THE ADOPTION OF THE TRACEABILITY SYSTEM IN ROMANIAN FISH FARMS

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The traceability of quality and safety of products is under of the attention of governments, food enterprises management and consumers. Food safety remains is a critical issue with outbreaks of foodborne illness resulting in substantial costs to individuals, the food industry and the economy. Therefore, the paper investigates and discusses the difficulties, incentives and performance of traceability system adoption in fishery process enterprises based on the review of previous researches, reports and case studies.

Keywords: traceability, fish products, barriers, benefits, influencing factors

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1. Introduction

The Romanian Food Industry has specific problems which require adapted solutions for the food products types to ensure the consumer's appropriate level of protection and to cope with European market, especially beginning with 1 January 2007. In Romania, despite of the enormous importance and value, fisheries resources suffer the combined effect of overexploitation and environmental degradation. Data from control and monitoring programs have shown that in recent decades, the main catch fish in the Romanian coastal zone mutated severe and often unpredictable (Nicolae et al., 2011). The consumption of aquatic products of Romania had a sinuous evolution, but for the last ten years it has grown and the forecasts shows that it will continue to increase, whereas food safety and control are great concern of the consumers. Aquaculture is an agricultural sector which includes culture, process and marketing of aquatic organisms. The reinforcement of confidence in aquatic products depends on good fishery supply chain management and traceability. The traditional fishery supply chain is a conventional and long chain, characterized by complex combinations of upstream and downstream elements which are complex for managing and tracing. Up to our days, there is no integrated concept available for the fishery supply chain which allows both the complete and continuous monitoring of food safety and quality (together with environmental concerns) and the traceability of the entire supply chain. The on the traceability system for fish products implementation in Romania can generate an important impact in risk assessment for fish and fish products and some changes in the attitude of producers in order to develop and implement a unique traceability system.

In Romania traceability is needed to satisfy the requirements of food safety, and to identify responsibilities as well as to make sure that the source of, for example contamination, is identified and removed. Ensuring that consumers and buyers can trace the food they buy all along the aquaculture value chain will be, for example, a requisite for accessing European Community (EC) markets as from 1st January 2015 the European Union (EU) traceability regulation will be harder and it can be used as trade barrier in the context of World Trade Organization (WTO) actions are focused on the reduction of traditional trade barriers such as tariffs, while food safety standards, regulations related to traceability, product certification, environmental standards and other regulations are increasing in scope and significance as international trade in food opens up (Frohberg, Grote and Winter, 2006).
Precise temperature monitoring along the complete logistic chain it is a major requirement for the fresh products, in order to ensure food safety. Traceability is important for many reasons like

responding to the food security threats, documenting chain of custody, documenting production practices, meeting regulatory compliance or analyzing logistics and production costs. In every case, the benefits of traceability translate into larger net revenues for the firm, but after a certain period after the implementation. The ISO 22005 Food Safety Standard requires that each company know their immediate suppliers and customers based on the principle of one-up and one-down (International Organization for Standardization, 2007). The consumers also take advantages by the implementation of the traceability systems. The interest of the consumers is bigger, because they get only the benefits, without any financial efforts. Thus, food traceability has become important for reasons other than just the legal obligations in several countries.

2. Economics and management research on traceability system

The Romanian agro-food companies are only in the incipient stage of the implementation of traceability systems, mostly as independent modular applications. Prerequisites for achieving traceability are unique identification of traceable units and records of transformations. On the other hand, a lot of financial programmes are designed to support the implementation of integrated information systems in the Romanian agro-food sector. Following an analysis on the IT solution in agribusiness in Romania, it was derived that the software is limited to: applications destined for drafting the sheets for accessing European funds, such as the applications of the SAPARD Program, websites by means of which online consultancy is provided, portals that make available contact information for suppliers, distributors etc. from the agricultural and agro-alimentary sector (Patarlageanu, 2007). The Romanian scholars are focused mainly on legal framework and management aspects of the traceability and not in information technology based solutions. However, the traceability systems are developed based on the requirements of the TraceFish standards (CEN, 2003a, 2003b, ISO-12875:2011, ISO-12877:2011) regarding the specifications of the information to be recorded in farmed fish distribution chains. The types of business identified in this document for farmed fish distribution chains are: fish feed production, breeders, hatcheries, fish farms, live fish transporters, processors, transporters and stores, traders, and wholesalers and retailers.

3. Incentive factors, benefits and barriers for the implementation of the traceability system for fish products

Researches are conducted on influence factors, benefits, and barriers regarding traceability system adoption. They are based on investigation and empirical studies. The challenge for companies in the value chain, as well as for government stakeholders, is that the barriers to whole-chain traceability cannot be solved by one solution or player. They must be resolved through collaboration — between vendors, across value chains, and among competitors (Future of Fish, 2014). The effective adoption of traceability system is dependent on the close cooperation of each stakeholder in the supply chain. The processing enterprise is the core of supply chain, situated between the fish farms and the consumers. The processing enterprise and the fish farms are faced with the reality which consists with the traceability system requirement in the market and the barriers in the way of the implementation. The small potential benefits of the enterprises expect from traceability are not comparable to the cost of the work that has to be done in order to get the information to support it (Daives, 2004). They must choose between adopting and not adopting the traceability system. The report of Future of Fish (2014) discusses various barriers to implementing traceability and offers some possible solutions. Barriers can include companies' privacy and security concerns, insufficient evidence to convince business owners that benefits outweigh costs, distrust and poor communication amongst supply-chain parties and competitors, and refusal to transition from a traditional, paper-based data collection system. Full-chain traceability also requires uniform methods and formats for data collection and communication, but implementing such a standardized system on a global scale may be difficult. The barriers considered for the adoption of traceability system in Romanian fishery include factors such as size, type (ownership) and whether to export (because the decision of export enterprises to adopt traceability system relies heavily on the import countries' food safety requirements). Also, the cost involved by the adoption (such as the purchase of computers, software, data acquisition and processing equipment, traceability labels, change of management mode and coordination with other supply chain members) have a significant influence on the decision of enterprises' leaders, who are uneasy about future uncertainty of returns. The different traceability standards in the markets impede the effective adoption of traceability system. In addition, the traceability system, which is a new food safety assurance system, whether it is to be accepted by society and consumers, these problems influence the decision of enterprises.

Yang and Wu (2008) analyzed the influence factors and mechanisms of traceability system adoption, in which the depth, breadth and precision of traceability, the coordination level of supply chain enterprises, the existing information technology and the rate of incidence of food safety are considered as main influence factors. However, these researches are still in preliminary stages with placing more emphasis on theoretical analysis, and there is not yet relevant empirical research into the issues of the traceability system adoption in Romanian enterprises. Incentive factors of traceability system adoption vary widely among enterprises. According to existing research, the incentive factors can fall into four categories: improvement of management level, enhancement of product competitiveness, satisfaction of social demands and other incentives such as encouragement of the government and first adoption of similar enterprises (Wang et al., 2009).

4. Conclusion

Traceability system is an effective tool for food quality assurance and competitiveness improvement of enterprises. With the rising demand for safe aquatic products from domestic market and increasing requirement from import countries, it is potential to increase benefits by adopting traceability system. The analysis of the barriers and of the influencing factors for the implementation of traceability systems for fish products in Romania will increase the rate of adoption in the companies and the awareness of the consumers.

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