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# COMPARISON OF FISHERIES SECTORS OF JAPAN AND TURKEY IN PRODUCTION, CONSUMPTION, TRADE AND FUTURE POSSIBILITIES

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**Abstract:** The purpose of this study is to show some view-points such as the expansion of the mutual trade scale in fish and/or marine products, and newly effective use of edible marine bio-resources in each country. Total quantity of fisheries production, consumption (per capita), export and import quantity of Japan and Turkey based on 2010 were reported as 75.27 million tons, 653 thousand tons; 8.5 kg, 70.9 kg, 566 thousand tons, 55.1 thousand tons,; 473 thousand tons, 80, 7 thousand tons respectively. Turkey- Japan total amount of fisheries trade was more than 56 million US \$ in 2011 and, but in 2000 was just over 14 million US \$. Japan and Turkey bilateral relations are friendly and cordial, and they are steadily improving. Therefore, they should prepare business plans or obtain funding for business plan development to identify new markets and explore business expansion opportunities.

**Keywords:** Turkey, Japan, fisheries, trade, potential

## Present condition

### *Turkish Relation with Japan*

Turkey and Japan have traditionally good relations since the 19th Century in the Ottoman Empire Period. Turkish and Japanese society is very warm and friendly attitude towards each other. In this case, the relations based on mutual trust and cooperation between the two countries, creating a suitable atmosphere for further development and diversification of bilateral relations based on mutual trust and cooperation, all fields. The most important element of trading and economic relations between them is Japanese investments in Turkey (MOFA, 2010). Japan is one of the main financial partners of Turkey on the financial reports. The level of financial assistance from Japan is 8 billion. In 2010, Turkey's export is US \$ 399 million (2009 was US \$ 399) and import soared 61% to US \$ 2.5 billion (Japan country report, 2011).

This paper intends to enhance Japan-Turkey economic ties that its first time survey of fisheries relation across the both of them. The 90 adults in Tokyo, Istanbul and Trabzon fish market's fishermen, fisheries businessmen in both country, Japan-Turkey economy forum members, JICA, JETRO, Turkstat, Embassy of Turkey in Tokyo, university professor in Nagasaki University, Karadeniz Technical University, Tokyo University of Marine Science and Technology and Trabzon Fisheries Research Institute, since September 1–15th to November 4–15th were interviewed on Japan Turkey relation, especially on fisheries relation.

It was difficult to find people who know Japan and Turkey fisheries industry. Therefore there was a limit of people to add on a survey. Every member of them agrees with the idea that Japan and Turkey relation is positive. (82% very positive and 18% positive). Many participators indicated that Turkey has become a meeting place in the heart of the nation, Europe, Middle East, and Central Asian countries; therefore Japan could pay more attention to Turkey on economic relation. Furthermore, Japan holds great economic potential for Turkey. This group is also the most likely conclude that the economic relationship is not properly positive between both country as social relation and cooperation.

### *Fisheries Sector in Turkey*

According to the State data; Turkey's eastern Mediterranean located 3% of the territory in Europe and 97% in Asia. Turkey is surrounded by sea on three sides by the Black Sea in the north, the Mediterranean in the south and the Aegean Sea in the west. In the north-west is also an important internal sea, the Sea of Marmara. Each of these seas differs in their content of organic matter and weather conditions. The exclusive economic zone of about 172,199 km<sup>2</sup> and inshore fishing area is 19,608 km<sup>2</sup> (PEW, 2011). This natural resource offers significant advantages in the use of various aquatic organisms. Each of these seas differs in their content of organic matter and weather conditions (FAO, 2011).

With 255 countries, Turkey is ranked 50th in aquaculture production and 26th in marine fisheries according to Global Aquaculture Production, published by the FAO in 2011 (FAO, 2011). In latest data, 480 sea fish species and 236 inland waters fish species are known to live in Turkey (The European environment, 2011). Regarding our interview, 80% participators reported that there is a reduction of more abundant species of marine fish taken in Turkey. Nearly 20 years, about 20-25 species of fish have been caught mainly, but there have been reduced to 6-7 species in recent years.

According to Turkish Statistical Institute; Fish production increased to 4.83% in 2010 over the previous year and it was about 653,000 tons in 200. Turkey produces about 0.6 percent of total world production of fish. Products of sea fishing are the largest segment of the industry. Marine fisheries production by catch was 485,000 tons. Aquaculture production was 137,000 tons. Inland fishery production was 42,000 tons. There is 14% decrease in total fishery catches, but 13% increase is in aquaculture production. The total fishery production consisted of sea fish by 68, 25%, inland water products by 6, 16% and aquaculture by 25, 59%. Marine fish a stock in the seas surrounding Turkey is descending, resources in freshwater is to offer a significant scope for the development of aquaculture and capture fisheries for freshwater. Figure 1 is for more details. The total production of Turkey by catch (tons), East Sea is a ratio of 58.75% in the first place, West Black Sea follows it by 17, 28%, Aegean by 8, 89%, Marmara by 8, 86%, and Mediterranean by 6, 22% in 2010 (Turkstat, 2010).

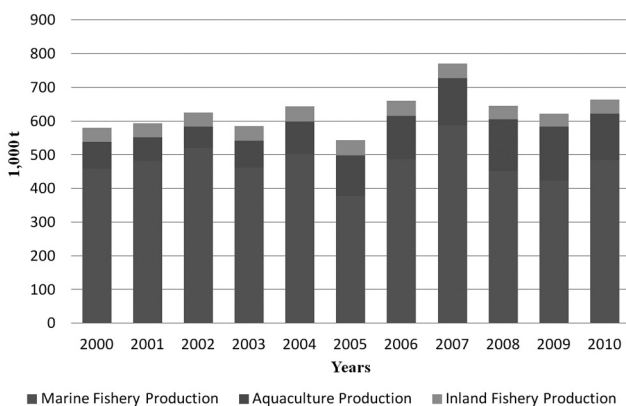


Figure 1. Source of Fishery Products (tons/year) in Turkey by years  
Source: Turkish Statistical Institute, various years

The fish processing industries play their vital role in increasing production and contribute to foreign exchange earnings for Turkey. The processed fishery products are mostly frozen products, then marinated, smoked and canned products. The processing of fresh fish for export has increased rapidly in lately years (FAO, 2008. Karkacier O, 2000). Regarding our interview, Domestic consumption of Sea bream and Sea bass has increased in recent years. Therefore, Turkish companies have spent more and more their effort for the domestic market and some fish dealers have also created their own market chains.

According to the results of the survey released; Turkey tries to export oriented fisheries may divert resources such as labor and capital away from production for local consumption on Anchovy, Atlantic bonito, Horse mackerel, Trout, Sea bream, Sea bass, Striped venus. Therefore, we would like to explain in more detail for these species production. In 2010, around 57% of the total landings are anchovy which is the pelagic most important in terms of harvest and taste of the Turkish people. Anchovy production was about 229,000 tons; increasing 11.88% in 2010. Atlantic bonito is one of the highest rate of catch of sea fish; 9,401 tons was caught in 2010. Its easy to find the high quality bonito products within Turkish bonito suppliers. Horse mackerel is one of the main seasonal supplies of small pelagic fish species in Turkey which 14,392 tons was caught in 2010. Who it tasted in Turkey says Turkish horse mackerel is delicious and Turkish companies export it EU and Middle East by fresh and frozen. Technical and operational overview of fishing vessels caught striped venus; shown up on store and export to EU countries, especially Italy until next fishing season and 26,931 tons was caught in 2010 (Turkstat, 2010). See Figure 2 for more details.

Aquaculture had begun in Turkey in 1980's with rainbow trout (*Onchorhynchus mykiss*), culture shows a sharp increase in 1990's. Modern fish farming is one of the most promising and fastest growths in Turkey. Between the years of 1986-2011, aquaculture production has increased from 3,000 tons to 167,000 tons. Turkey is rich in inland water with a high potential for fisheries and aquaculture.

Designed as a division of aquaculture production by species, trout aquaculture (inland water) has the highest percentage (47.6%) of production. The others are sea bass with 29.3% and sea bream with 17.9%, trout (marine water), carp (inland water) and mussel production etc. Figure 2 shows more detail on these explanations. (Turkstat, 2010).

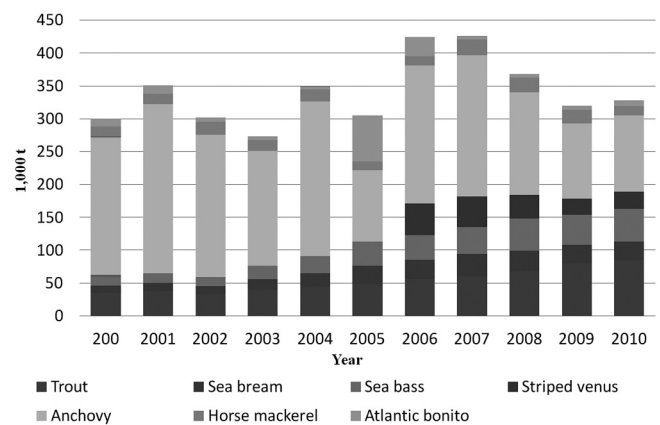


Figure 2. Catch of high potential fish types to export Japan in Turkey by years  
Source: Turkish Statistical Institute, various years

### Export and import by Turkish fisheries

Fishery sector is not a key trade sector for Turkey at the moment. However, fish and fish-related-products, especially exports and imports from Turkey have increased rapidly in

recent years. Exports were 55,109 tones in 2000, worth US \$ 131 million and imports reached 80, 726 tones, with a value of US \$ 105 million in 2010. In terms of value (price), there is a significant positive trade balance of US \$ 131 million in 2010 (DIE, 2011). The trend of export growth for the fisheries sector over the past two decades (see Figure 3) shows large potential export fishing opportunities in Turkey.

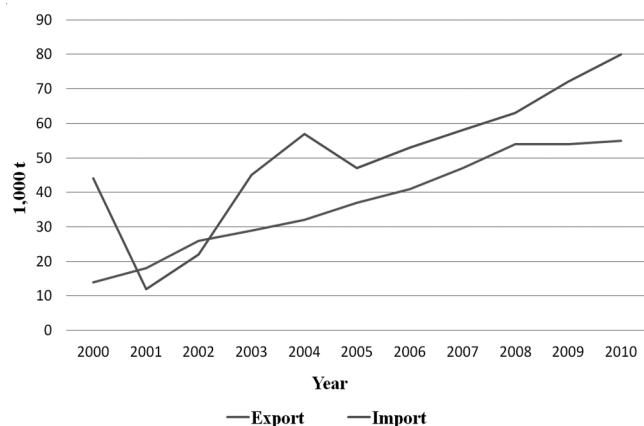


Figure 3. Export and import of fishery products in Turkey by years  
Source: Turkish Statistical Institute, various years

Turkish participators expect in our interview that fisheries sector turn can be further pressure on stocks of seafood in near future. More detail can be seen in Figure 3 export and import of fishery products in Turkey 2000–2011.

The relatively developed nature of Turkey fisheries industry has no limits the import potential. Turkish trade policy employs hardly a mixture of high rates and import bans to discourage imports and promote local production on fisheries industry very few times. The 80% of the total import of fishery products in Turkey is the frozen fish. Creating the two tuna canneries import large objects in Turkey with frozen. Most of the yellowfin tuna and skipjack tuna are frozen-imported from Indian Ocean and Spain. The main countries which export to Turkey are Norway, France, Iceland, Spain, China, USA and Greece (DIE, 2011. Turksat, 2011). In recent years, Turkish government acts as an intermediary in establishing business contacts among foreign importers to Turkish business man for development and promotion.

Turkey exports more than 200 types of fishery products to more than 60 countries. Exports from Turkey were carried out to 30 destinations without interrupt. Turkey’s current regulatory environment characterized by export prohibitions, complex inspection procedures and foreign exchange repatriation requirements makes it difficult to promote exports previous years.

In recognition of what the government began a number of export bans and pre-shipment inspection is to be removed under the microscope. Also Turkish government starts to support expeditiously for export business products and services. This is due to the importance of high value bluefin tuna, sea bass and sea bream in the export statistics. Almost

50% of sea bass and sea bream, 33% of rainbow trout production is exported to the EU and whole bluefin tuna production is exported to Japan (DIE, 2011. Turksat, 2011). Exports from Turkey stopped increasing at 2008 mainly by decrease of the export volume of tuna to Japan.

### Fisheries Sector in Japan

The fisheries industry is an important industry in Japan. It plays a significant role in providing fish protein to the population. Japanese land area is 377,801 km<sup>2</sup> and the length of coastal line is 29,751 km. The exclusive economic zone of about is 4,050,000 km<sup>2</sup>, the sixth in the world and 10.7 times as large as the national territory (White Paper on Fisheries Japan, 2010).

Many fishermen in Japan are currently engaged in coastal fishing and allow the difficulty to find their successors. Traditional fishing methods are designed with the environment and the characteristics of fish biology. They are managed in each of the community of the coastal fishing village and under the low of the fisheries. Japan has developed a unique marketing and distribution system of fishery products with a network of fish markets in landing places and those in the centers of consumption (MAFF (a), 2011). These particulars were made successful fish organization and high fish consumption in Japan.

Japanese fish production has increased and reached its peak at 1988. Since 1972 the former half of 1980 Japanese fisheries have gotten the biggest production in the world, with a maximum capacity of 11.6 million tons in 1988. Since then, Japanese production of fish has declined steadily. China and Peru has passed over in recent years. In 2010, the total fishery production of Japan was 5.27 million tons, which 4.08 million tons were from marine fisheries. Marine aquaculture produces 1.1 million tons. Japan’s recent aquaculture tries to culture the bluefin Tuna in order to fulfill the responsibility of the reasonable resource use.

Figure 4 shows more detail of the amount of caught fish in Japan 2000–2010 (MAFF (b), 2011). The rich coastal and

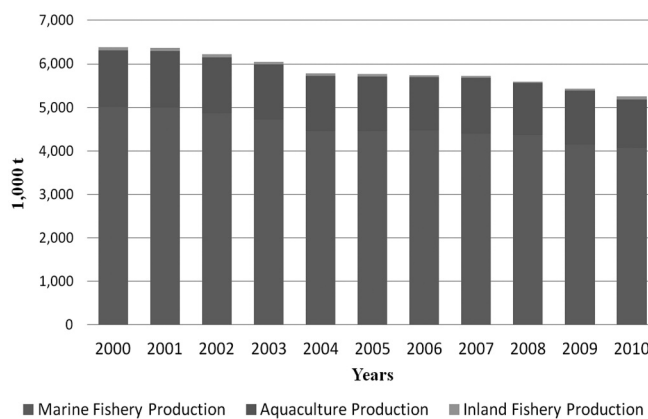


Figure 4. Source of Fishery Products (tons/year) in Japan between 2000–2010

Source: MAFF, catch by sector of fisheries in Japan on various years

marine areas surrounding Japan has developed fish-eating culture. Japanese marine fisheries are torn in three categories: the distant water fishing (mainly due to the pelagic and the foreign exclusive economic zone) the offshore fishing (in the domestic exclusive economic zone, as well as in bilateral agreements in there of the neighboring countries), and coastal fishing.

According to our interview released; tunas, bonitos, red sea-bream, pacific saury, jack mackerels and yellowfin tuna trade may indirectly contribute to the creation of new jobs through expanding trade from Japan to Turkey. The wild catch of tuna in Japan waters has decreased from 2010 in a previous year; it was approximately 188 thousand tons. Tuna trade, processing, markets, consumption, price and profits are spotted for sashimi, fresh tuna steak, katsuobushi (hard-smoked skipjack) and canned tuna. Bonito is e main catch, and even in a poor season, such as 2010 it dominates Japanese fisheries, and annual wild catch of sole is around 304 thousand tons in 2010.

The red sea bream is one of the most important commercial fish in Japan. A whole red sea bream is quite expensive and enough for an entire meal. It produces was around 95 thousand tons in 2010. Pacific saury is important commercial pelagic fish in Japan. Japan is one master place to learn, and share about mixed rice with pacific saury and the volume. The value of pacific saury landings were approximately 217 thousand tons in 2010. There are more than 140 types of jack mackerel in the world. 40 types of jack mackerel live in coastal waters of Japan. Jack Mackerel is often served in Japanese restaurant and known for Turkish consumer as well as tuna, bonito and pacific saury. The volume of jack Mackerel landings in 2010 amounted around 154 thousand tons. The three main customer groups of yellowfin tuna are Japan, US and EU. Yellowfin tuna is caught highly in Japan for the sashimi market and they amounted approximately 100 thousand tons in 2010. All of six kinds of spices data were obtained from MAFF, fisheries agency and white paper of Japan. Figure 5 shows more detail for catches by years.

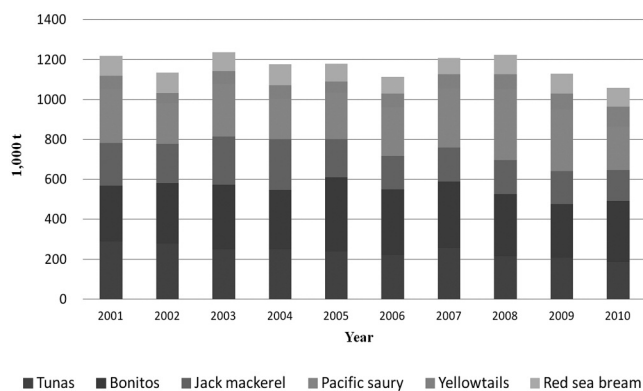


Figure 5. Catch of high potential fish types to export Japan in Turkey by years  
Source: MAFF, various years

### Export and import in Japan

Due to the fish and fishery products in the world, the export of products from Japan increases as Figure 6. The export in fisheries products of Japan in 2010 can be summarized as follows 566,000 tons and valued at approximately US \$ 2 billion. The main commodities in value are pearl, salmon, mackerel, dried sea cucumber, Alaskan Pollock, scallop and bonito. The largest increase was in export to China and Hon Kong. The other main markets for export opportunities, in terms of value of exports are Thailand, USA, South Korea and Hong Kong. Approximately 99% of the tenth ranked sea cucumbers (dried) are exported to Hong Kong (MAFF, 2010). As explained (Figure 3) Turkey fisheries industry represents a significant growth potential, here is a story about a Japanese businessman that might give new perspective to increase export.

Japan is the largest importer of marine products, with imports valued at US \$ 14.2 billion in 2010. Japan relies on imports for 40% of its supply of fish for human consumption. Imports of the fresh, the chilled and the frozen fisheries products are the major products in Japan. The main imported products are bonito, salmon, trout and shrimp. The main countries which export to Japan are China, the U.S, Chile, Thailand and Russia. Japan is the largest consumer of tuna in the world, supplied with 473,000 tons of tuna (the main export from Turkey to Japan as well) (MAFF, 2011). Figure 7 shows more detail for fisheries trade.

According to our interview, there are enormous potential trade opportunities for Turkey business in Japan when they realized Japan is the largest importer of marine products. Turkish people are so regret that why we could not to see understandably greatest trade potential for both exporters and importers until now.

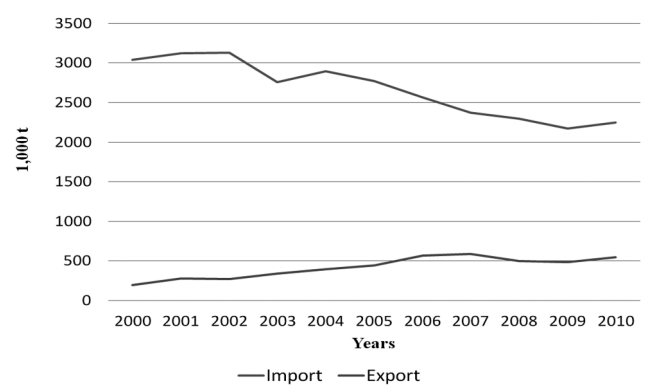


Figure 6. Export and import of fishery products in Japan by years  
Source: Trade statics of Japan, various years

### Consumption of fish in Turkey and Japan

The Red meat is preferred for consumption by Turkish people in general The main fisheries are highly seasonal, as the demand for fresh anchovies to the season debut will rend

to increase market prices (Karkacier O, 2000). Locate on the basis of these results can safely say that the amount of consumption of fishery products in Turkey lags far behind developed countries. Average consumption of fishery products in Turkey, which is 8.5 kg per year, well below the EU average is 22.0 kg / year, the global average is 16.0 kg / year. (See Figure 7 for more detail). This variation depends mainly on the availability of small pelagic fish, mainly anchovies (FAO, 2010. Turkstat, 2010). In this survey was shown up that, Turkish government should start to support fish farming financially and join with the companies to support commercial on fish protein foods as represented by products such as developed countries.

Sources of food for the ocean in the past played an important role in the Japanese diet. Even today, nearly 40% of the protein consumed by Japanese people comes from the sea food. In fact, 63% of Japanese fisheries and aquaculture for human consumption in the domestic fishing industry of Japan as a raw material (Fisheries of Japan, 2010). Japanese consumption for fish remains strong (H.Ikeda, 2010). Japanese people eat 70.9 kg of fish per capita a year; 9 times higher than Turkey as Figure 7. Turkish government should read Japanese fish consumption method exemplary to successes and see how these models were created. Besides, Japanese fisheries consumption was decreased through to western developed countries food culture and foreign food products as beef and chicken (The Japanese Consumer, 2010).

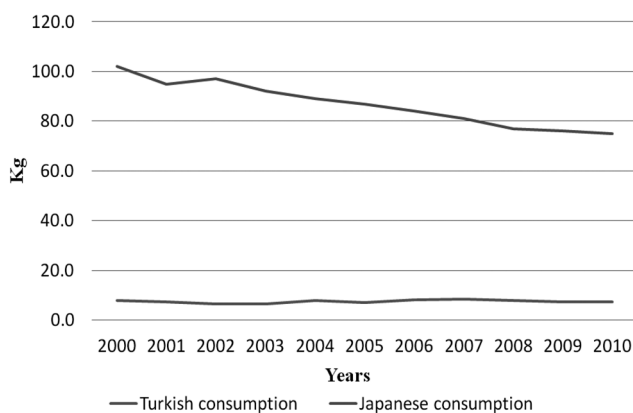


Figure 7. Consumption per capita Turkey and Japan 2000-2010  
Source: MAFF, Turkish Statistical Institute, various years

**Turkey and Japan fisheries industry and discussion**

The Turkish economy has shown remarkable performance with its steady growth over the past eight years. As the levels of GDP more than tripled to 736 billion US \$ in 2010 compared to 231 billion US \$ in 2002, GDP per capita rose to US \$ 10,079 compared with US \$ 3,500 in the period (Turkstat, 2011). In addition, Turkey continues to make efforts for adjustment of the EU standards (handling, processing, storing and transporting and food safety for good quality).

Overall the analyses which are showed in Table 1 and 2 that the economic and environmental impact of increased government economical condition and standards are positive. A positive economic surplus for both producers and economical benefits resulted from an increase in qualified standards.

In 2009, the total fish trade from Japan to Turkey was approximately 101 million US \$ but that of 2000 was just over 14 million US \$ which include; tuna (predominantly), octopus, shrimp, sea snails and shell export from Turkey to Japan. Some kind of Japanese fish spices which use sashimi and sushi export from Japan to Turkey for Japanese restaurant in Turkey. In 2010, due to the effect of the global economic crisis and Japan’s tuna over-stock problem, Turkey’s international trade dropped approximately to 34 million US \$ (Zeikan, 2011).

Table 1. Fisheries export from Turkey to Japan 2000–2010

Year	Ton	Value (10,000 \$)
2000	2404	1474
2001	1369	7969
2002	1359	9387
2003	2859	4027
2004	3882	6262
2005	3634	6167
2006	3838	6586
2007	4129	8516
2008	2623	8213
2009	3653	10122
2010	1769	3325

Source: Trade statics of Japan, various years

Table 2. Fisheries export from Japan to Turkey 2000– 2010

Year	Ton	Value (10000 \$)
2001	35	33
2003	98	49
2008	29	207

Source: Trade statics of Japan, various years

As shown up before in our interview, Japan and Turkey have good relation and positive for each other. However, others interesting points were shown up in our interview; 78% of participant survey slightly accepted that Japan and Turkey fisheries relation is slightly positive, 14% were positive and 8% were not positive.

The reasons perceived as effective by this group are on 3 answers: lack of knowledge on fishing activities and industry sectors have the potential much greater with both country (82%), Japanese companies are very sensitive for business, food safety (43%) and far for transportation (23%). Here are

some reasons people interviewed have told us how Japan and Turkey fisheries relation increase to intended position: to increase communication program and activities by government support (54%), to try to figure out fisheries industry and potential clearly by scientifically (88%), to support Japan and Turkey sea food by commercial (71%). Whole of these descriptions clearly explained about significance in this study and the importance of the proposed research.

The fisheries sector is not an important export sector for Turkey at the moment (The case of Turkey, 2011). However, the upward trend of exports of fisheries in the last two decades shows a great potential for export opportunities for fish-related business in Turkey in the future. The fishermen and especially the exporters in Turkey have adapted their product line and sales to international standards and their share in the world market keeps on growing. Turkey considerably tries to increase more and more its use of temporary trade barriers (as explained previously).

Besides, the export of fish and fishery products from Japan has increased due to the popularity of Japanese food in the world as explained before. These positive circumstances may help increase opportunities for business in near future between both countries. Likewise, it was shown up in our interview; every member of in my survey agrees with the idea that Japan and Turkey fisheries trading will increase near future (92%; Yes, 8%; maybe).

The participators indicated in our interview that there are some problems still in their business. The main problems for Turkish people (participators) in Japan are Japanese high standards, complex Japanese domestic networking system. Japanese companies already have made their business with China and Asian countries which goods may products from Turkey. The problems for Japanese people (participators) in Turkey are complex procedures in the trade tax system, economic and political stability problem, administrative barriers, high inflation and legislative arrangement problem in Turkey. Other common main problems between Japan and Turkey are to increase the price of raw materials and intermediate goods, energy cost and the exchange rate. Besides, people interviewed said that trade relation problems in both countries have decreased moderately over the past 10 years.

## Conclusion

There is regular exchange of cultural troupes between the two countries. Their bilateral relations are friendly and cordial, and they are steadily improving. This study aims to further develop the bilateral economic relations between the two countries. It consists of a series of workshops on various themes and sectors such as establishing a business in Turkey and Japan.

The innovation is vital to the knowledge-based business to gain new ground and maintain competitive edge. Therefore the fisheries sector in Turkey needs a comprehen-

sive strategy to ensure sustainable development to maximize their potential. Turkish business group looking for new business and establish business contacts and they run the weekly meetings of networks in the world during (participators are mentioned former).

Besides Japanese trade deficit of \$32 billion with the rest of the world in 2011. The first annual deficit in 31 years for the first time because of the effects of the devastating earthquake and tsunami, the Finance Ministry said (The Telegraph, 2012). Therefore Japanese businessmen move to find new partners for investing and memorandum for bilateral cooperation to create fruitful partnerships between the related business sectors in the other countries. Japanese officials have realized Turkey's role in the Middle East and Africa region. Participators said in our interview that these opportunities may make some chances on us (for Turkish and Japanese people) with commercial cooperation as well as increasing the commercial exchange and consolidating the relations between the businessmen in the two countries.

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