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Mihaela NECULITĂ

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Analysis the Aquaculture Situation in the European Union

Mihaela NECULITĂ¹

Abstract

Aquaculture is the production sector that recorded the fastest development at global level in recent years, providing a quarter of the world fish production. That is why, analysing the aquaculture at European level, and taking into account the place it has in the world, we have found that it is important both in economic and in social terms. Given the fact that competition is becoming stronger, one of the most important tools of fighting is the production quality. Therefore, in the last decades, there have been drafted international standards and various information systems that would help farmers develop their businesses in the area of aquaculture. The main objective of this paper is to analyse the evolution of the aquaculture sector in the European Union, focusing on European funds supporting this sector. There are major differences among European countries as concerns endowment with factors that will potentiate aquaculture, as well as the importance given to it. It is well known that despite the large allocations, Central and Eastern European countries managed to absorb less than 50% of the funds. As a result, for the programming period between 2014 - 2020, it has been drastically cut from the funds for fishing and aquaculture of several Member States, including Romania, in order to redistribute them to other states. Aquaculture remains an important sector as it can contribute to the sustainable development of the countries and regions in which it develops.

Keywords: aquaculture, budget, European funds, sustainable development, productivity.

1. Introduction

Today, the European fish farming and aquaculture have diversified widely, focusing on product quality and diversification of species. There are

¹ "Dunarea de Jos" University of Galati, Faculty of Economics and Business Administration, Galati, Romania, NeculitaM@yahoo.fr.

* Corresponding author



raised intensively: trout, white fish, tilapia, charr, Siberian sturgeon, etc. At the same time has been developed and implemented a system of floating cages, in which the fish are held captive in a large pocket-shaped anchored and maintained on the surface by a rectangular or circular floating framework. [8] The Japanese used the device for the first time and the idea was then exported to Europe, where Norwegians have used the floating cages for reproduction the rainbow trout in the waters of the Norwegian fjords.

Aquaculture, at the global level, provides approximately half of the seafood annual consumed [7], and its contribution is growing steadily. Furthermore, in developed countries, consumption of fish, fish products and seafood per capita is very high compared to countries in Central and Eastern Europe. That is why these countries are trying to use European funds for the development of aquaculture, this sector being very competitive at European level.

The aim of the Europe 2030 Strategy is to promote social inclusion and poverty reduction creating jobs and stimulating innovation at regional and local level. These objectives can also be achieved through the sustainable development of European aquaculture.

Structural and Cohesion Funds and the allocation strategies of EU member countries, represents essential elements for implementing European cohesion policy. National Strategic Reference Frameworks have a decisive role in developing operational programs that will be approved by the European Commission, respectively in the utility and efficiency of European funds that will be absorbed.

2. Problem Statement

The aquaculture sector has an important role in the European Union economy. Despite this role, various branches of the European aquaculture encounter impediments with impact on production and development of entire aquaculture field [1]. These impediments are related with water resources, strict environment standard, and competition with imports from Asia and South America, lack of awareness on the economic benefits this field may bring to national economies

Research on environmental sciences [5] and the research on the coastal aquaculture has a strategic importance for understanding and promoting the sustainable development of human society [6]. One of the reasons why the aquaculture has developed rapidly is the reduction of marine fishery resources and the protection policies for world fishery resources.

The sustainable development of aquaculture and the quality and safety of the aquatic products have been seriously affected by the pollution of the water environment according to Fang, Hu, and Wu, [3].

The aquaculture sector requires a production cycle fundamentally different from that in agricultural farming. He proposed the implementation of an information system for analyzing the economic and financial efficacy of production operations both in the existing farms and those still in project stage. [4]

International agreements are required in order to regulate fisheries taking place in areas outside national control. [2] The desire for agreement on this and other maritime issues led to the treaty known as the United Nations Convention on the Law of the Sea (UNCLOS). After the accession of Bulgaria and Romania to the European Union, the Black Sea has become the sovereign responsibility of Common Fishery Policy of EU.

3. Research Questions/Aims of the research

This paper aims is to develop an objective analysis of the current state of European aquaculture sector, as well as the European Union's efforts to ensure itself a place on a highly competitive international market, emphasizing the European funds that support this sector.

4. Research Methods

Implementation of the Common Agricultural Policy implies the enforcement of certain rules, as well as a control of their compliance. The main objective of this paper is to analyze the evolution of the aquaculture sector in the European Union, by using data and statistics provided by international and European specialized institutions. In order to reach the objective of the present paper, numerous sources and materials have been appealed, focusing on data regarding European situation.

The period of application is 2008-2015, the date being allocated for all European countries which are involved in the aquaculture sector. ????

5. Structure

5.1. Current situation of aquaculture sector

In Europe aquaculture is practiced both in an intensively and extensively way [9]. Traditional extensive freshwater fish farming is practiced across the whole Europe, and is common in Central and Eastern Europe.

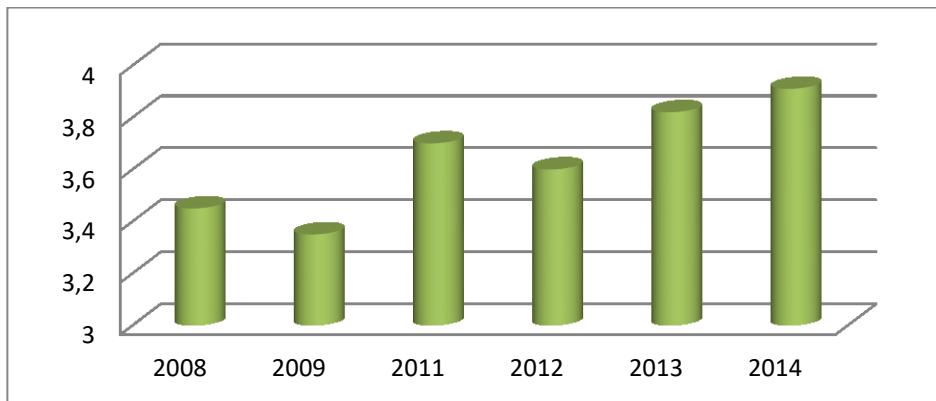
This long-established farming method consists of maintaining ponds (natural or artificial) in such a way that they foster the development of aquatic fauna, but the production in these extensive farms is generally low.

Regarding semi-intensive freshwater aquaculture, in this type of system, the production of the pond is increased beyond the level of extensive aquaculture by adding supplementary feed, usually in the form of dry pellets, to integrate the feed naturally available in the pond, allowing for higher production per hectare.

In the case of intensive freshwater fish farming, there are several open-air concrete tanks, raceways or earth ponds of different sizes and depths suited to the different stages of growth of the fish. A race taps river water upstream and returns it to the river downstream after it has flowed through all the tanks. It is used typically for trout.

The new model is that of integrated aquaculture. This is an innovative systems developed to increase the productivity and reduce the environmental impacts of aquaculture by combining different types of production.

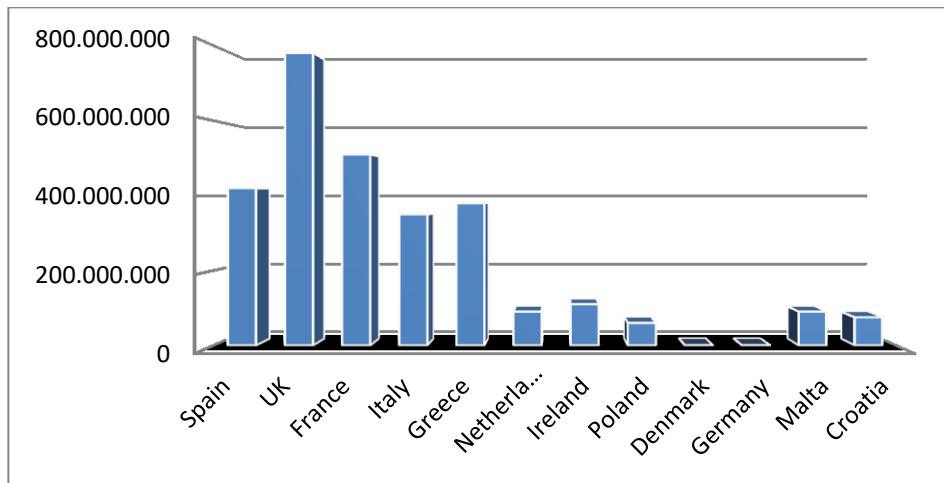
Figure 1. Evolution of EU aquaculture production value (value in Euro, UE28)



Source: EUROSTAT

The main aquaculture producers in the EU are Spain (22%), France (17%), United Kingdom (16%), Italy (13%) and Greece (8,5%), which provided about 77% of total aquaculture production.

However, in terms of production value, United Kingdom is the largest producer (21%), followed by France (19%), Greece (13%) and Spain (12%). Mussels, oysters and shells are predominant in Spain, France and Italy, the United Kingdom producing mainly salmon, and Greece sea bass and sea bream.

Figure 2. Main aquaculture production - EU countries (average value in Euro)

Source: EUROSTAT

5.2. The European funds for aquaculture

For the 2014-2020 financial period, approximately 20% of funding from the European Maritime and Fisheries Fund will be invested in the aquaculture sector. The Member States of the European Union have programs adopted by the Commission, which is mentioned how funding from national and EU sources will be directed towards strategic priorities for a sustainable aquaculture according to the multiannual strategic plans.

Table 1. Fisheries funds EMFF funding allocated to sustainable aquaculture

Austria	7.96
Belgium	12.52
Bulgaria	36,22
Croatia	73.68
Cyprus	12.60
Czech Republic	27.70
Denmark	34.33
Estonia	17.87
Finland	37.70
France	149.43
Germany	85.64
Greece	89.76
Hungary	34.36
Ireland	29.80
Italy	221.13

Latvia	46.27
Lithuania	28.29
Malta	3.31
Netherland	6.56
Poland	268.99
Portugal	78.67
Romania	112.29
Slovakia	12.54
Slovenia	8.0
Spain	274.54
Sweden	19.79
United Kingdom	26.33

Source: *Fisheries Funds (EMFF)*

In the case of Romania, the EUR 230.7 million allocated to Romania only from European funds for the previous financial period [9], represented the fourth budget after Spain, Italy and Portugal. In the new budget, the amount has been substantially decreased due to the low absorption rate. In general, the problems of the Central and Eastern European states were caused by the suspension of payments from European funds. The payments through the Fisheries Operational Program, POP, have been stopped due to some errors and irregularities in the process of selecting the submitted projects, but also to some shortcomings in the separation of functions and responsibilities within the Management Authorities.

6. Discussions

Although it produces only 2% of the quantity of fish from hatcheries from the global markets, the EU is a leader in terms of quality, whether we are referring to the intrinsic quality of products, or to research or environmental standards. Over the next ten years, the EU can develop its aquaculture sector by 30% without compromising its environmental standards.

Also, Brussels can reduce its dependence on imports, which now is reaching 65% of consumption.

The contribution of aquaculture to employment has been noted in Norway, United Kingdom, Scotland, and Greece, particularly in several regions where it exists few alternative economic activities, being able to provide stable jobs for the workers.

European aquaculture has available natural and human resources and we can say that her development is sure. The environment issues will

determine the future development of this sector, if we take in account the production.

For an intensive development, the efficient use of water resources is an important issue. A big proportion of fishponds, especially in Central and Eastern Europe will be used for the semi-intensive production of traditional species (carps) for the local and regional markets.

For marine aquaculture, water quality problems could become critical factors for the development. Must be used various methods for the expansion of coastal aquaculture but also for minimizing the different environmental impacts, using controlled waste disposal and new technological equipment.

Sustainable aquaculture development [10] is a priorities for European Union. Which is why the sustainable development of this sector involve the improvement of productivity by innovative investments in equipment, modernization and limit negative environmental impacts. Equally important are also the identification and mapping of suitable areas for aquaculture, the training education and certification of staff and the support for new farmers entering the sector.

7. Conclusions

In conclusion, it is necessary to invest more in aquaculture, to increase investment in the existing equipment and for its modernization, as well as to develop farms for more valuable species, such as sturgeons.

A sustainable growth in the aquaculture sector requires two crucial things: safety of the business environment and financial support. For safety, it is necessary a good planning and for funding, the European Union is already supporting this sector. Nevertheless, the business environment is stimulated by simplified administrative procedures and many European regions are still having things to do. There are still being lost businesses and money in aquaculture, and Romania is one of countries undergoing this.

As regards aquaculture and pisciculture in Romania, the implementation of complex systems for quality control and security, including traceability information systems, are still at the start.

But the most important would be that these aquaculture and fishing sectors will be considered as strategic sectors, since in Europe there is great potential for very large-scale fishing, specialized labor and having tradition in the field, infrastructure is available and research in this area is leading at the level of universities and research institutes. Paradoxically, Romania has advantages compared to the other countries, but it does not manage to turn them into account, the same as other European countries.

In these latter days we hear discussions about European funds absorption and the percentage drawn, but the problem is not necessarily about how much had been absorbed, although it is important the amounts, but is the way in which we use this percentage and how well these funds are orientated to the specific needs of countries and citizens.

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References

- [1]. Applegate LM, McFarlan FW, Austin RD. Creating business advantage in the information age. McGraw-Hill Higher Education; 2001 Dec 1.
- [2]. Duzgunes E, Erdogan N. Fisheries management in the Black Sea countries. *Turkish Journal of Fisheries and Aquatic Sciences*. 2008 Apr 1;8(1):181-92.
- [3]. Hexin FS. WU. Technology of aquaculture wastewater treatment and application [J]. *Techniques and Equipment for Environmental Pollution Control*. 2004;9.
- [4]. Neculita M, Moga LM. Analysis Of Romanian Fisheries And Aquaculture In Regional Context. *The USV Annals of Economics and Public Administration*. 2015 Mar 7;15(1 (21)):127-32.
- [5]. Roudgarmi P. Qualitative research for environmental sciences: A review. *Journal of Food, Agriculture & Environment*. 2011 Jul 1;9(3&4):871-9.
- [6]. Shi HH, Zheng W, Ding DW, Lu JB, Zhang XL. Valuation of the typical marine ecosystem services-A case study in Sanggou Bay. *Marine Environmental Science*. 2008;27(2):101-4.
- [7]. Varadi I, Szucs I, Pekar F, Blokhin S, Csavas I, Subasinghe RP, Bueno PB, Phillips MJ, Hough C, McGladdery SE, Arthur JR. Aquaculture development trends in Europe. 2001.
- [8]. *** The State of World Fisheries and Aquaculture Food and Agriculture Organization of the United Nations 2016.
- [9]. *** Planul Național Strategic pentru Pescuit 2007-2013
- [10]. *** Strategia pentru o dezvoltare durabilă a acvaculturii europene, COM(2014) 511, Comunicarea Comisiei Europene către Consiliu și Parlamentul European
- [11]. *** EUROSTAT
- [12]. www.ec.europa.eu