

ANALYSIS OF ROMANIAN FISHERIES AND AQUACULTURE IN REGIONAL CONTEXT

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Abstract:

Integration in European Union assumes obtaining certain benefits. Fisheries and aquaculture can provide a key contribution to food security and poverty alleviation. Employment in the sector has grown faster than the world's population, providing jobs and supports the livelihoods of hundreds of millions. Fish continues to be one of the most-traded food commodities worldwide being very important for developing countries. However, productivity gains in fisheries do not always imply long-term increases in supply. Developing countries are continuing their efforts to clarify the linkage between development activities and sustainable resource use. Both population and economic growth are putting enormous additional pressures on inland and marine fisheries resources as contributors to food security and providers of a social safety net. At the same time, the use of domestic fisheries to generate foreign exchange is exacerbating allocation issues between artisan and industrial fleets. The actual fisheries legislation was influence by social, economic and environmental considerations. The paper proposes an integrated analysis of Romanian situation by means of data and statistics provided by European and national statistics institutions. Fisheries in general and aquaculture sector in particular could be regarded as an advantage for Romania in the European competition. The main problem of the Romanian fisheries is its unsatisfactory competitiveness both regarding the domestic and European market.

Key words: aquaculture, fishery, food security, integration, policy

JEL classification: F15, Q13, Q22

I. INTRODUCTION

The aim of this paper is to analyze Romanian fishery and aquaculture situation to the regional level in the 8 development regions of Romania: [North-West](#), [Center](#), [North-East](#), [South-East](#), [South](#), [Bucharest-Ilfov](#), [South-West](#), [West](#). (Moga and Constantin, 2011). Romania's development regions do not actually have an administrative status and do not have a legislative or executive council or government. The main region's function is to allocate European Union funds for regional development.

The paper analyzes the current Romanian fisheries and aquaculture sector because fishery is very important in supply the European seafood market.

In Romania, the fisheries sector includes aquaculture, marine and inland fishing, processing and marketing. Romania's main fishery production component is aquaculture, followed by inland fisheries, while fishery activities along the coastline of the Black Sea remain limited when compared to the importance of inland fisheries. (Figure 1)

Marine fishing takes place only in the Romanian Black Sea national waters and the national fishing fleet is represented by the small scale fishery. Commercial inland fishing takes place in rivers, ponds, reservoirs, the Danube River, the Danube Delta and the Danube Delta Biosphere Reserve. The Romanian aquaculture sector is predominantly freshwater and regarding the extensive farming, they have the advantage of preserving the quality of the water. Recently the extensive fish

farms provide other service such as: ecological tourism, recreational fishing, and educational activities.

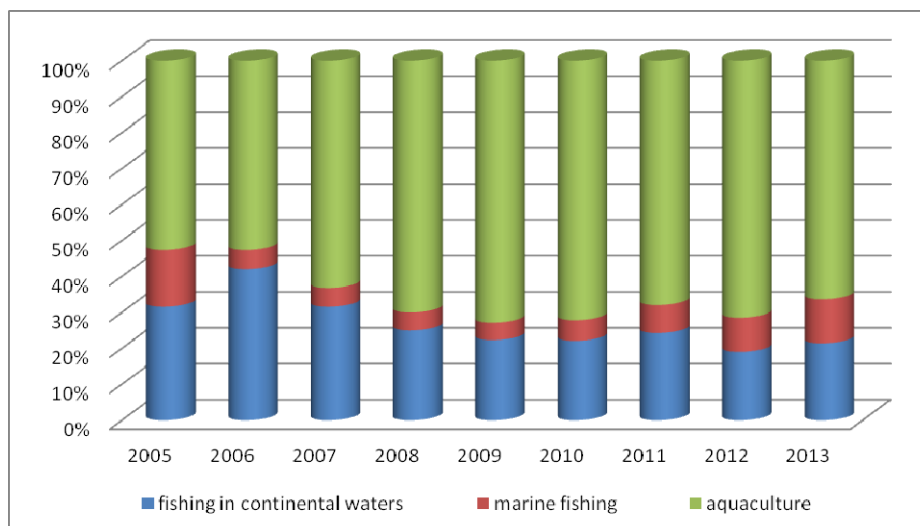


Figure no. 1. – Romanian fish productions. Variable trend (2005-2013)

Source: Romanian market analysis of fish and fish products, ROMPOP 2014

The data analysis shows that, Romania's fish production has fluctuated (unpublished). In 2005 was 13,337 tones, registering a maximum of 17 942 tones in 2008, after which the economic crisis, fell to approx. 11.600 tons in 2010 and 2011, the last two years, 2012 and 2013, registering a recovery up to 13,500 -15,000 tons.

Fisheries and aquaculture, along with fish processing and trade of fish products are activities present in all regions of the country. In some isolated areas, such as Danube Delta, fishing is one of the main activities that provide employment and sources of income for the local population.

II. METHODOLOGY

The paper develops a methodological framework establishing statistical methods for measuring and analyzing the interaction between regional integration and regional development to the national level and the influence it has on Romanian fisheries and aquaculture production.

Data were collected and processed from the national institutions and Eurostat. The period considered is 2005-2013.

III. AQUACULTURE AND FISHERIE SECTOR

1. Aquaculture

The Romanian aquaculture production represents the most important part in fish production, in terms of share ranging. Its weight varies in period 2005 - 2013 from 54% to 76% of total production, with an average of 68% of the total production.

The Romanian traditional aquaculture system is extensive or semi-intensive, and based on cyprinid polyculture.(Zaharia 2012)) The main species produced in Romania from aquaculture to 2005 was dominated by cyprinids, both Indigenous and Asian origin(such as: silver carp, bighead carp and grass carp), representing 85% of the total, 15% being represented by trout, perch, pike, perch, catfish, sturgeon, etc. After the cyprinids, the second species produced is trout sharing 9%, followed by crucian carp with 9%.

Many of the pond sites are degraded, as they have been given little or no maintenance over 15 years. Unfortunately, an important part of the existing aquaculture surfaces are unsuitable for aquaculture, particularly since they have not been adapted to the requirements of modern

production processes. There are over 100.000 ha designated for aquaculture activities in Romania, structured in fish farms, hatcheries, and nurseries. (Table 1)

After '90 the aquaculture production decline as consequence of the transition to the market economy, low investments and an unclear institutional and legal framework, particularly as regards land ownership (Cristea, Zugravu et al 2011). Today, the production recovered, but we have more to do until will reach the European average.

Table no. 1. Distribution of aquaculture units by region

Region	Units	Facilities	Total area	Nurseries area	Farms area	%
North-East	58	72	9412,2	942,014	8470,18	9,2
South-East	93	99	66726,1	3385,26	63340,7	65
South	143	160	14122,5	1472,81	12649,7	14
South-West	38	39	2544,15	129,312	2414,83	2,5
West	39	37	1709,22	279,676	1429,55	1,7
North-West	66	75	3128,84	380,741	2748,09	3
Center	53	57	2726,49	83,3207	2643,17	2,7
Bucharest-Ilfov	28	5	1986,2	0	1986,2	1,9
TOTAL	518	575	102356	6673,14	95682,3	100

Source: ANPA (RUA, PNCD)

2. Inland fishing

Inland fishing is carried out as main, full time occupations, often by traditional fishers. In some case, it is a subsistence activity for people who have insufficient income from other sources (Zugravu, Turek Rahoveanu et al 2011).

Fish catches made in inland waters during 2005 – 2013 (Figure 2) are at a relatively constant level. The lowest production was recorded in 2010 and was 2457.1 tons and the largest amount, 6.045 tons, was registered in 2006. In 2013 was a production of 3094.3 tons, the highest in the last 3 years.

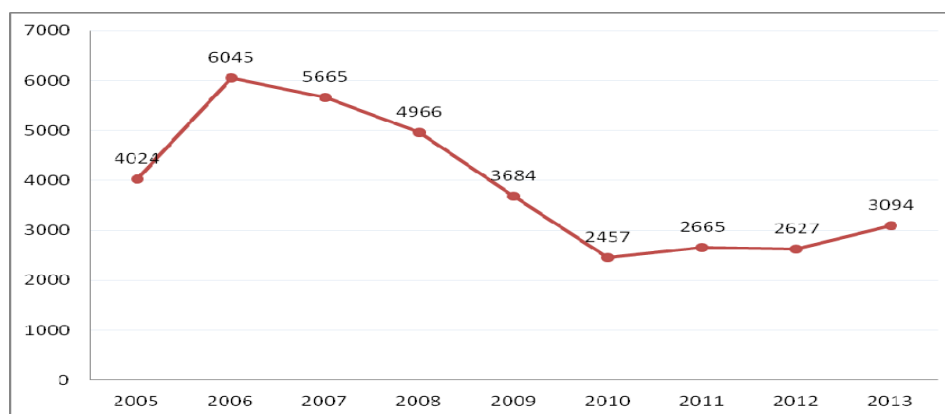


Figure no. 2. – Romanian inland fishing(tons). Variable trend (2005-2013)

Source: Romanian market analysis of fish and fish products, ROMPOP 2014

The analysis of the average values of catches by species during 2005 - 2013 (Figure 2) shows that the main species caught in inland waters were: crucian carp 41,2%, bream 16,7%, roach 5,9%, carp 4,7%, pike perch 4,4%, catfish 4,2%, pike 2,6%, Danube mackerel 8,4%. Predatory fish represent 12,25% of the period average catch.

3. Marine fishing

In the period 2006 - 2013, Black Sea catches recorded in 2010 a minimum of 230.9 tonnes and a maximum in 2013 of 1617.3 tons, this is mainly due to the increased demand for rapana, representing over 50% of the marine production obtained. (Figure 3)

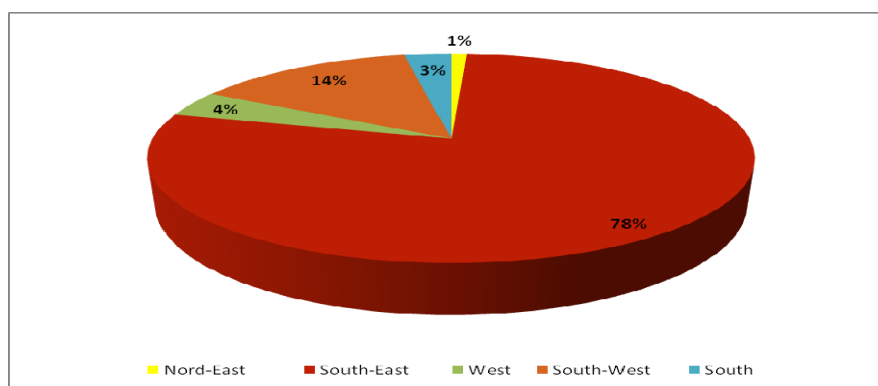


Figura no. 3. - Regions share of catches from commercial fishing. Shares in 2013

Source: Romanian market analysis of fish and fish products, ROMPOP 2014

The situation in the Black Sea catch is as follows: 2008 - 443,9 tons, 2009 - 331,8 tons, 2010 - 230,9 tons, 2011 - 537,2 tons, 2012 - 810,6 tons, 2013 - 1.617,3 tons.

Regarding processing industry of fishery and aquaculture products we observed a concentration of these units in areas with a tradition of fishing and fish farming, respectively in the South-East region (Figure 4) formed by counties with a large hydrographic network.

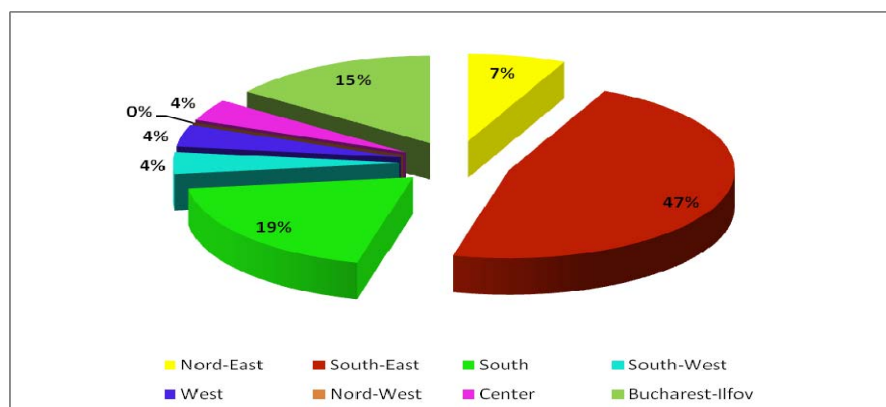


Figura no. 4. - Distribution processing industry units by region. Shares in 2013

Source: Romanian market analysis of fish and fish products, ROMPOP 2014

In Romania, the overall value of the output of the processing industry amounts to around 44504 EUR Value of the output in 2011 (in thousands of EUR) and the number of persons employed measured in full-time equivalent national was 1178. Consumption varies in European Union from 5.3 Kg per person in Hungary and 6.3Kg per person in Romania to 56.7kg per person in Portugal according to EUROSTAT(FAO -STECF, The 2013 Annual Economic Report).

Aquaculture fish production is about 17,000 tons and the rest up to 90,000 tons, as is the annual consumption in Romania, is covered by imports. Our country provides less than 20% of consumption.

It predicts that the total market fish (fresh and frozen) will continue to grow about 25-30% each year. One of the problems of suppliers is lack of qualified personnel in factories and shops. Fish is most sensitive meat and when you are dealing with this product or with fresh seafood, the problem is the warranty. It takes well-qualified people to implement traceability systems. Economic objective is to increase fish consumption from 6 Kg per person per year in Romania, to an average of 20kg per person per year in European Union.

Table no. 2. Fish consumption evolution [thousand tons]

	2008	2009	2010	2011	2012	2013
Sales of fish from domestic sources, to population and processing units. Total of wich:	16,2	16,1	11,5	11,6	13,4	14,5
Fish from aquaculture ***	12,5	13,1	8,8	8,4	10,0	10,0
Fish from marine and inland fishing	3,7**	3,0**	2,7**	3,2**	3,4*	4,5*
Imports***	89,6	90,2	86,0	69,2	74,4	74,8
Exports ***	1,7	4,1	4,7	6,5	6,2	6,3
Total intern consumption (= 1+2-3)	104,1	102,2	92,8	74,3	81,6	83,0
Consumption per capita (kg/pers/year)	4,6	4,6	4,1	3,3	3,6	3,6

Source: * M.A.D.R., **ANPA statistics; *** EUROSTAT

4. Economic performance

From 2013 to 2012, total income decreased by 16%, while the operational cost decreased by 15%. The total income is dominated by the turnover from the sale of fish from the farms, which contributes 65% of total income, leaving only 33% to other income and only 2% for subsidies.

The feed costs are 21%, livestock costs are 18% and wages and salaries 20%. The total expenditures totalize 68% of the total income. The total value of assets decreased in 2013 comparing with 2012 by 11% and debts increased by 3%. This is mainly due to the decreasing number of bigger farms and increasing the number of small farms. The net investment increased 180%, but it is still low.

It is importance to increase the local production and reduce the dependence from the import (more than 100,000 tones are imported annually). The price is driven by the trout price, which has remained at the relative constant level.

For the Romania aquaculture producers 2013 was better than 2012 because the Romania sector opportunities are at a higher level. The economic crisis and the consequences are over passed. The new regulation, especially its provisions stimulating aquaculture production is expected to increasing the investments in the sector for on growing production.

IV. CONCLUSION

In case of the 8 regions, have been observed for aquaculture, inland fishing and marine fishing, certain needs of the actors involved, needs that lead to a slow positive trend compared with the European situation.

Aquaculture sector needs more efficient production activity, investments in rehabilitation and sites modernization, state intervention through legislative simplification, fiscal incentives, use of allocated funds and funding partnerships with research institutions.

Commercial fisheries (inland and marine fishing) should invest in the modernization of ports, fishing fleet, promoting fishery products, implementing an integrated traceability system for monitoring the entire route from capture to final consumer, compensation and subsidies for unforeseen circumstances. Across all regions, identified needs for processing are related to the efficiency of the production activity, the use of allocated funds and state intervention measures.

Must trace the improvement of product quality, problem that influence the marketing of products internally and externally. Product quality is conditioned by European and international regulations and the Romanian water legislation (difficulty of land tabulation) which sometimes hinders the development of fish farming.

Product diversification is very important, Romania has to sell new species, especially valuable species to attract new market share to national and international level. Increasing market share is based on sales growth,, which is based on marketing and on effective management of distribution channels. Market share is influenced by the buyer reticence for commercialization of

fish from natural environment or from aquaculture. In Romania the population prefers fish from the natural environment, even if aquaculture fish do not suffer genetic mutations.

Romania has a special situation in Europe because we do not have a fishing fleet. However, in all 8 regions, the share of sales of native species is holds by carp, crucian carp followed with 20% and then followed the other freshwater species. Although in recent years has stimulated the research for development sturgeon aquaculture, the lack of habit and lack of market consumption prevented its commercialization.

However to expand the production further the industry needs new licenses, modernizing the existent farms, and training of the staff, new technologies to be applied(Dong, Moga et al 2011).

V. ACKNOWLEDGEMENT

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