitoring measures. The EU, US and Japan, three of the most important fish markets whose imports amount to 75 – 80% of the total fishery import value in the world (FAO 2003), are pioneers in food safety management reforms with many new rules issued in recent years. In the EU, new health rules affecting the production, import and placing on the market of food products have been contained in a large number of directives and regulations related to technical requirements for operational conditions and procedures of HACCP systems, the responsibilities of manufacturers and obligations of competent authorities, including official control measures.

# 4 THE NEW EU LEGISLATION ON FOOD HYGIENE AND OFFICIAL CONTROL: INTRODUCTION AND BASIC REQUIREMENTS

## 4.1 Review of international legislation on food hygiene and official control

### *4.1.1 The WTO agreements*

Harmonisation of food standards and legislation is always one of the prerequisites to facilate international trade, increase free movement of food and reduce trade barriers while still improving protections on custommer health. Therefore, the WTO agreements on multilateral trade negoatiations, which were established in April 1994 by the Marrakesh Argreement of the Uruguay Round, encourage international harmonisation in this field (FAO and WHO 2003 and 1999).

Two important WTO agreements related to food safety and quality, included among the Multilateral Agreements on Trade in Goods, which are annexes of the Marrakesh Agreement, are the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) and the Agreement on Technical Barriers to Trade (TBT Agreement). The SPS Agreement states that governments have the right to take necessary sanitary and phytosanitary measures to protect human health but are not allowed to discriminate by applying different requirements to different countries. The TBT Agreement requires assurance that technical regulations and standards do not create unnecessary obstacles to trade (FAO and WHO 1999).

The agreements mentioned above are two mandatory agreements that any WTO member, including the EU and Iceland, must adopt, not only in legislative aspects but also in implementation. Vietnam in its endeavours to access the WTO in 2006 also needs to comply with both agreements as soon as possible.

### *4.1.2 The Codex Alimentarius Commission (CAC) standards, codes of practices and guideliness*

The CAC was established by the Eleventh Session of the Conference of FAO in 1961 and the Sixteenth World Health Assembly in 1963. With the purpose of protecting consumer health against foodborne hazards as well as ensuring fair practices in the food trade, the CAC developed and issued many standards, codes of practice and guidelines related to many fields of food production, including food hygiene (FAO and WHO 2003 and 1999).

One of the most important documents of CAC is the General Principles on the use of food additives, addition of essential nutrients to foods as well as food import and export inspection and certification. In addition, there are large numbers of CAC documents which are Codex Standards. They usually state characteristics of products, including fishery products, or mention to some aspects related to food safety and quality such as Maximum Residue Limits (MRLs), food additives, contaminants and toxins in foods, labelling, food analysis methods and sampling. Codes of Practice, most of which are codes of hygienic practice, provide guidance on the production of food that is safe and

suitable for human consumption. Among them, the most basic document is the Codex General Principles of Food Hygiene, which introduces the use of the Hazard Analysis and Critical Control Point (HACCP) applying to all foods. The CAC also issued many Codex Guidelines which contain principles which set out policies in certain key areas and interpretations of principles or of the provisions of the Codex general standards (FAO and WHO 2003 and 1999).

For the purpose of food safety standards and legislation harmonisation, the SPS and TBT Agreements have identified and chosen standards, guidelines and codes of practice as references to evaluate national measures, regulations of WTO members and settle international disputes (FAO and WHO 1999). With this recognition, the Codex international documents have become an integral part of the WTO legal framework and are used increasingly in food safety and official control fields.

## 4.2 The new EU legislation package on food hygiene and official control for the shrimp production sector

### *4.2.1 Review of the new EU legislation package on food hygiene and official control*

With regard to seafood borne diseases and increasing consumer knowledge on food safety in recent times, food businesses have been required to increase hygiene practices and conditions. Therefore, over the years legislation on hygiene in the fisheries sector has been continuously tightened, especially in major world fish markets such as the EU and US.

In recent years, the EU has adopted a large number of laws which contain common principles to ensure food safety for products imported or marketed within the EU. These laws have recently been subjected to a complete recast with the view to simplify them and eliminate specific inconsistencies which have arisen during implementation (FAO 2003). In 2002 an important regulation on food law and food safety was adopted. This Regulation (Regulation (EC) No. 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and procedures in matters of food safety, 28 January 2002 – called hereafter Regulation 178/2002) raises general principles of food law as well as the general procedures relating to food safety throughout the production chain of food and animal feed (Huss H. H. *et al*. 2005). The legislation also establishes the European Food Safety Authority (EFSA), whose functions are to provide scientific reference points for food-related control and evaluation. This Regulation is the legal framework and foundation for new legislative measures on food and feed safety and control of the food chain (Huss H. H. *et al*. 2005). Under this Regulation, four regulations and one directive laying down detailed requirements on official food controls and food hygiene were adopted in 2004 and will be enforced from 1 January 2006, including:

1. Regulation (EC) No. 852/2004 on hygiene of foodstuffs, 29 April 2004 (called hereafter Regulation 852/2004)
2. Regulation (EC) No. 853/2004 on specific hygiene rules for food of animal origin, 29 April 2004 (called hereafter Regulation 853/2004)
3. Regulation (EC) No. 854/2004 on rules for the organisation of official controls on products of animal origin intended for human consumption, 29 April 2004 (called hereafter Regulation 854/2004)
4. Regulation (EC) No. 882/2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules, 29 April 2004 (called hereafter Regulation 882/2004)
5. Directive 2004/41/EC repealing certain directives concerning food hygiene and health conditions for the production and placing on the market of certain products of animal origin intended for human consumption and amending Council Directives 89/662/EEC and 92/118/EEC and Council Decision 95/408/EC, 21 April 2004 (called hereafter Directive 2004/41)

In addition, there is a key Directive which was issued before these legislative measures but is related closely to them - Directive 2002/99/EC laying down the animal health rules governing the production, processing, distribution and introduction of products of animal origin for human consumption, 16 December 2002 (called hereafter Directive 2002/99). Seven Regulations and Directives make an entire package on food hygiene and official control for food products produced in or marketed within the EU. With the changes laid down in the new legislation package, the EU intends to reach the following goals:

- To modernise and consolidate the EU food hygiene and official control legislation and focus controls on aspects that are necessary for public health protection
- To make more clear the duties of food businesses as well as competent authorities to ensure food safety and animal health in food production, supply in or introduction into EU
- To apply effective and proportionate controls throughout the food chain, from primary production to sale or supply to the final consumer (FSA 2005)

In those new laws, general rules and measures on food hygiene for all stages of the production process, from primary production up to and including sale to the final consumer, are laid down in Regulation 852/2004. Supplementing this Regulation, Regulation 853/2004 raises specific hygiene rules for each sector of animal-origin, including bivalve molluscs and fishery products.

Meanwhile, concerning official control measures, Regulation 854/2004 establishes a framework for organisation of official controls on products of animal origin intended for human consumption, including obligations on competent authorities as well as food business operators, and laying down specific rules for each sectorial production of animal-origin food, including bivalve molluscs and fishery products. This Regulation also includes procedural requirements on the importation of products of animal origin from third countries. Supplementing this Regulation, Regulation 882/2004 establishes general rules for the performance of official controls to verify compliance with the EU rules

related to food safety assurance and communication. This Regulation focuses on detailed requirements of responsibilities of the competent authorities, including the Member States' and third countries' authorities, to comply with the basic principles raised in Regulation 178/2002.

Directive 2004/41 is a dash to accomplish the "hygiene and official control package". This Directive states to repeal 16 existing directives and amend or partly replace two directives on provisions related to food hygiene and health conditions for the production and placing on the market of certain animal-origin foods intended for human consumption.

Adopted before those regulations and Directive 2004/41 briefed above, Directive 2002/99 lays down general animal health rules governing all stages of production, processing and distribution within the Community and the introduction from third countries of animal-origin food intended for human consumption. This Directive was issued in order to prevent the occurrence and introduction of animal diseases into the EU. Both Regulation 178/2002 and Directive 2002/99 are important laws issued in recent years and will still have effect in the future.

In the next parts of the study, the requirements related to animal-origin food hygiene and official control aspects applying to the production of fishery products to import to the EU, including stages from animal food primary production to export ports, will be reviewed and summarised.

### *4.2.2 Scope of the new EU hygiene and official control package*

Subjects that must comply with the new EU hygiene and official control legislation are food businesses and food business operators at all stages of production, processing and distribution within the EU as well as the introduction from third countries of products of animal origin intended for human consumption, which meet the following definitions:

- "Food business" means any undertaking, whether for profit or not and whether public or private, carrying out any stage of production, processing and distribution of food."
- "Food business operator" means the natural or legal persons responsible for ensuring that the requirements of food law are met within the food business under their control." (Article 3.2 and 3.3 - Regulation 178/2002).

However, there are some activities excluded from the scope of the EU legislation:

- Primary production for private domestic use (Article 1.2 - Regulation 852/2004, Article 1.2 - Regulation 853/2004 and Article 1.3 – Regulation 178/2002)
- The domestic preparation, handling or storage of food for private domestic consumption (Article 1.2 - Regulation 882/2004, Article 1.2 - Regulation 853/2004 and Article 1.3 – Regulation 178/2002)

- The direct supply, by the producer, of small quantities of primary products to the final consumer or to local retail establishments directly supplying the final consumer (Article 1.2 - Regulation 882/2004, Article 1.2 - Regulation 853/2004). However they are covered by the scope of Regulation 178/2002 so they still are subject to the requirements relating to placing unsafe food on the market laid down in Article 14 of Regulation 178/2002.

### *4.2.3 Basic requirements on fishery hygiene of the new package*

Requirements related to the food hygiene of food production businesses are covered in Regulation 178/2002, Regulation 852/2004 and 853/2004.

#### 4.2.3.1 General hygiene requirements for primary producers

According to Article 3.17 of Regulation 178/2002, "primary production" means the production, rearing or growing of primary products including harvesting, milking, farmed animal production prior to slaughter, hunting, fishing and the harvesting of wild products. Under the new EU legislation, primary production businesses are subject to different requirements than other types of food businesses, essentially concerning the hygiene requirements in registration, production and record keeping. Requirements on traceability and responsibilities regarding cooperation with competent authorities of primary production business operators are also the same as the requirements of other food business operators raised in Article 18 of Regulation 178/2002, Annex II of Regulation 853/2004 and Article 6 of Regulation 852/2004 (for details, please see item 3.2.3.3).

a. Registration

Primary production businesses must register the businesses with the competent authority (Article 6.1 - Regulation 852/2004). Business operators must ensure that any changes to the details previously supplied e.g. a change of food business operator, a change to the food operations etc. are notified to the competent authority (Article 6.2 – regulation 852/2004).

b. Production

The specific detailed requirements on hygiene for primary production are laid down in Annex I, Part A of Regulation 852/2004. Under this part, primary food business operators are to ensure that primary products are protected against contamination (Section II, item 2) and control of hazards that have implications for human health such as contamination arising from the environment and inputs/outputs of the culture/harvest progress, animal/plant health and welfare (Section II, item 3). In compliance with those requirements, primary animal production businesses have to set up programmes for the monitoring and control of zoonoses and zoonotic agents as well as take adequate measures (Section II, item 3 and 4). Key matters which the businesses must carry out are:

- keep clean and, where necessary after cleaning, disinfect, in an appropriate manner, any facilities, equipment, containers, crates, vehicles and vessels
- use potable water, or clean water, whenever necessary
- ensure that staff handling foodstuffs are in good health and undergo training on health risks
- prevent animals and pests from causing contamination
- store and handle wastes and hazardous substances in a suitable manner and use feed additives and veterinary medicinal products correctly, as required by the relevant legislation (Annex I, Part A, Section II, item 4)
- keep raw materials and all ingredients in appropriate conditions designed to prevent harmful deterioration and protect them from contamination. (Annex II, Chapter IX, item 2)

Concerning vessels, designs, arrangements and constructions of vessels, equipment and facilities of vessels must not cause contamination of the products. All food contact surfaces of vessels must be made of suitable corrosion-resistant material that is smooth and easy to clean and their surface coatings must be durable and non-toxic. (Annex II, Section VIII, Chapter I, item A and B- Regulation 853/2004).

c. Record keeping

Primary production businesses are required to keep and retain records relating to measures put in place to control hazards in an appropriate manner and for an appropriate period based on the nature and size of the business. They must also make relevant information, records available to the competent authorities on request (Annex I, item 7 - Regulation 852/2004). In compliance with those requirements, animal culture business operators must keep records on:

- the nature and origin of feed fed to the animals;
- veterinary medicinal products or other treatments administered to the animals, dates of administration and withdrawal periods;
- the occurrence of diseases that may affect the safety of products of animal origin;
- the results of any analyses carried out on samples taken from animals or other samples taken for diagnostic purposes, that have importance for human health;
- any relevant reports on checks carried out on animals or products of animal origin (Annex I, item 8 - Regulation 852/2004):

4.2.3.2 General hygiene requirements for businesses after primary production

Hygiene requirements set up by the new EU legislation are not much different than hygiene requirements in the old legislation issued previously such as Directive 91/493/EEC dated 22 July 1991, Directive 93/43/EEC dated 14 June 1993, Decision 94/356 dated on 20 May 1994 and Directive 92/48/EEC dated 16 June 1992 but they are made more clearly and are more detailed to enable food businesses to understand and comply. However, there are also certain aspects made more strictly, including traceability aspects and requirements for raw material auctions/wholesale markets.

a. Requirements for food safety management systems

Food business operators must monitor the food safety of products and processes under their responsibility (Article 3 – Regulation 852/2004). Those operators, excluding businesses in primary production, are required to develop, implement and maintain food safety management procedures within their establishment which are based on the HACCP principles (Article 5.1- Regulation 852/2004). Auctions/wholesale markets are also coved by this requirement.

In order to ensure that food or feed products satisfy the relevant requirements of food law, food and feed business operators at all stages of production, processing and distribution are required to carry out internal verification activities (Article 17.1 - Regulation 178/2002).

b. Approval of establishments

Food businesses at all stages of the food production chain, excluding primary production, transport operations, the storage of products not requiring temperature-controlled storage conditions, have to be required approval by the competent authority (Article 4.2 – Regulation 853/2004). Consequently, unlike the previous legislation in which a cold store business is not required to have approval and approval number from the competent authority, it is also covered in the requirements of establishment approval of the new legislation, except it is located in a handling/processing establishment.

Business operators must also ensure that any changes to the details previously supplied e.g. a change of food business operator, a change to the food operations etc. are notified to the competent authority (Article 6.2 – Regulation 852/2004).

c. Identification marks and traceability

Requirements on traceability and identification marks in the new legislation (Article 18 – Regulation 178/2002; Article 5, item 1 and Annex II, section I - Regulation 853/2004), including application, form and method of marking, are also clearer and closer than in previous legislation (Article 3 and Annex, Chapter VII – Directive 91/493/EEC). Under the new legislation, food and feed businesses at all stages of production, processing and distribution must establish and carry out traceability procedures for of food, feed, food-producing animals, and any other substance intended to be added into food or feed. In addition, food and feed business operators must also be able to identify any person from whom they have been supplied with a food, a feed, a food-producing animal, or any substance intended to add into their food or feed products as well as to who their products have been supplied. This information must be available to the competent authorities on request (Article 18.2 and 18.3 - Regulation 178/2002). All fishery products must not be placed on the market unless it has an identification mark (Article 5, item 1 - Regulation 853/2004). Application of identification marks must be verified in all establishments approved by competent authorities (Article 4.6 – Regulation 854/2004).

d. Raw material management

Like the requirements of Directive 93/43/EEC, the new legislation requires that raw materials and all ingredients stored in a food business must be kept in appropriate conditions designed to prevent harmful deterioration and protect them from contamination (Annex II, Chapter IX, item 2 - Regulation 852/2004). However, unlike Directive 93/43/EEC, the new legislation also lays down supplement conditions on raw material reception. Concerning the aquaculture fishery, food business operators must not accept raw material without necessary information which has to be linked with information kept in aquaculture businesses, including:

- culture conditions of the business
- the animal health status and the occurrence of diseases if any
- veterinary medicinal products or other treatments chemicals, their use dates and withdrawal periods
- the results of any analysis of samples taken from the animals, including samples taken in the framework of the monitoring and control of zoonoses and residues
- production data, when this might indicate the presence of disease
- the name and address of the private veterinarian normally attending the business

(Annex II, Section III – Regulation 853/2004)

According to the new legislation, if a food business considers or has reason to believe that the raw material which it has imported for production is not in compliance with the food safety requirements, it must immediately initiate procedures to withdraw the relevant food in question from the markets and inform the competent authorities thereof. (Article 19 - Regulation 178/2002)

e. Other hygiene requirements

Other hygiene requirements for processing plants, factory vessels, cold transportation and cold store businesses in the new legislation are more detailed but not much different from the requirements set up in the old legislation (Directive 91/493/EEC dated 22 July 1991, Directive 93/43/EEC dated 14 June 1993, Decision 94/356 dated on 20 May 1994 and Directive 92/48/EEC dated 16 June 1992). Those requirements mention the remaining fields of GHP of a business, including requirements of food contact surfaces; personal hygiene and health conditions; the exclusion of pests; safety of water and ice; prevention of cross-contamination and adulterant; labelling, storage and use of toxic compounds and training for relevant staff of the business.

Concerning auction and wholesale markets, besides hygiene requirements which are similar to those laid down in Chapter II, item 3 of Directive 91/493/EEC, there are certain supplemental requirements in the new legislation which are not required in the previous legislation. Under the new legislation, auction and wholesale market businesses must have lockable facilities for the refrigerated storage of detained fishery products and separate lockable facilities for the storage of fishery products (Annex II, Section VIII, Chapter II, item 2 (a)(i) – Regulation 853/2004)

### *4.2.4 Basic requirements on official control of the newEU legislative package*

Requirements related to the food hygiene of food production businesses are mostly covered in Regulation 178/2002, 854/2004, 882/2004 and 2002/99.

a. Requirements for third countries importing fishery products into the EU

The new EU legislation sets out certain basic requirements for third countries which are allowed to import food products into the EU market. Under the new legislation, food imported for placing on the market within the EU must comply with:

- the relevant requirements of the EU food law, or
- conditions recognised by the EU to be at least equivalent with food produced in the EU or with requirements contained in a specific agreement between the Community and the exporting country.

(Article 11 – Regulation 178/2004).

This requirement of the Regulation 178/2002 is detailed in Regulation 854/2004, 882/2004 and 2002/99, thereof competent authorities of exporting countries must provide appropriate equivalence guarantees, including:

- the legislation of the third country
- the organisation of the third countries' competent authorities, their powers, independence and effective enforcements
- the competent authority facilities for effectively verifying the implementation of their legislation in force
- the training of relevant staff in the performance of official controls
- the existence and operation of documented control procedures and control systems based on priorities, including procedures of animal health control and animal outbreak notification

(Article 46.1 - Regulation 882/2004, Article 11.2, 4 - 854/2004, Article 8.1 - Regulation 2002/99)

When approving a third country to import animal-origin food products into the EU, the following factors are also considered:

- the actual health conditions during the production, storage and dispatch of fishery products intended for the EU, including animal health and zoonoses control situation
- the extent and operation of official controls on imports of animals and their products

(Article 46.1 - Regulation 882/2004, Article 11.2, 4 - 854/2004, Article 8.1 - Regulation 2002/99)

- the assurances that the third country can give regarding compliance with standards of the EU (Article 46.1 - Regulation 882/2004), including:

- the assurances of the third country authorities that establishments that are authorised to export to the EU comply and continue to comply with the EC requirements and that the list of such establishments is kept up-to-date and communicated to the Commission (Article 12, paragraph 2 of Regulation (EC) No 854/2004)
- The certification requirements are satisfied, in which the original version of a certificate must accompany the import consignments of animal origin products, be signed, bear an official stamp of the competent authority and be issued before the consignment leaves the control of the competent authority (Article 14 and Annex VI - Regulation 854/2004)

b. Inspection and non-compliance remedy action

Competent authorities are required to maintain a system of official controls and other appropriate activities to monitor and verify that the relevant requirements of food law are fulfilled by food/feed businesses at all stages of production, processing and distribution (Article 17.2 - Regulation 178/2002). Official controls on the production and placing on the market of fishery products are to include regular checks on the hygiene conditions of landing and first sale; inspections at regular intervals of vessels and establishments on land, including fish auctions and wholesale markets, and checks on storage and transport conditions (Annex III, Chapter 1, item 1 – 854).

If the competent authority identifies non-compliances, it must take appropriate action to ensure that the operator remedies the situation (Article 54 - Regulation 882/2004 and Article 9 - Regulation 854/2004).

Competent authorities must also lay down the rules on measures and penalties applicable to infringements of the food and feed law and other provisions relating to the protection of animal health and welfare as well as take all measures necessary to ensure that they are implemented (Article 17.2 - Regulation 178/2002 and Article 55 - Regulation 882/2004).
In order to ensure that official controls carried out by the competent authority can be performed effectively, food businesses are required to offer necessary assistance to the authority, including:

- give the inspectors access to all buildings, premises, installations or other infrastructures
- make available any documentation and record required under the present regulation or considered necessary by the competent authority for judging the situation (Article 4.1 - Regulation 854/2004)

To ensure that this requirement is complied with, the competent authority must issue necessary legal procedures in order to ensure that their staff can access the premises and documentation kept by feed and food business operators so as to be able to accomplish their tasks properly (Article 8, item 2 - Regulation 882/2004).

c. Approval of establishments

Each approved business is given an approval number to which codes may be added to indicate the types of products of animal origin manufactured (Article 3.3 - Regulation 854/2004). The competent authority must keep the approval numbers of establishments under review when carrying out official controls such as withdrawing the establishment's approval, suspend the withdrawal (Article 3.4 - Regulation 854) and maintain up-to-date lists of approved establishments, including their approval numbers and other relevant information, to make them available to EU authorised representatives (Art 3.6 - Regulation 854).

d. Training for official control staff

One key equivalence requirement of the importing countries is training the relevant staff in the performance of official controls. In order to ensure this equivalence, the competent authority must supply appropriate and updated training for its relevant staff performing official controls, including knowledge and skills to undertake their duties competently and to carry out official controls in a consistent manner as well as attitude for multidisciplinary cooperation (Article 6 - Regulation 882/2004).

e. Delegation for inspection bodies and official laboratories

The new legislation allows that the competent authority may delegate specific tasks concerned with official controls to one or more control body (Article 5.1 - Regulation 882/2004).

However assigned control bodies must ensure following requirements:

- They have the expertise, equipment and infrastructure required to carry out the delegated tasks;
- They have a sufficient number of suitably qualified and experienced staff;
- They are impartial and free from any conflict of interest as regards the exercise of the tasks delegated to it;
- They are accredited in accordance with European Standard EN 45004 “General criteria for the operation of various types of bodies performing inspection” and/or another standard related to the delegated tasks (European Standard EN 45004 was transmitted fully from Standard ISO 17020);
- The control body communicates the results of the controls carried out to the competent authority on a regular basis and whenever the competent authority so requests. If the results of the controls indicate non-compliance or point to the likelihood of non-compliance, the control body shall immediately inform the competent authority;
- There is efficient and effective coordination between the delegating competent authority and the control body.

(Article 5.2 - Regulation 882/2004)

In order to comply with the above requirements of control bodies, the delegating competent authorities shall organise audits or inspections of control bodies as necessary. If the results show that such bodies are failing to carry out their tasks properly and cannot take appropriate and timely remedial action, the delegating competent authority shall withdraw the delegation without delay (Article 5.3 - Regulation 882/2004).

The new legislation also requires that competent authorities designate official laboratories that may carry out the analysis of samples taken during official controls (Article 12.1 - Regulation 882/2004). These official laboratories must operate, be assessed and accredited in accordance with the following European standards:

- EN ISO/IEC 17025 on "General requirements for the competence of testing and calibration laboratories" (This standard was revised into the Standard ISO/IEC 17025:2005 in last year)
- EN 45002 on "General criteria for the assessment of testing laboratories"
- EN 45003 on "Calibration and testing laboratory accreditation system — General requirements for operation and recognition"

The accredited testing criteria have to relate to individual tests or groups of tests
(Article 12.2 and 12.3 - Regulation 882/2004)

f. Transparency and confidentiality

Competent authorities are required by the new legislation to ensure that they carry out their activities with a high level of transparency. Therefore, their relevant information must be made available to the public as soon as possible to enable the public access to:

- information on the control activities of the competent authorities and their effectiveness
- information on the nature of the risk to health in case a food/feed presents a risk for human or animal health; identification of the risks which may be present in the food/feed and the measures which are taken or will be taken to prevent, reduce or eliminate those risks.

(Article 7.1 - Regulation 882/2004 and Article 10 - Regulation 178/2002)

## 5 AN OVERVIEW OF THE ICELANDIC FISHERIES SECTOR

Iceland was the twelfth largest fishing nations in the world in 2004 – achieving 2.4% of world catches with more than 95% of the catches being exported. Currently, Iceland is the thirteenth in the world in terms of export (Ministry of Fisheries of Iceland 2005). Fisheries production in Iceland has been growing continuously since the beginning of the last century. The most valuable export resources in Iceland include cod, capelin, shrimp, redfish, haddock, saithe and herring. The fisheries sector contributed about 8% to the GDP of Iceland in 2004 with cod being the most important export product (Ministry of Fisheries of Iceland 2005).

Currently, there are about 10,000 people working in fishing and fishery processing sections. In addition, there are many people working in businesses engaged in different areas of seafood production such as aquaculture, retail, seafood production services such as chemical, packaging, container supply, transportation, etc. The main fishery products of Iceland, at random, are quick frozen fillets, portions, fillet blocks, speciality dishes, salted fish fillets, iced whole fish, fish fillets or portions and whole quick frozen uncooked or cooked shrimps, dried bones and heads, fishmeal and oil. Icelandic fishery products are exported mainly to the EU, USA and Asian countries and to a smaller extent to Africa (mainly low value products such as dried cod bone and head products). The most important market of Iceland is the EU making up 77% of the total seafood export value in 2004 (Ministry of Fisheries of Iceland 2005) and Iceland has been applying the EU legislation for food safety in fishery production.

Fishing and processing activities are controlled by a permit system administered by FISKISTOFA. About 1600 ships had been licensed to operate in the EEZ of Iceland in 2004 (Ministry of Fisheries of Iceland 2005). Fishery plans in Iceland must have fishing licences issued by the Directorate of Fisheries (FISKISTOFA) and under inspection of inspection bodies authorised by FISKISTOFA. The inspection bodies provide FISKISTOFA with regular information on the state of the licensed producers.

## 6 AN OVERVIEW OF THE VIETNAMESE FISHERIES SECTOR

Vietnam is endowed with an abundant supply of water resources that are ideal for fisheries and aquaculture. It has a 3,260 km long coastline, 12 lagoons, 112 estuaries, 1 million $km^2$ of Exclusive Economic Zone (EEZ) and more than 4,000 islands which form many bays, straits and lagoons. There are an additional 120,000 ha of small lakes, ponds, channels, 340,000 ha of large lakes, 580,000 ha of agricultural ecosystems where combined agriculture and fish farming may be practiced in an effective way (Lem 2004). Vietnam also has an abundant labour force with a relatively young population of over 80 million people (FAO 2005).

With those advantages, the fisheries sector has become one of the key industries of Vietnam. Fishery products are the third largest export commodity in terms of value - after textile-garments and crude oil - and accounted for over 4% of GDP of Vietnam in 2004

(GSO 2005). Earnings from seafood exports increased continuously by year (Figure No. 4), from 761.5 million USD in 1997 to 2.4 billion USD in 2004 (FICEN 2005) and 2.5 billion USD by 5 December 2005 (VNA 2005). According to the plan of the Ministry of Fisheries of Vietnam, the fishery export turnover of Vietnam in 2010 will be 4 billion USD (People Newspaper 2005).

Currently, Vietnam is the third largest fisheries exporter in Asia – after China and Thailand - and the eighth in the world (Ministry of Fisheries of Iceland 2005). Both the volume and value of the exports has been continuously increasing, in which shrimp products usually are in first position with 141,197 tonnes and 1.3 billion USD, making up over 54% of the fishery turnover in 2004 (FICEN 2005).

At present, Vietnamese fishery products have been exported to around 105 countries and territories (Saigon Liberation Newspaper 2005). Japan, US and the EU are the biggest importers and export values to these three countries reached about 32%, 25% and 10% respectively of the total export turnover in 2004 (FICEN 2005). In 2005, export turnover to the EU was about 300 million USD, or 12% of the total fishery export turnover (Saigon Liberation Newspaper 2005). With the highest export values in the past years, shrimp products are the most important products of the Vietnamese fisheries sector, always making up over 50% of the total fishery export value.

Although a big seafood exporter, Vietnam still has imported seafood products to satisfy the demand for:

- New and luxurious products, mainly salmon, caviar, etc. from Norway, France, US and other countries.
- Raw material for processing and re-export from neighbouring countries such as China and India.

The value of fisheries imports to Vietnam in 2003 was 52.1 million USD (FAO 2005). Imported raw material quality and origin management is an acute problem to processing plants and the authorities in Vietnam.


Figure 4: Fishery exports of Vietnam from 1997 - 2004 (FICEN 2005).

Fisheries production has been growing continuously since the 1990s. In estimation, the total fishery production in 2005 was about 3.3 million tonnes, in which marine fisheries are the biggest contributor to fisheries production (1.75 million tonnes), followed by aquaculture (1.36 million tonnes) while inland fisheries only comprise about 190,000 tonnes). According to the statistic data in 2005, over 4 million people are working in aquaculture and fishing and hundreds of thousand are working in other related services (People Newspaper 2005).

At present, Vietnam has 439 export seafood processing plants, of which 70% are located in the southern region; 24% in the central region and 6% in the north. On 5 December 2005, Vietnam had 171 factories that had qualified for exporting to the EU, 222 factories that had been recognised to meet hygienic condition standards by MOFI and had qualified for exporting to Korea, 295 factories that had qualified for exporting to China and 300 factories that had been applying the HACCP system (Saigon Liberation Newspaper 2005).

# 7 COMPLIANCE WITH THE NEW EU LEGISTATION IN THE PRODUCTION OF SHRIMP PRODUCTS INTENDED FOR THE EU MARKET

## 7.1 Assessment of the Icelandic fisheries sectors' compliance with the new EU requirements for wild shrimp products

Caught shrimp production makes up only a small part of the total caught fishery production of Iceland (1.24% in 2004) (Statistic Iceland 2006) but its production has increased significantly in the past years. Caught crustacean production of Iceland, in which shrimp accounts for the greatest part, was only 4,607 tonnes in 1970 but in 2004 it was 32,678 tonnes (sevenfold increase) while the total fishery production increased 1.4 times in this period, from 1,198,304 tonnes to 1,727,785 tonnes (Ministry of Fisheries 2005). In past years, both the authorities and the industry of Iceland have enforced remarkably quality management activities in shrimp production. Iceland has made changes in safety quality management modes to meet the requirements of customers and markets, from the final product check mode to the control mode in all stages of production and distribution, including fishing, auctioning, handling and processing, transporting, storage and distribution. This part of the study is an assessment of the results, strong points and weak points in the Icelandic shrimp production sector in compliance with the new legislation package of the EU, Iceland's most important market.

### *7.1.1 Legislation system*

Iceland signed the European Economic Area (EEA) Agreement in 1992 which was entered into force on 1 January 1994 (Ministry of Foreign Affair of Iceland 2006). This Agreement requires the signatory states to comply with EU legislation. All new Community legislation in areas covered by the EEA is integrated into the Agreement through an EEA Joint Committee decision and subsequently becomes part of the national legislation of the EEA member states (EU 2004). Through participation in the EEA, the Icelandic legislation system has been adjusted to adapt to EU legislation. There are a number of main Acts in Iceland creating the legal basis for all activities in the food sector in production, storage and distribution, including official control and environment protection. They are the Foodstuffs Act No. 93/1995, Act No. 7/1998 on hygiene and pollution prevention, Act No. 25/1993 on animal diseases, Act No. 66/1998 on veterinarians, and Act No. 54/1990 on the import of live animals. The Foodstuffs Act is the most important of these, it sets up mandatory requirements for the food sectors to ensure food safety, quality and economic truth in labelling and information.

Under those Acts are regulations issued by Icelandic Ministries which establish more detailed requirements regarding the field mentioned above. Directive 91/493/EEC, one of the most important EU laws related to health conditions for the production and placing on the EU market of fishery products, is transmitted into Icelandic legislation by Act No. 55/1998 on the handling, processing and distribution of fishery products which entered into force 10 May 1998, Regulation 233/1999 on the handling, processing and

distribution of fishery products which entered into force 30 March 1999, and Regulation 558/1997 on own check systems in fishery production.

Act No. 55/1998, drafted based on EU Directives 91/493/EEC, 91/492/EEC and 92/48/EEC, is an important law of the Icelandic fisheries sector which gives a foundation for a number of Icelandic regulations on fishery hygiene and official control issued by the Ministry of Fisheries of Iceland, in which the most important laws are:

- Regulation No. 233/1999 which is mentioned above and amended by Regulation No 367/2001
- Regulation No. 849/1999 on control of import of fishery products amended by Regulation No. 387/2000
- Regulation No. 450/1997 on surveillance framework and working methods of accredited inspection bodies in the fish industry
- Regulation No. 238/2003 on farming of marine species amended by Regulation No. 485/2003

Besides these, there are certain laws issued by other Ministries in Iceland which also relate closely with hygiene and official control activities of the Icelandic fisheries sector:

- Regulation No 526/2003 concerning the animal health conditions governing the placing on the market of aquaculture animals and products (date of entry into force was 16 July 2003, issued by the Ministry of Agriculture)
- Regulation No 536/2001 on water intended for human consumption which was issued by the Ministry for the Environment and drafted based on Directive 98/83/EC
- Regulation No 665/2001 on action to be taken in the case of contagious diseases issued by the Ministry of Agriculture

Generally, the Icelandic legislation system on food hygiene and official control has been drafted based on EU legislation as required by the EEA Agreement. Therefore, it bears equivalence with EU legislation. However, the new EU legislation on food hygiene and official control in effect since 1 January 2006 has still not been transmitted into Icelandic legislation at the time of writing. FISKISTOFA is in the process of drafting regulations based on the EU legislation and intends to issue them in the third quarter of this year (Zoëga 2005).

### *7.1.2 Structure and activities of the authorities*

#### 7.1.2.1 Structure, functions and powers of the competent authorities

According to the Icelandic Foodstuffs Act, the responsibilities for planning and implementation of food safety in the field of catch seafood products in general and wild shrimp products in particular are divided between the Ministry for the Environment, the Ministry of Agriculture and the Ministry of Fisheries.

a. The Ministry for the Environment

The Ministry has responsibility for food legislation and control of domestic and imported retail food and enacts the Icelandic legislation on water intended for human consumption, including food processing water, as well as the monitoring of contaminants in foodstuffs. The Environment and Food Agency (EFA) under the Ministry for the Environment is the competent agency in monitoring the ocean area, including both catching areas and aquaculture areas.

b. The Ministry of Agriculture

The Ministry is responsible for enforcing activities in production and trade in live aquaculture animals, including control and monitoring of fish diseases as well as issuing licenses of fresh fishery farming. The Chief Veterinary Office (CVO), also called Veterinary Services under the Ministry of Agriculture, is the competent agency in matters related to trade and monitoring/control of fish diseases and seed, including inspections of fish farms. At present, the CVO has 15 District Veterinary Offices (DVOs) to implement functional activities at the local level. Besides, the Directorate for Freshwater Fisheries (DFF), being organised under the Ministry of Agriculture, is responsible for issuing licenses for farming of freshwater and anadromous species.

c. The Ministry of Fisheries

The Ministry is responsible for enacting Icelandic legislation and implementing governance activities in harvesting, processing and distribution of marine products. FISKISTOFA was established in 1993 after reorganisation of different authorities under the Ministry of Fisheries, it is the competent authority in matters related to handling, processing and distribution of marine products as well as fishery management. At the same time, FISKISTOFA is also responsible for operations of the Icelandic border inspection posts which control imports of fishery products into Iceland as well as issuing licenses for farming of marine species. In difference with CVO and EFA, this organisation does not have local or regional offices. FISKISTOFA is also in charge of collecting, processing and publishing fisheries data in collaboration with the Statistics of Iceland. FISKITOFA also performs verifications of inspection bodies. At present, two private inspection bodies conduct regular inspections of hygiene, equipment and own check systems in fishery processing establishments and fishing vessels on behalf of FISKISTOFA. The fishing management activities of FISKISTOFA are based on the scientific research results of MRI. MRI, a government institute under the Ministry of Fisheries, was established in 1965 and is responsible for conducting various types of marine research and provides scientific advice on marine resources and the environment. A chart of the governmental management system in the Icelandic fisheries sector is shown in Figure 5.

Essentially, the competent authorities of Iceland in food hygiene and official control are split clearly on tasks and given functions to implement those tasks. Although they are independent of each other, they still cooperate closely to carry out their designated tasks.

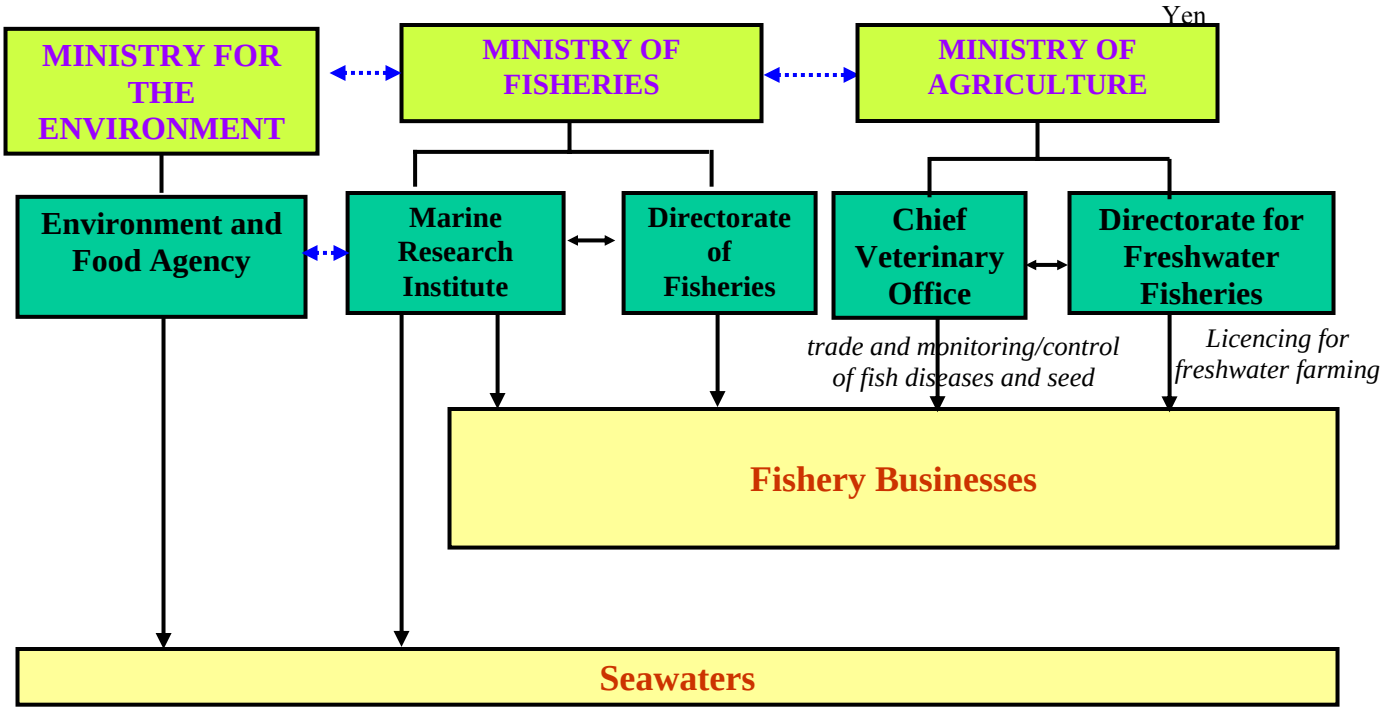


Figure 5: Important governmental management institutions in the Icelandic fisheries sector.

7.1.2.2 Production condition monitoring and control activities

a. Monitoring of ocean areas

EFA has been implementing a monitoring programme of ocean areas which has taken water samples every year and checked criteria for heavy metals and organic pollutants, in which the Icelandic sea is divided into specified water areas. Heavy metals have been monitored since 1989 while organochlorine compounds have been monitored since 1991. Criteria concerning plankton and HAB in Icelandic seawaters are monitored by the MRI. In case the EEA or MRI detects that a test value of any criterion is over its Maximum Residue Limit (MRL), the EEA or MRI will issue a notice of harvest area close to the relevant businesses.

b. Inspection of vessels, auctions and processing factories

In order to implement routine inspections of fishing vessels, freezer vessels, factory vessels, auctions and fishery processing factories, FISKISTOFA has approved two private inspection bodies, Frumherji HF and Sýni skoðunarstofa EHF, since 1998. Those bodies are accredited by the Icelandic Metrology and Accreditation Service and by the Swedish Board for Accreditation and Conformity Assessment (SWEDAC) according to ÍST EN 45004:1995 on general criteria for the operation of various types of bodies performing inspections.

Fishery processing factories and factory vessels are inspected at least four times per year while other kinds of vessels and auctions are inspected at least once or twice per year,

depending on their size. After finishing the inspection, the inspection bodies will send inspection reports to FISKISTOFA once per week by email or by fax in case there are only regular or minor deficiencies, but within 24 hours in cases serious deficiencies have been revealed. Inspection reports also inform deadlines to remedy the deficiencies. In case the business falls to remedy them, FISKISTOFA has the legal right to close these businesses down.

Inspection activities are uniformed by Regulation No. 450/1997 and the Inspection Manual issued by FISKISTOFA. This Manual, which has been regularly updated, includes inspection guides of kinds of fishery production businesses, as follows:

- General Manual, which sets up general principles and requirements for inspection
- Inspection Manual of shellfish production
- Inspection Manual of fishmeal oil production
- Inspection Manual of fishing vessels
- Inspection Manual of dried production

In order to harmonise inspection activities, FISKISTOFA verifies the effectiveness of the inspection bodies at least once a year. FISKISTOFA also arranges annual meetings between FISKISTOFA and the inspection bodies to discuss and evaluate the inspection reports of all inspections and the verification results.

7.1.2.3 Approval of establishments

*a.* Approval application and issue

According to Icelandic legislation, FISKISTOFA is responsible for approval of vessels, auctions, wholesale markets and fishery processing factories and for official inspections of these businesses. In order to obtain the approval of FISKISTOFA, the business must meet all requirements concerning appropriate premises, facilities, equipment as well as development and implementation of a fishery quality management system based on HACCP principles. In addition, the business must also sign a contract with one of the approved inspection bodies. Based on this contract, the inspection body will send an application on behalf of the business to FISKISTOFA. After sending a notice to the business at the time of inspection, inspectors of FISKISTOFA will inspect the business. If the business meets the above mentioned requirements, FISKISTOFA will issue an approval number and certificate to the business and, at the same time, a notice to the contracted inspection body. Based on this notice, the inspection body will carry out regular inspections of the business.

In the case of vessels (excluding factory vessels), after FISKISTOFA receives the application documents and sends notice to the business, the contracted inspection body will implement the inspection of the vessel and submit the report to FISKISTOFA for the issue of an approval certificate.

The list of approved factories, vessels, and auctions/wholesale markets is continuously updated by FISKISTOFA and made available on its website: http://www.fiskistofa.is.

*b.* Approval numbers

According to Icelandic legislation, all vessels, auctions/wholesale markets and processing factories must have a license and an approval number issued by FISKISTOFA.

The approval numbers includes five digits which indicate the type of product concerned and the location of the premise or facility. The first two digits indicate the type of processing, the third digit indicates in which part of the country the processor is located and the last two digits indicate the processors numbers in ascending order.

*c.* Withdrawal of approvals

The Icelandic legislation allows FISKISTOFA to suspend or withdraw approvals or registrations of businesses if there is proof that the business does not ensure the relevant requirements mentioned above. This withdrawal or suspension is issued by FISKISTOFA based on a report from the inspection bodies or FISKISTOFA inspectors or a notification from the business management board.

If an inspection from the inspection body detects a serious deficiency, inspectors from FISKISTOFA will visit the facility. In case the verification results confirm the deficiencies and they are not rectified within the time limit set, the approval will be withdrawn. FISKISTOFA issues a new approval only after an inspection reveals that the deficiencies have been rectified or at least a plan for corrective action has been prepared by the business and approved by FISKISTOFA.

7.1.2.4 Importation control of fishery products

FISKISTOFA is designed to be responsible for officially checking import consignments of shrimp products in particular, and fishery products in general, entering Iceland which is also an import gateway of the EEA. This duty is implemented by border inspection posts located in Reykjavik, Hafnarfjörður, Njarðvík, Þorlákshöfn, Akureyri, Húsavík, Ísafjörður, Eskifjörður and Keflavík Airport. Importers must inform FISKISTOFA at least 24 hours before import consignments arrive at border inspection posts. The inspector will check certificates and documents accompanying the consignments, correspondence between the products and the documents as well as carry out physical evaluation to verify that the product meets the required health specifications. Inspectors also take samples from the consignments to send to accredited laboratories for analysing microbiological and chemical criteria if necessary. Therefore, in order to be approved to import into Iceland, all fishery product consignments have to have enough relevant information such as origins, suppliers, components, quality, etc.

#### 7.1.2.5 Official laboratory

FISKISTOFA only accepts test results issued by accredited laboratories and analysis methods of those criteria also have to be accredited (Zoëga 2005). At present, there are some food testing organisations such as the Icelandic Fisheries Laboratories (IFL), EFA Laboratory, Promat, Agar, and Syni Laboratory Service which meet these requirements. Those laboratories have been accredited by the Icelandic Metrology and Accreditation Service and SWEDAC according to the Standard ISO/IEC 17025:2000 on general criteria for the operation of testing laboratories which was revised into Standard ISO/IEC 17025:2005 last year. SWEDAC inspects the accredited laboratories once a year to ensure their compliance with the Standard.

The leading laboratory in the fisheries sector is IFL which is an independent food research institute under the Ministry of Fisheries. IFL has one central laboratory located in Reykjavik and four laboratories located in four branches of IFL. However at present, three of them do not supply testing laboratory services because of the limited number of samples required for testing from the authorities and businesses.

#### 7.1.2.6 Training for official control staff

In order to harmonise official control activities, FISKISTOFA often carries out training programmes for both FISKISTOFA staff and the inspection body staff.

Concerning the inspection field, FISKISTOFA issues the Inspection Manuals as guidelines for inspectors. FISKISTOFA conducts one-day training courses once or twice per year to improve professional skills and supply new legislation documents on inspection (Zoëga 2005).

FISKISTOFA usually updates the new news on Icelandic and EU legislation as well as guides and training course information on quality management systems such as HACCP, Total Quality Management (TQM) on its website. In addition, FISKISTOFA also arranges annual training courses for staff of border inspection posts on controlling imports of fishery products into Iceland.

#### 7.1.2.7 Transparency and confidentiality

FISKISTOFA not only posts and updates on its websites new information on its structure, functions, and its activities but also legislation, guidelines on quality management systems, its annual reports and other information related to quality and official control of fishery products. Information on annual monitoring results of Icelandic ocean areas is also available on the Internet for public reference.

Iceland also informs local control offices and relevant businesses about closing of a harvesting area by email, newspapers and radio as soon as it detects problems in those areas. This action helps vessels, landing sites, auctions and processing factories

immediately receiving the necessary information to set up corrective action or not catch/buy contaminated fishery products.

However, the legislation page on the FISKISTOFA website (http://www.fiskistofa.is/get_page.php? page=55) still has not been updated and therefore the Icelandic legislation posted there is insufficient. In addition, in interviews with fishery businesses, it was noted that there were not many businesses that had been informed and supplied with the new EU legislation although it had been in force since 1 January of this year.

### *7.1.3 Measures to ensure hygiene requirements of the shrimp industry*

#### 7.1.3.1 Requirements for a food safety management system

The auction and shrimp processing factory visited in January 2006 has set up and implemented quality management systems based on HACCP principles as requirements of Icelandic legislation and the EU. The visited shrimp processing factory has carried out annual verifications by their qualified staff. However, validation of the HACCP system, a new concept of HACCP verification introduced some years ago, has not yet been carried out by the business. The auction located in Dalvik owned by Fiskmarkadur Islands company informed that annual verifications have not been carried out in this auction although they have a HACCP-based quality management system.

The facts indicate that the quality management systems of Icelandic fishery production businesses still need to be improved and the quality control staff also needs to be trained on HACCP development and implementation.

#### 7.1.3.2 Traceability

Iceland has been implementing a traceability system in the Icelandic shrimp production sector at all stages of shrimp production and distribution, from on board the fishing vessels to the end customers. Information on caught shrimp, including species, sizes, fishing methods, catching areas, dates of catch, is recorded on the labels or tags attached to the tubs and also in the database of vessels' computers. The catching information is sent to FISKISTOFA, landing ports and auctions. The information is then also sent to processing factories. When exporting, information on shrimp product consignments is shown in the consignment documents. Consequently, part of the information will be transmitted from one business to the next link and the rest will remain in the computers of this business to be available for the competent authority on request.

Therefore, with links in the Icelandic fisheries sector, it is possible to trace back the samples through the analysing process as requested in the new EU legislation.

#### 7.1.3.3 Raw material management

With good traceability, Icelandic shrimp processing factories are able to set up a good raw material management system. Name and information on fishing vessels and their

companies of all seafood tubs dispatched through an auction as well as information on each seafood tub is shown in the computer database of that auction. Therefore, factories also have enough information on the suppliers and raw material batches they receive daily. Production conditions and quality management systems of all suppliers are also controlled by the authority. However, in the auction visited in Dalvik, it was observed that there was a seafood tub without a lid placed in the open air outside of the premises which is near a car way. This suggests a flaw in the preservative conditions of seafood raw material in this auction.

#### 7.1.3.4 Other hygiene requirements

Generally, production conditions of the businesses visited met the hygiene requirements of the EU legislation. However, in some factories, it was still observed that there were rusted or cracked parts in some equipment. Therefore, it is suggested that those fishery businesses should improve their maintenance programmes.

## 7.2 Evaluation of the ability of the Vietnamese fisheries sector to apply lessons learnt in Iceland in wild shrimp production

As mentioned, Vietnam has great potential for fishing activity with a total area of inland and territorial waters of 226,000 $km^2$ and an EEZ of over 1 million $km^2$. In addition, Vietnam has more than 4,000 islands which can provide logistic services, transshipment facilities of products onshore and provide shelter for fishing vessels during the stormy season (Lem *et al.* 2004). Compared to aquaculture in period 2001 - 2003, fishing contributed 40 – 50% of the total fisheries value (Table 6). Shrimp is in second position in value of caught fish and accounted for 17.3 – 18.6% of the total caught fishery value in the period 2001 – 2003 (Table 5). According to a survey conducted by FAO and the Ministry of Fisheries in 2001 – 2003, in general, freshwater fishermen operated at household level and their catches per day were very small, only from several to a hundred kg. Marine fishing is the main resource supply for processing with 87% of marine fishermen at the household level. The same percentage of fishery collectors also operated at household level (Lem *et al*. 2004). This is a difficulty for fishing management and official quality control in Vietnam.

Table 4: Fishery output value of Vietnam from 2001 – 2003.

*Unit: billion VND*

| Item | 2001 | | 2002 | | 2003 | |
|---|---|---|---|---|---|---|
| | **Value** | **%** | **Value** | **%** | **Value** | **%** |
| Aquaculture | 16,904.2 | 52.5 | 21,357.1 | 57.5 | 26,184.7 | 60.2 |
| Capture | 15,294.5 | 47.5 | 15,770.8 | 42.5 | 17,279.7 | 39.8 |
| **Total** | **32,198.7** | | **37,127.9** | | **43,464.4** | |

*Resource: FAO and MOFI 2005*

Table 5: Output value of capture in Vietnam from 2001 – 2003.

*Unit: billion VND*

| Item | 2001 | 2002 | 2003 | Compurgation with previous year (%) | |
|---|---|---|---|---|---|
| | | | | 2002/2001 | 2003/2002 |
| Fish | 8,854.1 | 9,389.9 | 9,976.6 | 106.1 | 106.2 |
| Shrimp | 2,844.8 | 2,580.0 | 2,993.0 | 90.7 | 116.0 |
| Other species | 3,595.6 | 3,801.0 | 4,310.1 | 105.7 | 113.4 |
| **TOTAL** | **15,294.5** | **15,770.8** | **17,279.7** | **302.5** | **335.7** |

*Resource: FAO and MOFI 2005*

Generally fishing vessels in Vietnam are not specialised for shrimp catching due to their small scale and limitations of the catching season in each area. For similar reasons, raw material middlemen/collectors also collect not only caught shrimp but also other fishery species. Therefore, this study deals generally with fishery fishing vessels middlemen/collectors.

### *7.2.1 Possibility of a change of the Vietnamese legislation system*

Similar to Iceland, in order to assure safety and quality for domestic products as well as comply with the requirements of import markets, Vietnam has promulgated a large number of legislative documents in the past years. The leading legal basis for all activities in the food sectors of Vietnam, including production, storage and distribution, is the Ordinance on Goods Quality No. 181999PL-UBTVQH10 promulgated by the Government of Vietnam on 24/12/1999, which took effect on 1 July 2000. This Ordinance sets out principles and policies for the management of product quality in Vietnam, including the promulgation and application of quality standards for goods, quality certification of goods and accreditation of quality control systems regarding the examination and inspection of goods quality.

Since then, as required in Article 38 of the Ordinance, the Government issued Decree 179/2004/ND-CP dated 21 October 2004 on governmental management of goods quality to guide the detailed implementation of all principles mentioned in the Ordinance. Assignment of specific goods management functions of the ministries as well as cooperation between ministries are laid down in Article 23 of the Ordinance. The fishery goods management functions of the Ministry of Fisheries as well as its structure and rights are specifies more clearly in Government Decree 43/2003/ND-CP of 2 May 2003. In supplement to the Decree on Goods Quality, the Government also signed an order to promulgate the Decree on Food Hygiene and Safety on 26 July 2003. This Decree stipulates principles to ensure food hygiene and safety at all stages of production, distribution, transport of food as well as preventive and rectification measurements of foodborne diseases and food poisonings.

There are also several main Decrees and Laws to supplement the above mentioned Decrees to make a legal framework for fishery quality, hygiene and veterinary activities, in which the most important Decrees are the Fishery Law issued on 7 August 2003, the Veterinary Decree issued on 29 April 2004, and the Decree on Breeds of Animals issued

on 5 April 2004. The Fishery Decree stipulates general requirements for all activities in the fisheries sector, including food safety and quality assurance. The Veterinary Decree and Decree on Breeds of animals set up requirements for implementing official controls on veterinary and animal diseases in culturing and production of animal breeds for import and export.

Similar to Iceland, under those Decrees are regulations and standards issued by the Ministry of Fisheries which establish more detailed requirements in the field mentioned above, in which the most important documents are the following:

- Decision of the Ministry of Science and Technology and Environment no. 117/2000/QD-BKHCNMT of 26 January 2000 promulgating the 2000 list of export goods and import goods subject to the State Quality Inspection. It promulgates a list of products subject to quality inspections in cooperation with different related ministries.
- Decision of the Ministry of Fisheries, 649/2000/QD-BTS, 4 August 2000, to issue a Regulation on inspection and certification for health conditions in fishery processing establishments.
- Decision of the Ministry of Fisheries, 650/2000/QD-BTS, 4 August 2000, on a Regulation on governmental inspection and certification for the quality of fishery products
- Decision of the Ministry of Fisheries, 15/2002/QD-BST, 17 May 2002, promulgating the Regulation on a monitoring programme for chemical contaminants and residues hereof in aquaculture animals and aquaculture products.
- Decision of the Ministry of Fisheries, 07/2005/QD-BST, 24 February 2002, promulgating a list of veterinary drugs permitted, restricted and banned for use in fishery production, distribution and trading.
- Mandatory Sectorial Standards related fishery safety of all kind of fishery businesses, in which the main important standards are 28TCN 129:1998 “Fish Processing Establishments – HACCP based programme for Food Quality and Safety Assurance” and 28 TCN 130:1998 “Fish Processing Establishments - General Conditions for Food Safety”

The Vietnamese legislation system on fish hygiene and official control has been evaluated by EU expert teams and past inspections have found that it is basically equivalent with the EU legislation. However, there are some inappropriate and insufficient matters in the legislation, especially systems of guidelines and sub-law documents that are not complete or on time. Details of legislation deficiencies are described hereafter. In addition, like Iceland, there are not any legal documents which are issued to comply with the new EU legislation on food hygiene and official control. The authorities have also not yet informed the public and the industry of the new EU legislation and their changes in comparison with the repealed legislation.

### *7.2.2 Possibility of change in Vietnam of the structure and activities of the authorities*

#### 7.2.2.1 Structure, functions and powers of the competent authorities

As stipulated in the Decree 179/2004/ND-CP, there are three ministries with responsibilities related to fishery hygiene and official control in Vietnam:

a. Ministry of Science and Technology

The Ministry is responsible for:

- Instructing and establishing universal policies on good quality, including fishery products.
- Developing and publishing national standards.
- Publishing a list of commodities imported, exported and domestically produced subject to quality control, in cooperation with related ministries.
- Publishing list of commodities subject to a Vietnamese standard (as minimum), in cooperation with related ministries.

b. Ministry of Health

The Ministry is responsible for:

- Monitoring hygiene and safety of food for domestic consumption, including seafood as well as inspecting the health conditions of fishery retailers, wholesalers and restaurants.
- Managing and inspecting the production and import of food additives, chemical food ingredients, disinfecting agents etc. for use in the food industry.

c. Ministry of Fisheries

The Ministry is responsible for state management of fisheries, including fish farming, catching, processing, protection and development of fishery resources inland and offshore throughout the country. The central competent authority under the MOFI is the National Fisheries Quality Assurance and Veterinary Directorate (NAFIQAVED) which is responsible for helping the MOFI in professional state management of quality, food safety and veterinary practices in the whole chain of fishery production, from primary production to processing, storing and transportation. NAFIQAVED has six regional centres located in six key cities or provinces of fishery production, responsible for planning and implementing official control in fishery product businesses including fishing vessels, aquaculture farms, landing sites, processing establishments, as well as for controlling chemical residues in aquaculture areas and monitoring bivalve mollusc harvest areas. This Directorate was revised and reorganised in 2003 from the National Fisheries Inspection and Quality Assurance Center (NAFIQACEN) according to the new Government Decree 43/2003/ND-CP and Decision 07/2003/QD-BTS dated 5 August 2003 of the Ministry of Fisheries.

In cities or provinces, there are Provincial Fishery Resource Protection Sub-departments (PFRPS), which fall under Provincial Departments of Fisheries (DOFI), which are co-responsible with NAFIQAVED regional centers for controlling fishing vessels, landing sites and wholesale markets. NAFIQAVED regional centers provide technical guides, training courses for the PFRPSs and supervise their activities in professional aspects. In order to improve the effectiveness of coresponsibility, it is planned by the Ministry that the DOFIs will establish a new division for Quality Assurance and Seafood Safety, and veterinary control in closer cooperation with NAFIQAVED. Functions of issuing and withdrawing business operation licences, including fishery businesses, also belong to the Provincial Department of Planning and Investment. A chart of the governmental management system in the Vietnamese fisheries sector is shown in Figure 6.

Competences of equipment, facilities and staff professional skills and knowledge as well as the working methods and procedures of NAFIQAVED are accepted to meet the EU requirements (FVO 2005). However, presently NAFIQAVED does not have the right to withdraw/suspend operation licenses of fishery businesses. This right is under Provincial Departments of Planning and Investment.

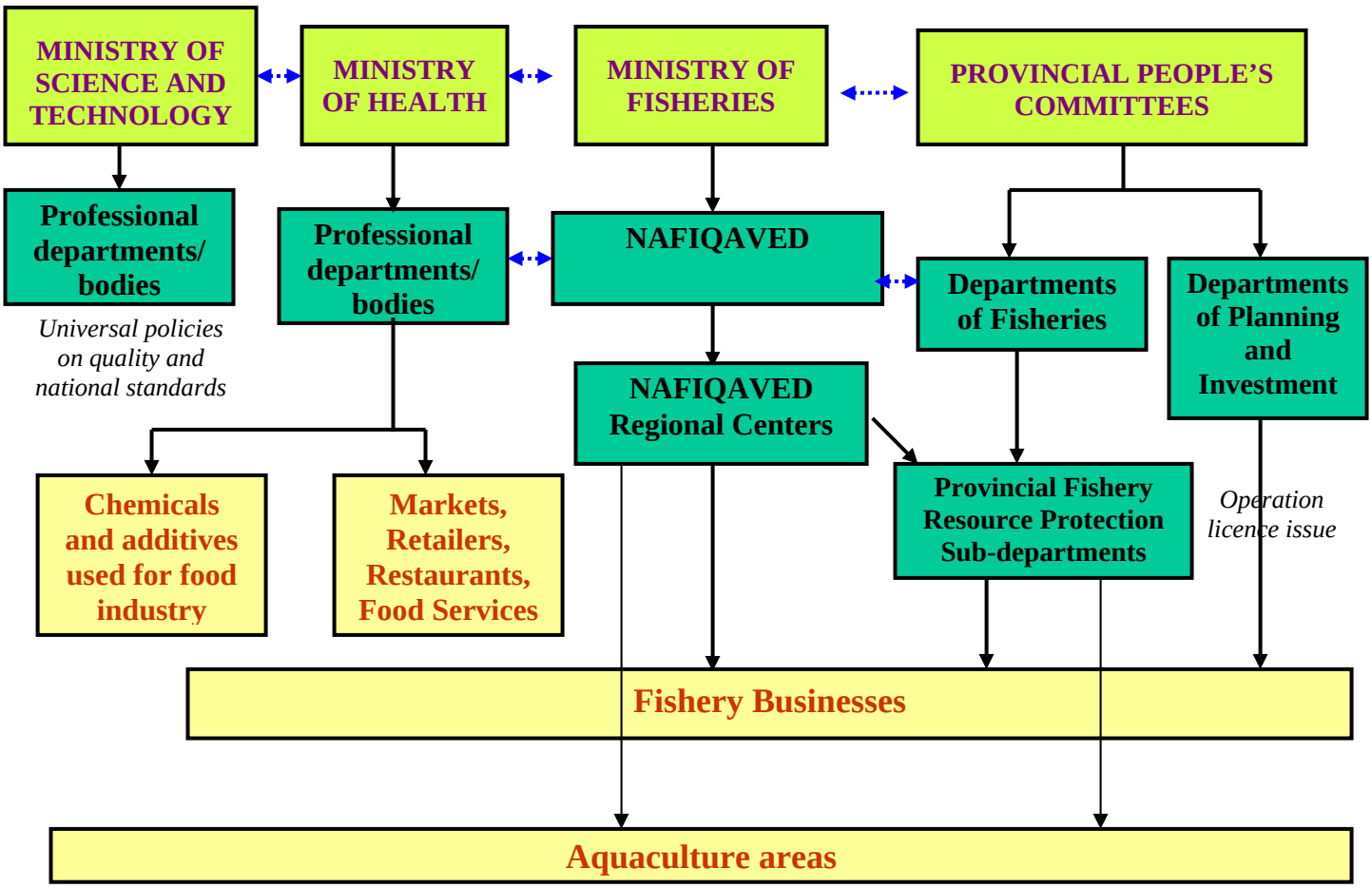


Figure 6 : Important governmental management institutions in the Vietnamese fisheries sector.

7.2.2.2 Monitoring production conditions and control activities

a. Monitoring of ocean areas

Vietnam still has not set up and implemented a monitoring programme of ocean areas. Therefore, there has not yet been any fishing area which has been closed due to pollution, contamination or HAB. In order to ensure safety of catching seafood, Vietnam can learn from monitoring experience and models of Iceland. It is an advantage in the process of developing this monitoring programme that the Ministry of Fisheries of Vietnam issued Decision No. 17/2004/ QĐ-BTS on 14 June 2004 to establish the National Center of Sea Environment Monitoring and Warning. One of the Center's responsibilities stipulated in the Decision is the establishment of a sea environment monitoring programme and the development of sea environment monitoring post nets over the Vietnamese sea water to supply information in time for aquaculture, fishery resource protection and stabilisation (Article 2.b.7). This is a foundation for the Vietnamese fisheries sector to monitor the fishing areas in future.

b. Inspection of vessels, auctions and processing factories

Unlike Iceland, Vietnam does not have any private businesses to be allowed to supply the inspection service for fishing vessels, freezer vessels, factory vessels, auction markets and processing factories although this service is accepted by the new EU legislation. All inspection activities are implemented by governmental staff, as follows:

- NAFIQAVED inspectors are responsible for official inspection of processing factories. Businesses are inspected 2 – 12 times/year depending on the food safety level of the businesses but the frequency is once per month for factories approved to export to the EU market, much higher than the frequency in Iceland. The EU mission expert team recognised that the inspection activities were well carried out (FVO 2005).
- PFRPS inspectors are responsible for official inspection of fishing vessels (Vietnam at present does not have factory vessels), landing sites and wholesale markets every six months. However, the EU mission expert team evaluated that those activities still had not been well implemented as specified by the EU requirements (FVO 2005).

In 2005, Vietnam had 439 export seafood processing factories, in which 171 factories are approved to export to the EU market, 55 freezer vessels and about 11,400 fishing vessels (Saigon Liberation Newspaper 2005, FVO 2005). Therefore, the number of inspection times per year is very high. It is suggested that Vietnam can refer to the Icelandic inspection model to unload the work burden for the government staff.

Like Iceland, at present, inspection activities of NAFIQAVED and PFRPSs inspectors are uniformed by Inspection Guidelines for the production of each kind of fishery product issued by NAFIQAVED. Those Guidelines has been updated according to Vietnamese

and main market requirements. However Vietnam should learn from Iceland to carry out risk analysis and risk assessment for emerging food safety hazards to have a platform to set up food legislation and to help factories to select appropriate control measures for more effective HACCP implementation. All guidelines of HACCP and production conditions upgrading the industry issued by the authority are mainly based on experience and research results of the main markets and international organisations such as FAO.

#### 7.2.2.3 Approval of establishments

a. Approval application and issue

According Decision No. 649/2000 QD/BTS and Decision 07/2003 QD/BTS of the Ministry of Fisheries, NAFIQAVED is responsible for the approval of fishery processing factories and DOFIs are responsible for the approval of vessels, landing sites, wholesale markets and fishery processing factories. In order to obtain an approval, businesses must submit application documents to the inspection bodies, e.g. NAFIQAVED and PFRPSs. After sending a notice to the business on the time of the inspection, inspectors will inspect the business. If the business meets the requirements, NAFIQAVED or DOFIs will issue an approval decision and an approval number to the business. Approval numbers issued for approved vessels, auctions/wholesale markets and processing factories are uniformed by Decision No. 649/2000 QD/BTS (Annex II).

The lists of approved businesses are updated by inspection bodies. However, unlike Iceland, those lists have not yet been published for the public.

b. Withdrawal of approvals

Although the authorities of the Vietnamese fisheries sector are in charge of official inspection and approval of fishery businesses, they have no mandate to suspend operations of the businesses if the business does not meet the food safety requirements. In that case, when informing the business, the fishery authorities also have to send the non-approval notice to the authority on planning and investment to require this body to suspend the business' operation licenses (Article 15 - the Decision No. 649/2000 QD/BTS). Therefore, the suspension is often not on time or effective. It is suggested that the Vietnamese Government can revise legislation to give more power to the fishery authority in this field like Iceland.

#### 7.2.2.4 Importation of fish and fishery products

There is no exact statistical data on fishery raw material imported to Vietnam for processing but it is certain that there is an import quantity of shrimp for reprocessing imported from Asian countries, especially India and China. The amounts have increased during the past years. The import of frozen shrimp in 2001 was only about 2,900 tonnes with a value of about 23 million USD, but it reached about 11,000 tonnes with a value of about 67 million USD in 2003 (FAO and MOFI 2005). However unlike Iceland, those products are not on the list of import goods under mandatory official control in Vietnam.

Therefore the quality criteria of shrimp products imported for reprocessing are still problems for Vietnamese fishery processors and authorities. In order to ensure the quality of the imported raw material, the Vietnamese Government should add those products to the list.

#### 7.2.2.5 Official laboratory

NAFIQAVED has six laboratories located in six regional centres. The EU expert team recognised that NAFIQAVED laboratories can perform all the analyses required by the EU legislation for fishery products and water (FVO 2005). All NAFIQAVED laboratories are accredited against the Standard ISO 17025 by the Vietnam Laboratory Accreditation Scheme (VILAS) as required by the new EU legislation, in which NAFIQAVED regional centre No. 6 laboratory is also accredited by the Singapore Laboratory Accreditation Scheme (SAC-SINGLAS). This laboratory is also assigned as the National Fishery Reference Laboratory by NAFIQAVED. Generally, NAFIQAVED laboratories are equivalent to Icelandic approved food laboratories in particular and the EU laboratories in general. However, there is an overload of testing works in these laboratories so in many cases there are delays in their test result issues. It is shown that monthly aquaculture area monitoring reports are usually issued in the middle of the next month.

#### 7.2.2.6 Training for official control staff

In past years, in order to meet the EU requirements, relevant bodies in the Vietnamese fisheries sector have established and carried out many training curriculums related to food quality and control. As HACCP is recognised as an important matter for the sector, the Ministry focuses on training contents related to HACCP, in which training of HACCP trainers is a first priority. By this target, the Ministry actively nominates participants for HACCP train-the-trainer courses from officers of bodies of the Ministry, teachers of Fishery Universities and Colleges, staff of fishery research institutes, staff of VASEP and the fishery industry. After HACCP training of trainer courses, the bodies developed a set of HACCP training curricula and materials of HACCP training courses for business managers, quality control staff and workers. In addition, training curricula and material of other relevant matters for the industry have been developed and implemented all over the country such as basic fishery storage, handling and processing technology, quality assurance, training of trainers, laboratory activity management, requirements of main import markets, etc. For the purpose of improving professional skills and knowledge for official control staff, NAFIQACEN (and NAFIQAVED after 2003) has also carried out many courses on food quality and official control for local inspectors and its new staff since 1994. However, inspection of fishing vessels and collectors is this new field of Vietnam has still not been fully implemented due to lack of guidelines. Therefore, demand for training in this field is high. It is suggested that Vietnam can invite experts from abroad to train in the beginning stages and should soon issue inspection guidelines in this field.

In 2004 - 2005, the Fisheries Trade Union and NAFIQAVED in support of the Seafood Export and Quality Improvement Project successfully organised an HACCP contest for the industry. The contest final round was held in January 2005 and broadcasted in VTV3 Channel of the Vietnamese Television. Through the contest and the broadcast, staff and workers of fish processing factories as well as consumers could learn and understand a lot of information on seafood safety and hygiene. For that purpose, in past years, a large number of professional books on food quality also were issued by SEAQIP, VASEP, NAFIQAVED and other fishery organisations, in which the most important ones are guidelines on HACCP system development and hygiene implementation in the fishery industry, laboratory activity management, and food quality legislation of main import markets and Vietnam.

As a whole, the contents of training and professional dissemination in Vietnam meet the EU regulation and contribute to the significant results of the Vietnamese fisheries sector in past year with 171 factories in Vietnam on the list of businesses which are allowed to export their fishery products to the EU.

#### 7.2.2.7 Transparency and confidentiality

In order to improve customer, farmer and business awareness of food safety matters and relevant legislation, broadcast mediums and newspapers have been used a lot with more and more information related to fishery quality. Most of the new fishery legislation documents are also available on the websites of the Ministry of Fisheries, Fisheries Informatics Centre (FICEN) and VASEP. However much necessary information for businesses and consumers such as the results of the national fishery environment monitoring programmes or control programmes, notices on closing of harvest areas, quality levels of fishery businesses, as well as an updated list of businesses approved by the Ministry of Fisheries and main markets such as the EU, US, etc. still has not been available to the public. The national authority (NAFIQAVED) also does not have its own website like FISKISTOFA. In order to enable the fishery industry and local authorities to comply with new requirements of food safety, learnt from Iceland, the Vietnamese fisheries sector needs to take advantages of websites, newspapers or broadcast media to supply this information like Iceland and the national authority (NAFIQAVED) should soon open its own website to introduce new guidelines on food quality assurance and HACCP system implementation for the industry and consumers.

### *7.2.3 Potential of the industry to upgrade production conditions and improve quality management systems*

#### 7.2.3.1 Requirements of the food safety management system

The most significant success of the Vietnamese fisheries sector is that all involved parties, from farmers to processing workers in the whole fishery production chain of Vietnam have been clearly informed of food safety requirements and the importance of HACCP based quality management systems. Therefore many processing factories are voluntarily following the HACCP approach.

As mentioned in Part 4, Vietnam has 439 export seafood processing factories, of which 171 factories have qualified for exporting to the European Union, 222 factories have been recognised to meet hygienic condition standards by the Ministry of Fisheries. This means that the quality management systems of those factories are based on HACCP. VASEP has also been conducting training courses on HACCP as well as consulting for the industry to improve their HACCP systems. After HACCP training courses, many fishery factories have shelf-conducted HACCP and food hygiene training for their workers.

However, similar to the Icelandic industry, internal verification of the HACCP system are still new concepts with businesses although there have been 12 four-day training courses on HACCP verification held all over the country since 2002. In addition, handling businesses, wholesale markets and raw material collectors in the fisheries sector still have not applied HACCP in their quality management as required by the new EU legislation. Fishing vessels, mostly in small sizes, also have not yet applied any quality management programmes. Therefore, the authorities need to supply more support and the industry should be more active to improve quality management. The Ministry of Fisheries should also issue a new regulation to require HACCP application in all businesses after primary production.

#### 7.2.3.2 Traceability

Traceability is still a big problem in the Vietnamese shrimp sector in particular and the Vietnamese fisheries sector in general because Vietnam has a large number of small businesses in fishing and raw material supply sections. Most small size fishing vessels and small scale raw material middlemen/collectors have never registered with the authorities and have not been issued approval numbers so it is difficult to manage them as well as determine the origins of raw material supplying the factories from those businesses. Unlike Iceland, fishing vessels in Vietnam have not yet recorded relevant information such as fishing areas, fishing methods, caught quantity of each species, etc. and record keeping procedures. This means that most factories in Vietnam at present do not have reasonable traceability for their products. Being aware of the importance of traceability, NAFIQAVED in cooporation with VASEP and Strengthening of the Fisheries Administration Project (STOFA) of Danish International Development Assistance (DANIDA) has been carrying out a pilot programme on traceability implementation in some areas of the Mekong Delta but its scope is still limited. In order to improve this problem, Vietnam should learn from Iceland and renew the regulations to require all businesses to register with the authorities. In addition, factories should also agree in close cooperation not to purchase raw material from unknown origins.

#### 7.2.3.3 Raw material management

Raw material management ability in shrimp production in particular and the fisheries sector in general has also increased with improvements in quality management systems of businesses in past years in almost processing factories because a raw material management programme is a prerequisite condition of the HACCP system of processing

factories. However, the problem of raw material supplier management in the Vietnamese fisheries sector still negatively affects raw material management. Some middlemen/collectors make raw material weight increase illegally by using unapproved chemicals or physical matters for short-term economic benefit. The export value to the EU decreased from 10% of the total fishery exports in 1999 to under 4% in 2002 mainly due to chloramphenicol and nitrofuran residues in shrimp products (FICEN 2005). The Ministry of Fisheries and its functional organisations have issued some policies, sub-law documents and promoted propaganda campaigns aimed at fishery communities and the public on this problem. Consequently, the export value to the EU of Vietnam increased to near 10% in 2004 again.

As mentioned above, the quality of imported raw material still has not been closely controlled by the authorities. In addition, imported products are not required and inspected to be handled or produced under an equivalent regime of management of food safety. Therefore, in order to improve raw material quality, Vietnam should revise the policy on fishery import control as well as required registrations of all fishing vessel, middlemen, and increase inspection of their conditions in the future. The industry also does not have measures to ensure that.

#### 7.2.3.4 Other hygiene requirements

Generally, hygiene conditions of many export factories meet the hygiene requirements of EU legislation with 171 factories on the list of businesses which have approved for exporting to the EU. However, like Iceland, maintenance programmes of factories still need to be improved. In addition, hygiene conditions of businesses before processing, e.g. fishing, raw material collection and handling still have not met the legislative requirements and are not yet closely inspected by the authorities. Therefore, it is suggested that Vietnam processing factories need to pay attention to their maintenance programmes and the Ministry of Fisheries should follow Icelandic authorities' example of increasing official control of businesses before processing.

## 7.3 Assessment of the Vietnamese fisheries sectors' compliance with the new EU requirements and its changeability for cultured shrimp products

This part of the study only assesses the beginning of the production chain, from the culture stage to the receiving step of fishery processing factories, because assessment from processing plants to export ports are the same in the case of wild shrimp products. As mentioned in Item 6, Vietnam has a large area of freshwater bodies such as lakes, reservoirs and rivers. With these conditions, aquaculture plays an important role in the fisheries sector in which cultured shrimp is the most valuable product reaching over 70% of the total aquaculture value in past years (Table 6). According the survey of FAO and the Ministry of Fisheries, most fishery farmers (94%) and fishery collectors (87%) were operating at household level. In addition, basically many farmers are new commers with 35% of them having less than three years of experience and only 15% having over 10 years of experience (Lem 2004). With the large number of small scale aquaculture

businesses and low levels of experience, the Vietnamese fisheries sector also has the same management problem in aquaculture as in fishing and fishery collection.

Table 6: Output value of aquaculture in Vietnam from 2001 – 2003.

*Unit: billion VND*

| Item | 2001 | 2002 | 2003 | Compurgation with previous year (%) | |
|---|---|---|---|---|---|
| | | | | 2002/2001 | 2003/2002 |
| Shrimp | 11,965.6 | 15,318.2 | 18,915.8 | 128 | 123.5 |
| Fish | 4,317.0 | 5247.5 | 6,315.7 | 121.6 | 120.4 |
| Other species | 621.6 | 791.4 | 953.2 | 127.3 | 120.4 |
| **TOTAL** | **16,904.3** | **21,357.1** | **26,184.8** | **126.3** | **122.6** |

*Resource: FAO and MOFI 2005*

### *7.3.1 Legislation system, structure and activities of the authorities*

As mentioned in item 6.2.1, there have been many laws related to all veterinary aspects of aquaculture issued in the past years such as Fishery Decree issued on 7 August 2003, the Veterinary Decree issued on 29 April 2004, and the Decree on Breeds of Animals issued on 5 April 2004. However, the same problem occurs with legislation related to catching products, the system of sub-law and guideline documents concerning veterinary and HACCP principle application is still incomplete, loose and far from the EU legislation and actual production situation. It raises urgent demands to research deeply the Icelandic legislation on this matter to improve the Vietnamese legislation in the future.

The authority in charge of aquaculture and fishery collection control is still NAFIQAVED. This function is moved to NAFIQAVED from the Fishery Resource Protection Departments (FRPD) after the NAFIQACEN reorganisation in 2003 (according to Decision 07/2003/QD-BTS of the Ministry of Fisheries). The control implementation in provinces or cities is assigned to PFRPSs. Consequently, this control at present is concentrated in NAFIQAVED after a long time of being divided between NAFIQACEN and FRPD. In addition, Decision 649/2000/QD-BTS set up requirements on registration, approval and inspection for aquaculture and fishery collection businesses which were not required to implement those activities in the old regulations. It is advantageous for the fisheries sector to implement the EU legislation related to aquaculture and fishery collection.

However, as mentioned in item 7.2.2, inspections of aquaculture farms and raw material fishery collectors are new fields to both central and local competent authorities and still are not fully implemented due to lack of guidelines. Furthermore, as mentioned above, most fishery farmers and collectors are small scale. In addition, any farmers and middlemen, esspecially in rural areas, do not have information in time on new aquaculture techniques, new legislation on food safety and official control and enough knowledge on disease control/prevention and banned chemicals in aquaculure and fishery storage because most fishery farmers do not have much experience in aquaculture. In a survey in 2003, the proportion of farmers that had more than 10 years of experience is very low at only 15% and 35% had less than three years of experience (Lem *et al.* 2004).

National Fisheries Extension Centre (NAFEC) and Provincial Fisheries Extension Sub-department (PFES) staff, who are responsible for informing farmers of aquaculture techniques and use of appropriate drugs and chemicals, are also limited because of limited governmental salary budgets.

NAFIQAVED has been implementing an approved residue control programme for aquaculture areas since 1999 as required in Article 11 of Regulation 854/2004. During 2004, the programme has controlled all intensive aquaculture areas with the total number of 137 areas/35 cities and provinces, an increase of 110% compared to 2003. The monthly monitoring results and closing notices are sent directly to PFRPDs and factories approved to export to the EU. This database has also been posted on the website of FICEN for other factories, relevant organisations and consumers but with a long time delay and insufficiencies. When accessing this website on 17 February 2006, it showed that the last monthly monitoring results were from December 2005 (http://www.fistenet.gov.vn/Vietnamese/KS_Duluong/ks_Duluong. htm).

### *7.3.2 Potential of the industry to upgrade production conditions and improve quality management systems*

One of the big problems of the aquaculture shrimp and shrimp collection industries is the use of banned chemicals such as chloramphenicol or nitrofurans. In order to prevent this hazard, besides promulgating orders or regulations, the Ministry has increased popularisation in national and local broadcast media to supply knowledge on legislation and new techniques on aquaculture and shrimp disease control for farmers as well as the harmful effects of banned chemical usage in culturing and fishery storage for middlemen.

In contrast with businesses in the aquaculture and collection sectors, all factories have good knowledge on the effects of banned chemical in fisheries. At present, antibiotic hazards are recognised as significant hazards in the receiving step of HACCP plans of shrimp processing lines and factories check documents accompanying raw material batches closely and have plans to take samples for testing antibiotic residues in raw material from suppliers. However when lacking raw material shrimp, some factories still purchase shrimp products from unknown origins or soaked in chemicals although there is a commitment between factories, which are members of VASEP, to agree to refuse to buy them. Therefore to ensure the prevention of the intentional use of antibiotics in aquaculture and the collection stages and to meet requirements about the information required from aquaculture businesses laid down in Regulation 852/2004, factories should comply with the commitment.

Concerning the quality management system, shrimp export factories approved by the EU have implemented the HACCP system in their businesses well but fishery collectors still have not carried out quality management systems based on HACCP as required by the new EU legislation. In addition, similar to caught shrimp products, some shrimp farmers and middlemen are less experienced and do not have enough knowledge on culture or storage methods. This is one of the main reasons for the increased use of banned antibiotics such as chloramphenicol and nitrofurans in cultured shrimp in past years. Most

aquaculture businesses carry out their activities based on experience and have not yet developed any quality management systems. Therefore, collectors must soon upgrade their production conditions and set up their own quality systems based on HACCP principles with the support of the Vietnam Fisheries Association (VINAFA), VASEP and local governmental bodies such as PFESs, PFRPDs.

In order to have enough information to supply to the factories as required by Regulation 852/2004, shrimp culture businesses should apply quality management programmes such as GAP, BAP or HACCP. In order to increase public support and increase the awareness of farmers on responsibility aquaculture, the Ministry and local governments should enable and help farming communities to develop shelf management programmes in farming communities based on the Code of Conduct (CoC) for Responsible Fisheries raised by FAO. The establishment of certification businesses for certifying GAP, BAP, HACCP and CoC in aquaculture is also encouraged by the Government and the Ministry of Fisheries. They are effective and basic measures to meet the following targets: minimising disease in aquaculture, protecting the aquaculture environment, aquaculture products as raw materials for processing meet food safety requirements and high benefits to farmers. It is also necessary that the Ministry and fishery research institutes should study and find new methods or accepted substances for treating shrimp diseases and culture ponds to guide farmers.

### 7.4 Assesment of different aspects of food hygiene and official control in Iceland and Vietnam

The Icelandic fisheries sector has a lot of experience in managing and controlling food hygiene in the fishery production chain. This experience could be considered and selected for implementation in Vietnam. A comparison and assessment of various aspects of the fisheries sectors in the two countries is shown in Table 7.

Table 7: Comparison of aspects on food hygiene and official control in the fisheries sectors of Iceland and Vietnam.

| No. | Item | Icelandic fisheries sector | Vietnamese fisheries sector |
|---|---|---|---|
| *1* | *2* | *3* | *4* |
| **I** | **Legislation system** | | |
| | | - Iceland has a good legal framework set up systematically in harmonisation with international requirements and standards | - Vietnam has a good legal framework on food hygiene and official control which is accepted by EU inspectors but system of guidelines and sub-law documents are not complete or on time<br>- Vietnamese legislation does not require registration of small scale primary production businesses |
| | | - Iceland has not yet transmitted the new EU legislation into Icelandic legislation | - Vietnam has not yet issued any legal documents to comply with the new EU legislation |
| **II** | **Structure and activities of the authorities** | | |
| 1 | Structure, functions and powers of the competent authorities | - Iceland has advanced private businesses in some official control activities under close supervision by the competent authority<br>- FIKISTOFA has the power to suspend operations of factories not meeting official requirements | - All official control works are in charge of governmental staff<br>- NAFIQAVED does not have any real power to suspend the operations of factories not meeting requirements |
| 2 | Monitoring of ocean areas | - Iceland has implemented a monitoring programme of fishing seawaters | - Vietnam has not yet implemented a monitoring programme of fishing seawaters |
| 3 | Inspection of vessel, auction and processing factory | - Iceland carries out systematically food hygiene and HACCP principles in the whole production chain "from farm to folk", not only in processing factories<br>- Iceland has implemented risk analysis in fishery production<br>- Guidelines on HACCP application are disseminated widely | - Food hygiene and HACCP principles of the whole production chain "from farm to folk" is approached, but raw material quality still is not controlled fully or closely (in primary productions, collections, imports)<br>- Vietnam has not yet carried out risk analysis and risk assessment for emerging food safety hazards in fishery production<br>- HACCP guidelines for processing factories are disseminated widely but authorities has not issued guidelines on HACCP application to wholesale markets and middlemen/collectors |
| 4 | Import control of fishery products | - Iceland closely controls import fishery products | - Fishery products for human consumption at present are not on |

| | | | |
|---|---|---|---|
| | | | the list of goods under mandatory import control |
| 5 | Official laboratory | - Icelandic laboratories are accredited against ISO 17025 | - NAFIQAVED laboratories are accredited against ISO 17025 but are overloaded with work |
| 6 | Training for official control staff | - Iceland often conducts training courses for governmental and inspection body staff | - NAFIQAVED often conducts training courses for national and local staff. However local authority staff does not have enough skills and experience on inspection of primary production and collectors because it is a new field in Vietnam |
| 7 | Transparency and confidentiality | - Iceland makes use of broadcast mediums and the Internet for popularising and informing the industry and public on time | - The authorities have not yet informed the industry or public of the new legislation or other necessary information |
| **III** | **Implementation of the industry** | | |
| 1 | Requirements on food safety management system | - All of kinds of fishery businesses have implemented quality management systems based on HACCP<br>- Factories have not completely carried out internal verification | - Handling businesses, wholesale markets and raw material collectors in the fisheries sector still have not applied quality management systems based on HACCP<br>- Factories have not completely carried out internal verification |
| 2 | Traceability | - Traceability generally is well implemented in all links of the fishery production chain | - Traceability generally has not yet fully carried out, especially in primary production, fishery collection and handling |
| 3 | Raw material management | - Raw material quality is closely monitored by HACCP systems of factories<br>- Sense of community to comply with the legislation is good | - Some middlemen soak raw material in banned chemical or inject foreign matter/substances because of economic benefits<br>- Some factories still purchase raw material from unknown origins that may be soaked in chemical or injected foreign matter/substances |
| 4 | Other hygiene requirements | - All of kinds of businesses generally have good hygiene conditions.<br>- Businesses and the public have high awareness of food safety | - Hygiene conditions of businesses before processing, e.g. fishing, raw material collection and handling still have not met the requirements by the authorities. Their knowledge and skills in this field are very limited |

# 8 PROPOSAL FOR CHANGES IN FISHERY HYGIENE MANAGEMENT AND OFFICIAL CONTROL SYSTEMS IN VIETNAM

## 8.1 Summary of gaps in the Vietnamese fisheries sector to comply with the new EU legislation package

Based on the results of the assessment of the two case studies on the shrimp production chain, it is possible to determine general gaps related to food hygiene and control aspects for all fishery products (excluding bivalve molluscs because of their specific characteristics) of the Vietnamese fisheries sector. The gaps to be filled in order to ensure compliance with the new EU legislation package are as follows:

Table 8: General gaps related to food hygiene and control aspects of the Vietnamese fisheries sector to comply with the new EU legislation package.

| No | Item | Gaps in the Vietnamese fisheries sector | Reference to the new EU legislation |
|---|---|---|---|
| **I** | **Gaps in the legislation system** | - Vietnam has not yet issued any legal documents to comply with the new EU legislation<br>- System of guidelines and sub-law documents (on veterinary issues, inspection and quality management systems of primary production and middlemen) are not complete or on time<br>- Authorities have also not yet issued regulations on registration for small scale primary production businesses | Article 11 – Regulation 854/2004, Article 46 – Regulation 882/2004<br><br>Article 6 – Regulation 852/2004 |
| **II** | **Gaps in the structure and activities of the authorities and the industry** | | |
| 1 | Structure, functions and powers of the competent authorities | - NAFIQAVED still does not have real power to enforce the PFRPSs | Article 11 – Regulation 854/2004, Article 46 – Regulation 882/2004 |
| 2 | Monitoring of ocean areas | - Vietnam has not yet implemented a monitoring programme of seawaters to close fishing areas which do not meet hygiene and safety requirements | Article 11 – Regulation 854/2004 |
| 3 | Inspection of vessels, auctions and processing factories | - Inspection of primary production and fishery collectors have not been implemented as required of Vietnamese and EU legislation.<br>- Vietnam has not yet carried out risk analysis or risk assessment for emerging food safety hazards to have bases to set up food legislation and help factories to select appropriate control measures for more effective HACCP implementation<br>- Authorities have not issued guidelines on HACCP application to wholesale markets and middlemen/collectors | Article 11 – Regulation 854/2004 |
| 4 | Approval of establishments | - Authorities in the fisheries sector have no mandate to suspend operations of businesses if they do not meet the food safety requirements | Article 9, 11 – Regulation 854/2004 |
| 5 | Importation control of fishery products | - Imported products are not required and inspected to be handled or produced under an equivalent regime of management of food safety.<br>- Raw material products are not on the list of imported goods under mandatory official control in Vietnam | Article 11 – Regulation 854/2004 |
| 6 | Official laboratories | - There is overload of testing work in NAFIQAVED laboratories | Article 12 - Regulation 882/2004 |

| | | | |
|---|---|---|---|
| 7 | Training for official control staff | - Some local inspectors do not have enough professional knowledge, skills or experience in the inspection of primary production | Article 11 – Regulation 854/2004, Article 6 and 46 – Regulation 882/2004 |
| 8 | Transparency and confidentiality | - The authorities have not yet informed the industry or the public of the new legislation<br>- There is much necessary information that is not available to the public, including:<br>▪ Results of substance residue monitoring programmes in aquaculture areas and closing areas<br>▪ The lists of approved of businesses (processors approved by Ministry of Fisheries and markets, middlemen, fishing vessels, aquaculturers) | Article 7 – Regulation 882/2004, Article 10 – Regulation 178/2002 |
| **III** | **Gap on the industry implementation** | | |
| 1 | Requirements in food safety management systems | - Handling businesses, wholesale markets and raw material collectors in the fisheries sector still have not applied quality management systems based on HACCP<br>- Factories have not completely carried out internal verification | Article 3 – Regulation 852/2004; Article 5- Regulation 852/2004; Article 17- Regulation 178/200 |
| 2 | Traceability | - Traceability generally has not been fully carried out, especially in primary production, fishery collection and handling | Article 18 – Regulation 178/2002; Article 5 and Annex II, - Regulation 853/2004; Article 4 - Regulation 854/2004 |
| 3 | Raw material management | - Some middlemen soak raw material in banned chemicals or inject foreign matter/substances because of economic benefits<br>- Some factories still purchase raw material from unknown origins or soaked in chemicals or injected with foreign matter/substances<br>- Some farmers, middlemen do not have enough knowledge of culture methods, storage methods or legislation | Article 19 - Regulation 178/2002; Annex II, Chapter IX, item 2 - Regulation 852/2004; Annex II, Section III – 853 |
| 4 | Other hygiene requirements | - Hygiene conditions of businesses before processing, e.g. fishing, raw material collection and handling still have not met the requirements by the authorities. Their knowledge and skills in this field are very limited | Annex I, II - Regulation 852/2004, Annex II, Section VIII - Regulation 853/2004 |

## 8.2 Solutions for the Vietnamese fisheries sector

In view of meeting the new requirements of the EU, a main market of Vietnamese fishery products, Vietnam needs to have comprehensive measures to renovate food safety assurance and official control systems. Iceland is a fishery export country, whose most important market is the EU. Therefore in past years, this country has focused on food safety assurance systems of fishery products and gained much experience and significant success. In the process of improving food safety, the Vietnamese fisheries sector can learn from the experience of Iceland to supplement the comprehensive measures.

### *8.2.1 Lessons learnt from the Icelandic fisheries sector*

a. Systemisation and harmonisation of the legal framework

- The legal framework, foundation for all activities of the sector, should be set up systematically in harmonisation with international requirements and standards. The fisheries sector needs to invest in national standards development, monitoring and compliance consistent with international norms and practices.
- Food quality regulations and guidelines need to be issued on the basis of comprehensible progress of risk analysis and assessment carried out by the authorities.

b. Systematic and process- based approach to food quality assurance

- The fisheries sector should carry out systematically food hygiene and HACCP principles in the whole production chain "from farm to folk", not only in processing factories.
- The construction and implementation of systems of regulation in combination with standards, guidelines and training, communication and popularisation are crucial to competitiveness and sustained growth and development.

c. Encouragement of a private sector role in official control

- The government can take advantage of private businesses in some official control activities under close supervision of the competent authority for reducing the work load of government staff to focus on other control and management activities. This move will help save the government's investment budget and labour as well as increase the operational effectiveness of government staff.

d. Taking advantage of broadcast mediums and the Internet

- The fisheries sector should increase public communication facilities such as broadcast mediums and the Internet for popularising and distributing necessary information to the industry on time and improving the knowledge of businesses and the public.

e. Strengthening the sense of community

- In order to comply fully with food safety assurance legislation, public awareness of food safety and mutual support in internal communication are very important. The government and the Ministry should set up measures to improve public knowledge and encourage shelf management of communication.

### *8.2.2 Recommendations for Vietnamese fishery authorities*

#### 8.2.2.1 Legal document framework

a. To the Government

- The Government should delegate power to NAFIQAVED to suspend operations of businesses if they do not meet food safety requirements.
- The Government should add fishery products in raw material types to the import goods list under mandatory official control.

b. To the authorities of the Vietnamese fisheries sector

- The Ministry of Fisheries should develop and promulgate legal documents to comply with the new EU legislation on food hygiene and official control this year.
- The Ministry of Fisheries needs a comprehensive plan to set up legislation related to food quality assurance which concentrates on supplementing systematically guidelines and sub-law documents, especially in the fields of veterinary control, inspection and quality management systems of primary production and middlemen.
- The Ministry of Fisheries should revise Decision 649/2000/QD-BTS to require registration of small scale primary production businesses, implementation of a quality management system based on HACCP principles for fishery collectors/middlemen and wholesale markets. In addition, traceability application requirements in the whole fishery production chain should also be supplemented into this Decision with appropriate deadlines for each kind of production business.
- The Ministry of Fisheries or NAFIQAVED should translate all EU legislation, especially the new legislation taking effect from 1 January 2006, into Vietnamese and upload it onto the Internet for the industry and public reference.

#### 8.2.2.2 Structure and activities of authorities in fishery quality management

*a.* To the authorities of the Vietnamese fisheries sector

❖ <u>Structure and functions of the authorities</u>

- The Ministry of Fisheries should promote progress to establish a new division for quality assurance and veterinary control in each DOFI to increase cooperation between DOFIs, PFRDs with NAFIQAVED. For this purpose, the Ministry needs

to arrange a meeting with the People Committees in the provinces to set up those divisions.

- The Department of Science and Technology (Ministry of Fisheries) and NAFIQAVED should coordinate with related research institutes and universities to carry out risk assessment for emerging food safety hazards and related species hazards for setting up a platform for legislation related to food safety as well as helping businesses in the development of food quality management systems.
- The Ministry of Fisheries can consider policies to delegate official inspection activities to private businesses under close supervision of NAFIQAVED to enable this organisation focus on other control and management activities.

❖ Monitoring, inspection and quality management systems

- The Ministry of Fisheries should sep up a monitoring programme for seawaters to provide clear statements on prohibited catching areas because of pollution, contamination and HAB.
- NAFIQAVED and PFRDs should carry out inspections of primary production businesses and fishery collectors/wholesale markets as requirements of Decision 649/2000/QD-BTS.
- The Ministry of Fisheries should closely control and punish strictly soaking or the injection of foreign matters into raw materials. The punishment will be applied for all stages: injection places, middlemen or transporters and factories that purchase these raw materials.
- NAFIQAVED should issue guidelines on HACCP application to wholesale markets and middlemen/collectors and, at the same time, NAFIQAVED should assign professional staff for directly guiding businesses.
- The Ministry of Fisheries should continue the organisation of a HACCP contest every two years to encourage factories in HACCP implementation.
- The Ministry of Fisheries should set up preferential policies and awards to encourage aquaculture businesses to apply GAP, BMP, and HACCP and implement pilot models of fishery communication applied CoC for fish farming and fishing.
- The Ministry of Fisheries should realise propaganda campaigns on the food safety impact of the use of chemicals, antibiotics and bio-products in aquaculture; simultaneously it should issue a guide for each aquaculture householder on the application of GAP or HACCP in aquaculture.
- The Ministry of Fisheries should implement evaluation of the pilot programme on traceability this year to take experience and appropriate methods as well as set up guidelines on traceability implementation for all stages of the production chain. It is necessary that those guidelines and experience be disseminated to the industry soon. At the same time, the functional body staff of the Ministry such as NAFIQAVED, NAFEC, and PFRPSs should directly guide implementation methods for some businesses in all provinces and cities which have fishery production.

❖ Official laboratories

- NAFIQACEN should increase the capacity of their laboratories to ensure that test results are issued on time.

❖ Training for official control staff

- In the new field on inspection of primary production businesses, landing sites, wholesale markets and fishery collectors in Vietnam, NAFIQACEN should cooperate with international organisations such as FAO and authorities of other countries that are pioneer in food safety (the EU, US, Canada, Iceland…) to conduct professional knowledge and skills for local authorities' staff.

❖ Transparency and confidentiality

- NAFIQAVED should upload onto the Internet information and guidelines for the industry and public, including:
    - Results of substance residue monitoring programmes in aquaculture areas and closing notice of areas.
    - The lists of approved businesses (processors approved by the Ministry of Fisheries and markets, middlemen, fishing vessels, aquaculturers)
    - Guidelines on inspection and HACCP application for each stage of the fishery production chain.
    - Information on new legislation in Vietnam and the main Vietnamese export markets.

### *8.2.3 Recommendations for changes of the fishery production industry*

❖ Quality management systems and food hygiene conditions

- Culture businesses and fishery collectors should apply sectoral standards on food safety conditions of each kind of aquaculture promulgated by the Ministry of Fisheries in past years.
- Culture businesses should develop and implement quality management systems based on principles of HACCP, GAP, and BAP. Fishing vessels and landing sites should apply Good Manufacturing Practices (GMPs) on board unloading, handling and preservation of raw materials. Fishery middlemen/collectors and handling businesses also need to apply HACCP principles on handling, storage and transportation to processing factories.
- Processing factories should also carry out training courses on HACCP and food hygiene for their staff and workers, and in HACCP internal verifications, pay attention to implement validation steps for their HACCP systems. Validation is a new field in Vietnam so the Department of Science and Technology, NAFIQAVED, VASEP and fishery research institutes should implement some pilot models to learn from experience and keep active roles to supply guidelines and assistance for factories.

❖ Raw material management

- Factories should observe the commitment to refuse to purchase violent raw material in order to remove foreign matter/substances injections of raw material.

At present there are only VASEP members attending to this commitment. VASEP, has the important role of being a link between factories, and therefore needs to organise more workshops on this matter all over the country for propagandising against the harmful effects of foreign matter/substances injections and call upon all businesses to participate in the commitment.

❖ Traceability

- Traceability needs to be fully carried out throughout the whole fishery production chain. In order to reach this target, processing factories should require raw material suppliers to submit origin declaration papers of raw material accompanying each fishery batch in the receiving step of the production chain. Factories also should refuse resolutely to purchase unknown origin raw materials.

## 9 CONCLUSION

The Vietnamese fisheries sector is a pioneer in food safety management reforms in food production sectors and has achieved significant success with 171 factories that have been approved for importing into the EU and 222 factories which have been recognised to meet the hygienic condition standards of the Ministry of Fisheries. Awareness and experience in food hygiene and the HACCP application of factories has improved greatly since 1991, when the HACCP concept was first introduced into Vietnam. This contributed remarkably to the 2.65 billion USD export turnover of Vietnam in 2005, higher by 150 million USD than in 2004 (VNECONOMY 2005). However with more strict requirements for food safety and quality of Vietnam's main markets, the Vietnamese fisheries sector needs to continuously improve its quality assurance system.

In the context of the EU legislation package on food hygiene and official control which took effect in the beginning of this year, in order to continue increasing the fishery export value to the EU, the Vietnamese fisheries sector should change comprehensively with efforts to meet the new requirements. For this purpose, besides translation into Vietnamese of the new EU legislation for supplying and disseminating to the industry, a workshop of the Vietnamese fisheries sector related to the new EU legislation is necessary, in which the lessons learnt from Iceland and recommendations for the authorities of Vietnam and the fishery industry are discussed. It is also suggested to continue the development of this study's results to training materials and booklets for introducing the new legislation to the public and all parts involved in the industry.

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