SITUATION ANALYSIS OF THE FISHERIES SECTOR OF TURKEY

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Abstract: The fisheries sector is one of the fastest-growing sectors in our country for the last thirty years. According to the data of the 2018-2019 ministry of agriculture and forestry, approximately 50% of the total aquaculture production of our country is obtained through aquaculture and 50% through hunting. Seafood, one of the important export items of our country, increased by 13% in 2018 compared to the previous year and provided USD 952 million in foreign exchange inflow. However, the potential for seafood production and the potential for increasing employment in this field cannot be adequately evaluated. There are important problems in this regard, such as excessive exploitation of the seas and insufficient encouragement of aquaculture activities on a state basis are the main reasons for this. The eases will be provided by the government to the local and foreign investors, expanding the seafood production in a sustainable and healthy way with novel technology focus are thought to be the main factors that increase and maximize the regional and national income in near future.

Keywords: fisheries sector, regional development, situation analysis.

Introduction

For centuries, fishing and fisheries products have been one of the most important means of livelihood and nutrition in all societies. Especially in the countries which have coasted to the seas and in the countries which have rich in inland waters such as lakes, ponds, and rivers, this sector has gained more importance and has been moved to the next dimension. Turkey has 8343 km of coastline to four seas with different ecological and environmental structures. Besides, Turkey is a special country with its rich in inland waters such as lakes, ponds, rivers, and dams. Therefore, fishing activities have become quite advanced in this context. The aquaculture sector, which has been active in hunting for centuries, has gained a new dimension with the small scale aquaculture activities laid in the 1950s. In recent years, when the product amounts obtained from aquaculture activities are examined, it is seen that the aquaculture exceeds the fisheries. As of 2018, total fisheries and aquaculture amounts were reported as 222,184 tons and 313,640 tons, respectively (TUİK, 2019). Especially when the data of the last years are examined, it is seen that the total amount of aquaculture is the same or above the amount of hunting (Figure 1).

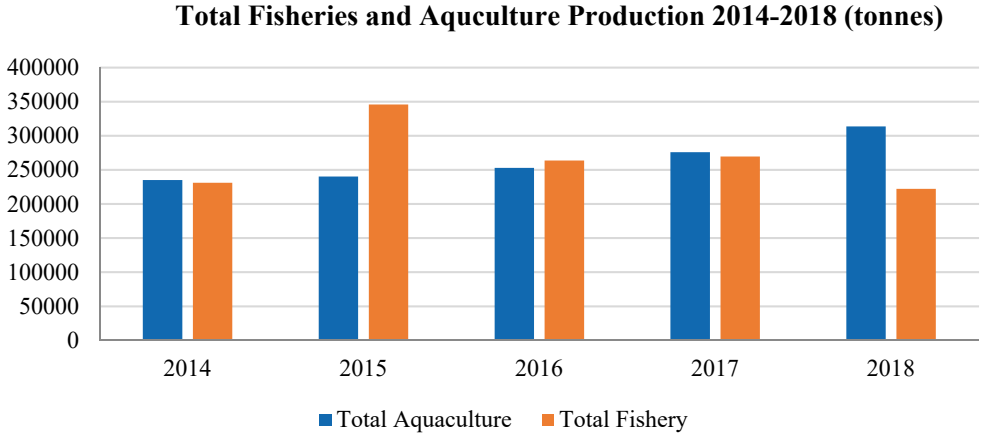

Figure 1. Total seafood production in Turkey between the years 2014 – 2018

The rapid increase in the production of aquaculture and the fact that this increase was formed as a result of the expansion of the production volumes of the newly established enterprises and the already existing enterprises led to rapid development and changes in other branches of the sector. In particular, for aquaculture production, material suppliers, increasing the number of employees in parallel with the growth of pairs, expansion of the processing sector required for the marketing of these products are some of them.

Increasing the production and expanding sector brings some problems along with these developments. Among the most important problems resulting from the accelerated increase in this sector, which provides high economic inputs, is the endangering of sustainable fish catching for the hunting area, depletion of ecological balances and the extinction of certain fish and aquaculture products, and the conversion of products obtained through aquaculture or hunting into high value-added products. Inadequacy, high amounts of waste and insufficiency in the evaluation of these wastes are among the first of these problems.

Fisheries and Aquaculture Production

A remarkable increase has been observed in aquaculture, especially in the last 5 years. This increase has exceeded fishing production (Figure 1). Fish is the most important part of the product obtained from the seas by hunting. In the last five years, the most caught fish species and their price values in euro terms are summarized in Figure 2 and Figure 3.

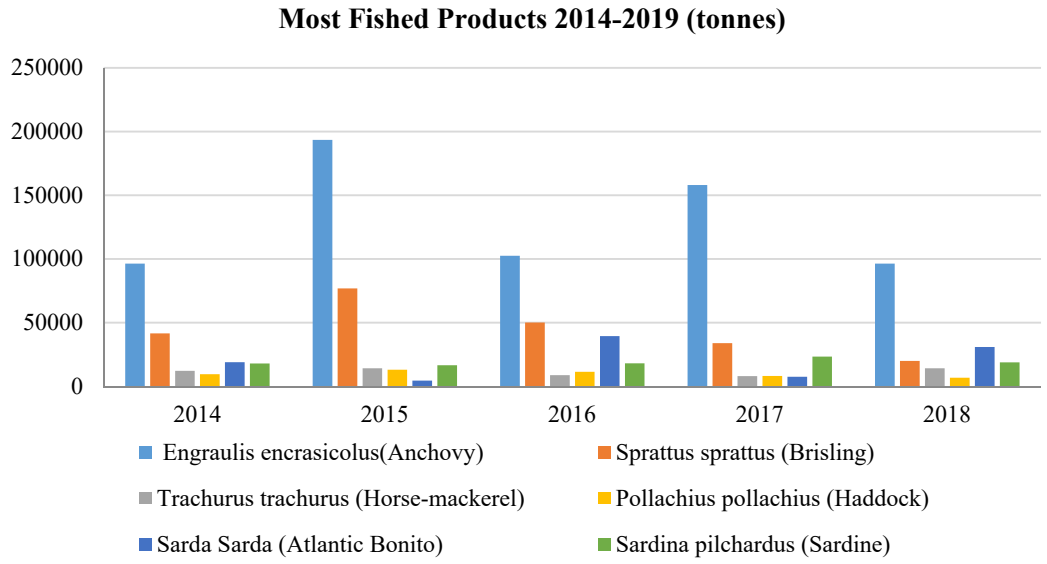

Figure 2. Most captured fish species in the last 5 years in Turkey

Apart from fish, other marine organisms of high economic importance are also hunted through fishing. Although they have low rates in terms of quantity of hunting, these products are highly economic. Figures 4 and 5 show the most valuable products in terms of kilograms, except for the most commonly caught fish in the last five years.

Aquaculture production, on the other hand, led to a surge in hunting production in parallel with the increase in the production of certain species. The most important species obtained by aquaculture and their production amounts are summarized in Figure 5.

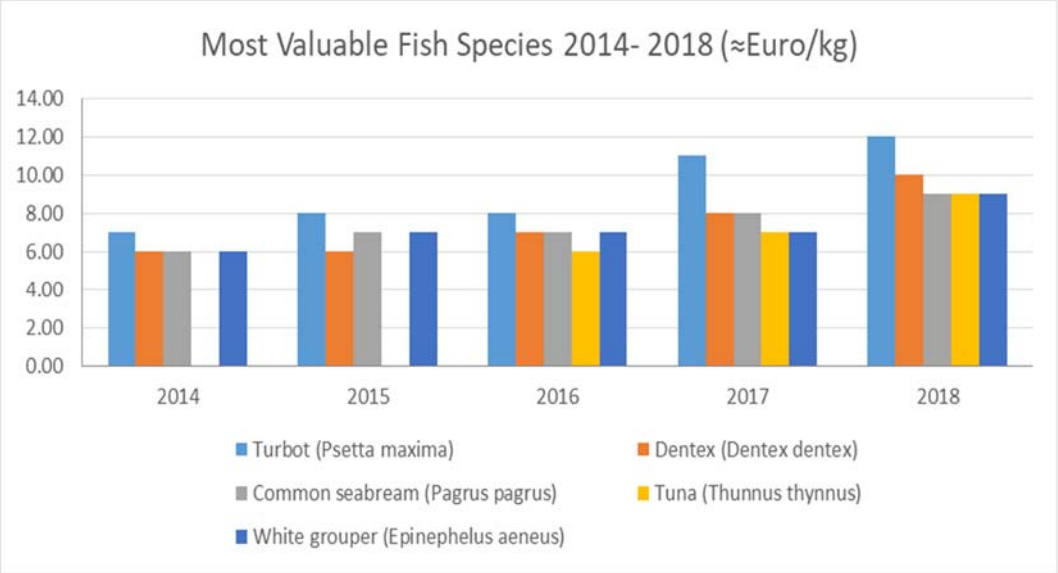

Figure 3. The most valuable fish species in kilograms in Turkey

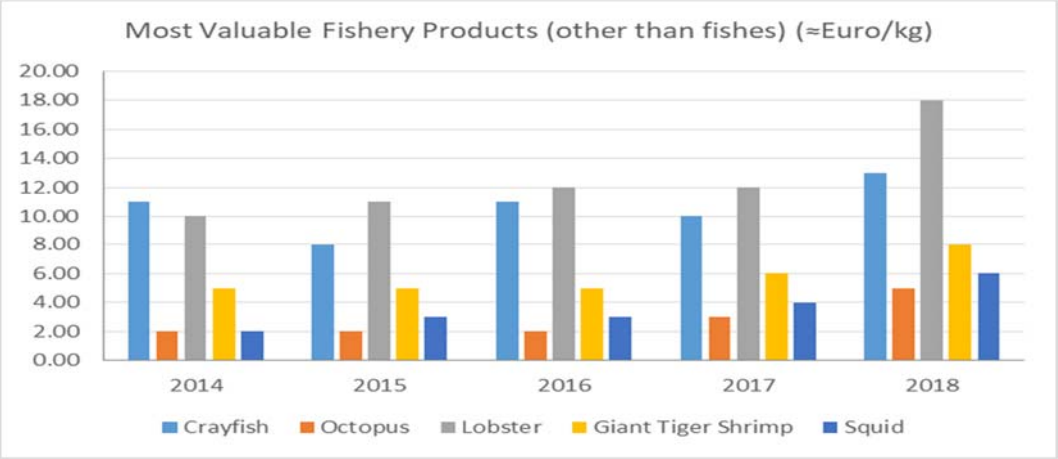

Figure 4. Most valuable seafood other than fish in Turkey

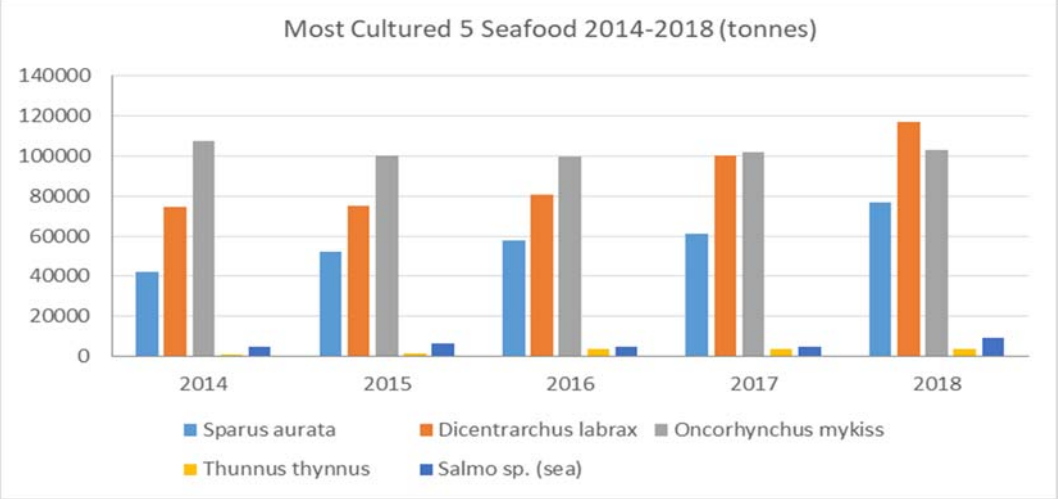

Figure 5. Most produced fish species in aquaculture in Turkey for the last 5 years

Evaluation of Produced Seafood

A significant amount of products obtained through hunting and aquaculture is offered to domestic consumption and foreign market. In particular, almost all aquaculture products such as trout, sea bream, and sea bass are sent to the domestic market and export. However, in hunting products, economic value and unequal quantities and varieties of species direct producers to use in different ways. After production, the usage patterns of the products are summarized in Figure 6.

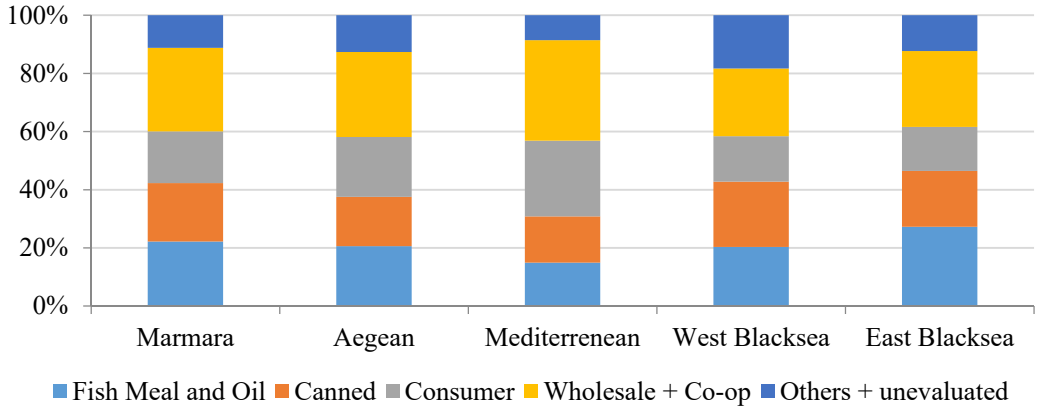

Figure 6. Regional distribution of produced seafood according to consumption (%).

Turkey showed a significant increase compared to the year in the amount of export aquatic products. As of 2018, approximately 750 million Euros were obtained from the export of fishery products and around 155 million euros were imported (Table 1). According to these amounts, the ratio of exports to imports in 2018 was +48 %.

Table 1. Total seafood export and imports of Turkey between 2014-2018 (Euro)

Years	*Export*	*Import*
2014	474.739.744	146.628.703
2015	582.274.108	220.248.177
2016	673.607.381	158.457.112
2017	706.765.717	196.681.615
2018	744.869.869	155.996.315

Table 2 summarizes the countries in which the most import and export of fishery products are made by Turkey. When the average values between 2014-2018 are analyzed, the most important recipient country in exports is the Netherlands and Norway is the country where most products are imported. In general, while there is a regular increase in the amount of exports every year, there are fluctuations in the amount of imports and the associated financial values.

Table 2. Top 5 countries of export and import made by Turkey (in the value of the Euro).

	Export (Euro)			*Import (Euro)*	
1	Netherlands	125.626.254	*1*	Norway	77.589.387
2	Italy	71.745.957	*2*	Iceland	13.279.255
3	Germany	61.259.426	*3*	Morocco	12.563.686
4	UK	53.900.651	*4*	Spain	10.564.071
5	Russia	42.978.365	*5*	China	7.726.504

Undoubtedly, the owners and partners of firms earn the most important share in the distribution of the revenues obtained from the production and marketing of fishery products. The remaining share is mostly distributed among trading firms, middlemen or boats that sell or processing seafood to intermediaries and marketers. Also, employees such as workers' technicians, technicians, engineers and consultants who constitute an important part of the production with undertaking important tasks in terms of increasing production technically and scientifically, are involved in this sector and share the total earning. The approximate value of the monthly and annual salaries of the employees adapted to Turkey by 2019. Located in the fisheries sector are summarized in Table 3 on the CPI index in Euro.

Table 3. Monthly and Annual Income of Employees in the Fisheries Sector (by Sep. 2019)

International Standard Classification of Occupations (Code in ISCO-08)	*Monthly (Euro)*	*Annual (Euro)*
Engineer in Fisheries Sector (2132)	1315	16738
Adviser in Fisheries Sector (2132)	1315	16738
Aquaculture and Fisheries Production Manager (1312)	1875	24013
Fishery and Aquaculture Laborer (9216)	439	5494
Seafood Processing Worker (7511)	430	5179
Agricultural Technician (3142)	865	10892
Agricultural Operative (3142)	865	10892

In addition to those working in the terrestrial sector, there is a significant amount of staff working on the sea, depending on the number of boats. The number of fishing boats, which has the most important share in production by the fisheries, and the number of employees working in these boats are summarized in Table 3 based on 2018. When the table is examined, especially in coastal areas, the number of small-scale local boats and fishermen is 7556 and 11202, respectively. The purse seine ships, which are capable of hunting on an industrial scale and in all seas (including oceans), are 373 and the number of employees working on these boats is 7610. The trawler, which is one of the most important ship groups in terms of hunting, has 782 boats and 4014 people work in these boats. The remaining boats are mainly small-scale and are locally hunted.

Table 4. Ship and fisherman numbers in Turkey by 2018

	Boat Number	*Employee Number*
Trawler Boat	782	4014
Seine Boat	373	7610
Carrier Boat	120	505
Others	286	358
Trammel Nets	7556	11202
Beam Trawl and Dredge	444	1160
Long liner and Fish Line	3726	3997
Surrounding Net Fishing	861	1964
Trawl	15	56
Lift net	3	9
Eel-buck	2	1

The Potential and Problems of Fisheries Sector

In the perspective of fishery production, Turkey has a great number of fishing boats and employees. This situation is caused by Turkey to lose its natural stocks significantly. The high number of active ships and the increase in the number of personnel working on these ships indicate the need for more hunting. This leads to more efforts for the exploitation of natural stocks. Not only the increase in the number of workers and vehicles on the sea but also a significant amount of personnel are employed in the landing, transporting, and marketing of these products or in the processing of these products. Consequently, all these personnel, and ultimately the sector, constantly need fresh products. As mentioned above (Figure 1), the fact that most of this need is obtained from natural stocks by hunting, except for the last two years, constitutes a major obstacle to sustainable production. Particularly in recent years, this problem is partially solved by the production of more aquaculture products. However, the fact that the aquaculture species that are cultivated does not have the same variety as the natural stocks, as well as the increasing interest of consumers in natural foods in recent years, is again a problem for aquaculture products. At this point, the production of different species in aquaculture production, revision of the already produced products (especially bream, sea bass, and trout) with natural production theme will enable the use of the potential in this field efficiently.

Aquaculture processing plants, on the other hand, often have problems in supplying sustainable and sustained raw materials. In the factories where direct hunting products are processed, it is important to produce sustainable products with the same quality standards. At this point, it is thought that the establishment of new aquaculture farms or the production of the species to be processed in the aquaculture facilities already operating will have significant commercial potential and will be a solution to a significant part of the sustainability problems. However, it is foreseen that the fact that only the factories that process fisheries, at least the very specific products, make investments for the cultivation will bring an important solution and return to the companies operating in this field.

The recycling of waste and recycling issues, which attracted even more attention from the subject in recent years, Turkey has an important potential, especially in terms of new business creation and environmental protection. Aquaculture can easily go into the deterioration process after hunting. Therefore, from time to time, there are problems in terms of faulting efficiently from hunted products. In this case, it is considered that it has the potential to be converted to different raw materials or products by using high value-added recycling models through strategic investments, whether unused products or wastes resulting from the processing of fresh products to different product types. When all these potential problems and summarized, Turkey fisheries sector in the field of aquaculture rather than fishing production has significant potential and it is understood that the way is open. At this point, it is foreseen that new investors will adopt different types of trials or natural production models will be factors that will increase competition in the international market in the coming years. In terms of processing and marketing of the products, it is important to take into account the recycling activities as well as to invest in the cultivation of each processing company's products, to reduce dependence on external and to have sustainable quality production. At this point, the combination of processing and aquaculture activities is considered to be important in terms of both preventing many problems in the future and increasing competitiveness in the market.

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