

REVIEW ARTICLE

Fisheries investments and economic contribution to the Islamic Republic of Mauritania by the Turkish fishing industry

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Abstract

Since 2015 Turkish fishing fleet has been catching both pelagic and demersal fish in the coastal waters of the Islamic Republic of Mauritania. Total number of boats has been 51 in the Mauritanian waters, of which 33 are purse seiners and 18 are deep sea trawlers. Among these boats nine of them have returned to Turkey for various reasons but 42 fishing boats are operating at present (June 2018) in the Mauritanian waters. These fishing activities represent about a \$200 million investment. Protection of the local people's food demand has a vital importance and sustainability of the stocks should be the main target for the sustainable fisheries and food safety. Turkish investors has contributed to the social development, welfare and job creation in Mauritania. In addition, they also contribute to the education of the local citizens about fishing industry.

Keywords: Fisheries investment, Mauritania, purseseiners, sustainable fisheries, economic contribution

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Introduction

Fisheries resources off West Africa are relatively abundant, partly resulting from the high primary production in the major eastern boundary upwelling systems in the Canary Current Large Marine Ecosystem (CCLME) and the Guinea Current Large Marine Ecosystem (GCLME) (Cushing 1971) (Figure 1). Among West African countries Mauritania has a long coastline and due to upwelling the water is very rich in living resources and attractive for fishing. Many fishing nations such as Russia, China, Norway, and Japan, since the 1980's European Union and recently Turkey have been fishing in

Mauritanian waters due to its productivity. In Mauritanian waters more than 300 species have been reported, among which 30 species have high market value (Abdel Hamid 2013).

According to the FAO (2017) the marine fisheries sector is one of the main pillars of the national economy for Mauritania. Estimates of fisheries contribution to the Gross Domestic Product (GDP) vary between 4 and 10 percent, representing about one fourth of the government budgetary resources. The sector employed approximately over 55,000 persons in 2013/2014. Catches in exclusive economic zone (EEZ) of Mauritania amounted to around 800,000 tonnes in both 2014 and 2015. Fishing sector plays an important role in the government agenda because of the continuous poverty problem they have. In that sense principles of good governance are also crucially important in the fishing industry.

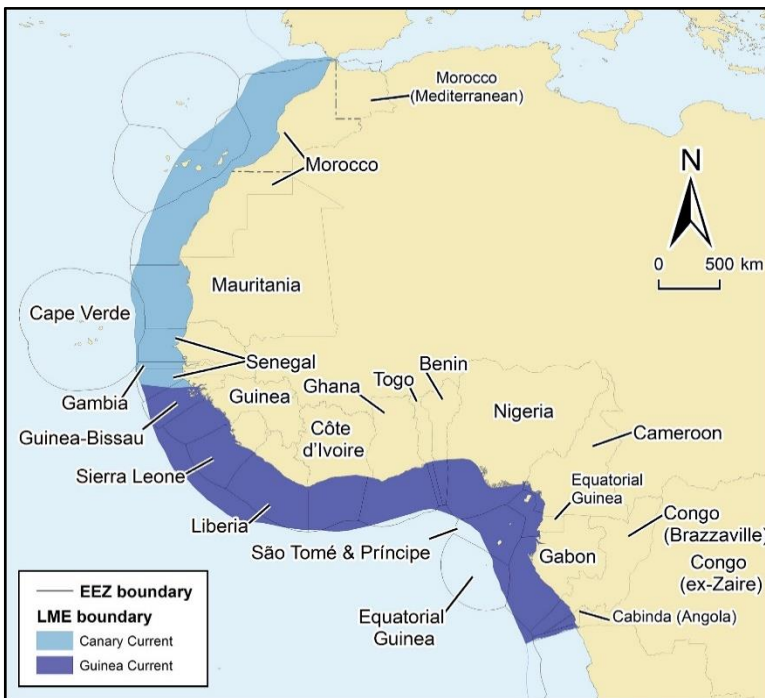


Figure 1. Map of West Africa showing Large Marine Ecosystems (LME) boundaries after Belhabib *et al.* (2016)

Turkish fishing fleets have been catching fish in the fishing zones off Mauritania since 2015. Until March 2017 there were 22 purse seiners and 2 trawlers in the Mauritanian waters (Öztürk 2017). But later, more Turkish fishermen and boats went to Mauritania and made special agreements with

private companies. One of the leading companies called Kılıç Holding is a pioneer to encourage Turkish fishermen to come and fish in the waters off Mauritania. In fact, long-distant fisheries were discussed for many years in Turkey; i.e. Mater (1976), Acara (1988), Bingel *et al.* (1988) reported that long-distant fisheries is important for Turkey and need to be in cooperation with some Islamic countries in West Africa. Going to Mauritania was a result of this approach and willingness of the close cooperation between two countries. Since 2015, Turkish fishermen gained some experience for the long-distant fisheries in West Africa in terms of fisheries management and new fishing technologies. The catch of small pelagic fish caught by the Turkish fishing boats in Mauritania is estimated as 402,000 tons in total for recent three years (Table 1).

Table 1. Turkish fishery catch in Mauritania between 2015-2017

Year	Tons
2015	2,000
2016	100,000
2017	300,000
Total	402,000

The reason of the small amount of catch in 2015 was because there was only one Turkish fishing boat in the Mauritania then. Since 2017, however, the Turkish catch amount has increased significantly.

The catches consist of small pelagic fishes such as sprat, sardine, mackerel and horse mackerel. These fish were caught by purse seiners throughout the year for the purposes of producing fish oil and meal. Among those fishes, sardines are less fatty during January, February and March, thus the factories are reluctant to buy them for processing.

Up to now, a total of 51 fishing boats has worked in Mauritania, among which 9 purse seiners have returned to Turkey due to various reasons. In total 898 Mauritians worked in the Turkish fishing boats and factories. They gained experience as fishermen during the fishing practices. The lengths of the fishing vessels were between 22 to 49 m. In total 1373 Turkish fishermen are working in the Turkish fleet.

In terms of investment, Turkey has made a significant increase in recent years. Four types of investment have been made, namely fish oil and meal production, fish processing, purse seiners and trawlers (fishing boats).

Table 2. Details of Turkish fishing vessels operating in Mauritania

No	Name of Vessels	Type of Vessels	Length	Zone	Fishing ground	Employee
1	CAVIT PIRLANT	SEINER	33	3	Working in MR	15
2	ILHAN YILMAZ-1	SEINER	47	4	Working in MR	48
3	ILHAN YILMAZ	SEINER	47	4	Working in MR	48
4	AHMET OCAK	SEINER	46	3	Working in MR	48
5	FIRTINA BALIKCILIK	SEINER	44	4	Working in MR	48
6	MAMATI ORHAN	SEINER	43	3	Working in MR	48
7	CINAR IBRAHIM	SEINER	46	3	Working in MR	48
8	CINAROGULLARI	SEINER	46	4	Working in MR	48
9	AYSE	SEINER	36	4	Working in MR	48
10	OZLEM	SEINER	44	4	Working in MR	48
11	AKTASLAR C	SEINER	49	4	Working in MR	48
12	A.MOLLAOGLU	SEINER	44	3	Working in MR	48
13	ERGUN BASARAN	SEINER	42	3	Working in MR	48
14	KAVRAMIS MAHMUT	SEINER	43	3	Working in MR	48
15	AVCI RECEBINA 3	SEINER	42	4	Working in MR	48
16	HABIBIN ENVER	SEINER	42	3	Working in MR	48
17	ORUC REIS BALIKCILIK	SEINER	46	4	Working in MR	48
18	TURKMENLER	SEINER	44	3	Working in MR	48
19	DAVUT KIYAK-A	SEINER	44	3	Working in MR	48
20	MORMARIN T	SEINER	44	4	Working in MR	48
21	MORMARIN 5	SEINER	39	3	Working in MR	48
22	KEMAL REIS 3	SEINER	37	3	Working in MR	48
23	HACI ERDOGAN SARI	SEINER	34	3	Working in MR	8
24	KIYAK KARDESLER	TRAWLER	34	5	Working in MR	18
25	KIYAK KARDESLER-1	TRAWLER	34	5	Working in MR	18
26	KARABERA	TRAWLER	26	5	Working in MR	18
27	MAHMUT KIYAK	TRAWLER	24	5	Working in MR	18
28	BAFRALI 6	TRAWLER	24	5	Working in MR	18
29	KIYAK OMER	TRAWLER	24	5	Working in MR	18
30	KIYAK KARDESLER-9	TRAWLER	24	5	Working in MR	18
31	MURSEL REIS	TRAWLER	22	5	Working in MR	18
32	OSMAN SERTER-1	TRAWLER	22	5	Working in MR	18
33	AVCILAR	TRAWLER	22	5	Working in MR	18
34	HAPULO	TRAWLER	22	5	Working in MR	18
35	HAPULOGLU MUSTAFA	TRAWLER	22	5	Working in MR	18
36	M.KURUCAOGLU	TRAWLER	24	5	Working in MR	18
37	MAHMUT KURSUN	TRAWLER	24	5	Working in MR	18
38	MUSTAFA KURUCA	TRAWLER	24	5	Working in MR	18
39	NIHAT BABA	TRAWLER	24	5	Working in MR	18
40	PESCADOR	TRAWLER	24	5	Working in MR	18
41	ZAMAN AVCI	TRAWLER	24	5	Working in MR	18
42	NURI KAPTAN 57	TRAWLER	22	5	Working in MR	18
43	DENIZER	SEINER	49	4	Returned	0
44	HABIB REIS-4	SEINER	45	3	Returned	0
45	NECATI REIS-2	SEINER	49	4	Returned	0
46	MAMULI ISMAIL	SEINER	49	4	Returned	0
47	ERDOGAN USTA	SEINER	46	4	Returned	0
48	KILIC 24	SEINER	42	3	Returned	0
49	AKGUN KARDESLER	SEINER	42	4	Returned	0
50	ERGUN KARDESLER	SEINER	42	4	Returned	0
51	ABDULKADIROGULLARI	SEINER	42	4	Returned	0
Total						1373

Table 3. Mauritanian crew working in Turkish fishing vessels

Type of fishing vessels	Number of crew	Total Salary (per year, estimated)
Seiners	528	\$2,200,000
Trawlers	190	\$800,000
TOTAL	718	\$3,000,000

As seen in Table 3, 718 Mauritanians have been working in the Turkish vessels. Among them, 190 fishermen have worked in trawlers and the rest in purse seining vessels. These crew were paid for about 3 million USD in total during three years. Mauritanian crews are not familiar with fishing but Turkish fishermen have taught and shown them how to catch fish with purse seiner boats. This is a positive progress for job creation and to reduce unemployment in the country.

Table 4. Employment of Mauritanian staff in the Turkish factories

Type of factory	Number of employees	Total amount paid
Fishmeal and oil	160	\$1,300,000
Fish processing	20	\$ 200,000
TOTAL	180	\$1,500,000

A total of 180 Mauritanians have been hired in the Turkish factories and about \$1,500,000 have been paid to them in total.

Table 5. Annual contribution of fish meal and oil factories to the Mauritanian economy

Type of payment	Annual amount	Explanation
All taxes	\$11,000,000	Export tax, tax based on profit, income tax
Production expenditures	\$15,000,000	Fuel oil, auxiliary equipment, factory and lodging expenses
TOTAL	\$26,000,000	

Table 6. Annual tax contribution of Turkish fishing vessels to the Mauritanian economy

Type of payment	Annual amount	Explanation
All taxes	\$9,500,000	End of year tax, license and quota fees, fines
Port payments	\$10,500,000	Docking to port, coast guard, carrying fish, sanitation, other
Vessel expenditures	\$15,000,000	Fuel oil, water, auxiliary equipment and others
TOTAL	\$35,000,000	

Table 7. Total investment by Turkish fishing companies

Investment name	Number	Total amount of investment
Investments of factories	4	\$42,000,000
Fishing vessels		\$90,000,000
Tax(In general)	42	\$35,000,000
Factoires		\$26,000,000
Yearly staff recruitment	890	\$4,500,000
Turkish Staff	1373	\$2,500,000
TOTAL		\$200,000,000

Average price of each purse seiner was calculated as 3 million Euros, trawlers as 1 million Euros.

Total Turkish fishing investment was calculated as around 200,000 million USD in Mauritania.

Fisheries Management

There are several crucial issues in terms of fisheries management in Mauritania for sustainable fisheries. Some of the issues were taken into account by the fisheries authorities. Recently some new regulations have started to be enforced such as landing places and landing records. Nevertheless, illegal, unreported and unregulated (IUU) fishing is still endemic and it poses a threat for the Mauritanian waters. More effective measures are needed to protect all living resources and to continue sustainable manner of fisheries. Tall (2018) reported that Chinese fishing vessels operating in West Africa misreport the size of their vessel as much as 60%. Even though there is no accurate data about IUU fishing in the Mauritanian waters, this is a vital issue for the government because fisheries are important for the income and for local people. Belhabib *et al.* (2015) reported that the EU and China perform similarly in terms of illegal fishing in the West Africa.

Overfishing is another threat for African countries due to food shortage of the people and loss of biodiversity. Blas (2014) reported that over-exploitation of the rich fishing grounds particularly for the more valuable species such as squid and shrimp is also a serious concern in Mauritania. Besides, Belhabib *et al.* (2016) reported that climate change and over-exploitation have altered the species composition of fisheries catches in West Africa. The effect of ocean warming on fisheries is indicated by the increase in dominance of warmer water species in the landings in Mauritania.

Intrafish (2017) reported that recently fish stocks are unsustainably managed in Mauritania but this is just a claim due to lack of catch data.

Catch of European Union countries also should be transparent and translocation of the fish catch should be checked more carefully. According to the renewal of the four-year sustainable fisheries protocol (from 16.11.2015 to 15.11.2019) European fleet is allowed to catch shrimp, demersal fish, tuna and small pelagic fishes up to 281,500 tons per year making a financial contribution of 59,125 million Euros per year to Mauritania in return. In addition, 4,125,000 million Euros will be used to enhance fisheries governance and the support of sustainable fisheries.

Chinese fishing companies are the most dominant group in the fishing sector in Mauritania and have very special rights such as managing their fishing harbours. Chinese fishing companies have signed a bilateral agreement with Mauritania in 1991 as an intergovernmental agreement on fisheries cooperation. This agreement has given some commercial advantage to Chinese companies compared to others. In Beijing on 30 October 2017 China–Mauritania mixed committee on fisheries revised the intergovernmental agreement on fisheries cooperation including readjustment of fishing quotas, delimitation of fishing zones, etc. China has 200 fishing boats and five Chinese enterprises have been authorized for fishing operation in Mauritania (<http://english.agri.gov.cn/service/ce/>).

Protection Measures for Resources

The Mauritanian Ministry of Fisheries and Marine Economy have started designating fisheries restricted areas in order to protect fishery resources. Four fishing zones were designated for foreign fleets (Figure 2). In the National Park area fishing is banned; second, third and fourth zones are open to fishing activities depending on the length of fishing vessels. Fishing starts after 12 miles from the shore and bigger sized fishing boats, i.e. longer than 45 meters, can start fishing after 20 miles.

The Mauritanian Fisheries Ministry has granted access to 80% of Turkish vessels to do fishing only in the 4th zone which is 12 nautical miles from the shore and required bigger fishing boats. Even though four fishing zones have been designated, no scientific justification of this decision is approved yet in terms of protection of the stocks of pelagic stocks. This enforcement should be investigated carefully and scientifically, but most importantly the decision should be taken with other stakeholders like fishery cooperatives, fisheries federations, representative of factory owners, boat owners, local fisherman etc. For the moment, the current fisheries regulations are not satisfactory from the point of sustainability. In addition, bycatch and discard levels of catches should be investigated. It was learned from fisherman that shark species were the main bycatch species for purse seiners.

The total yearly fishery quota is declared by the government as 1,500,000 tons but the calculation or estimation of this amount is not clear only surplus

production is considered. It is also known that some small pelagic species like sardine is a shared stock mainly by Mauritania, Western Sahara, Morocco and Senegal. It is proposed to assess both pelagic and demersal stocks with accurate methods. In Nabdou, the capital of the fishing business the fisheries institutes started some programs and commitments with FAO and other international competent organizations. Nevertheless, sustainability of the long term food security of the local communities is essential. The government should be careful about issues of license and quota. Licenses should be issued primarily for the local people.

For trawling boats, there is a three-month fishing ban. Generally octopus and cuttlefish are the main target species for export all over the world. There is no fishing ban for purse seiners and they can catch fish all year.

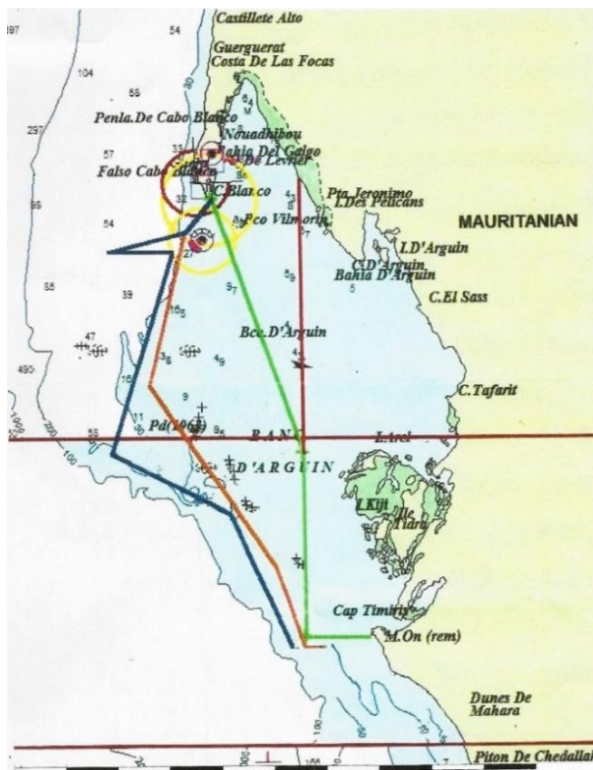


Figure 2: Map of the fishing zones in Mauritania for foreign fishermen (from Ministry of Fisheries and Marine Economy of Mauritania)

The government of Mauritania noticed the importance of the Banc d'Arguin at an early stage and has designated the National park du Banc d'Arguin by decree in June 1976 (Campredon 2000; Picon 2002). This is important for the

protection of the biodiversity, mainly flag species, such as Mediterranean monk seal, which is an endangered species all over the world and significant number of monk seals live in the colony of Cap Blanc. Besides protection of the marine biodiversity need to be protected such as the Banc d'Arguin. In these area local people depend on fisheries and those traditional fishermen are called Imragen.

Besides, 'Pirogues', traditional fishing boats in the region, are generally from Senegal, Mauritians also catch small pelagic species. Their boats are generally less than 15 m. Generally, each Pirogue boat catches 5 ton/day, usually they are 5 to 7 persons and minimum 500 Pirogue boats operate for fishing. Senegalese fisherman licenses are also limited recently to support Mauritanian fishermen to catch fish instead of Senegalese fishermen (Undercurrent news 2017).

The Government has currently placed a Plan of Action for the sector, the National Responsible Management Strategy for Sustainable Development of Fisheries and the Maritime Economy 2015-2019, focuses on six main areas of operational lines.

The Islamic Republic of Mauritania is collaborating with several regional fisheries bodies. Convention on the determination of the minimal conditions for access and exploitation of marine resources within the maritime areas under jurisdiction of the member states of the sub-regional fisheries commission (SRFC) is one of the tool for regional cooperation. The Government of the Republic of Cape Verde, the Government of the Republic of the Gambia, the Government of the Republic of Guinea, the Government of the Republic of Guinea-Bissau, the Government of the Islamic Republic of Mauritania, the Government of the Republic of Senegal, the Government of the Republic of Sierra Leone are member states and excellent instrument for exchange of information, capacity building and public awareness for sustainable fisheries. In addition, the Regional Convention on Fisheries Cooperation among African States bordering the Atlantic Ocean (ATLAFCO) is another fisheries management body in term of facilitating fisheries information and Cooperation among 22 West African member states.

Conclusion

There are four fish oil and meal factories belonging to Turkish investors in Mauritania. Fish oil and meal generally used for fish feed in aquaculture industry. It's already known that fish oil and meal prices are increasing since 2016 due to the high demand of aquaculture industry.

Turkish companies has established joint venture with local fishing rights holders and some fishing boats have been re-flagged to Mauritania to receive

more advantages such as limitless quota or permanent fishing rights. Although the government encourages foreign fishing investment, some uncertainties remain such as changing or increasing tax or frequent change of the rules. Economic contribution by Turkish companies in Mauritania, however, is expected to increase even though some problems are still unsolved.

The government of Mauritania requested foreign companies to produce added value products such as canned fish or packed fish rather than fish oil and meal. They plan to export fisheries product as added-value and branded products rather than raw material. It is known that 90% of products are exported fresh/ frozen or in form of fish meal (Abdel Hamid 2013). This decision can help to produce added-value products if infrastructure such as cold storage, electricity, better road possibilities are developed.

Small-scale fisheries need to be protected for food security of the local people. Local products and fish processing factories need to be promoted and subsidies such as fish smoking, salting, drying and others local processing methods should not be lost. This is part of ecological and cultural heritage of the native people.

Fisheries education is also important for Mauritania. Fishing is job-creating business and due to lack of fisheries education for persons such as skippers, cold storage technicians, fish processing technical staff and technicians for boats, infrastructure and machines. They need to be educated and a special technical school is needed. In Turkey, there are over 20 fisheries faculties and several fisheries high schools. Turkish experience and knowledge about fisheries education can be transferred to Mauritania to educate Mauritanian citizens for the fishing industry.

A bilateral cooperation agreement on fisheries between the governments of Turkey and Mauritania has been signed but some amendments are under discussion. The objective of the cooperation between these two governments is to contribute to sustainable management of stocks, wealth, job creation as well as food security and nutrition for the Mauritians.

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Türk balıkçılık endüstrisinin Moritanya İslam Cumhuriyeti'ndeki balıkçılık yatırımları ve ekonomik katkıları

Öz

Türk balıkçı filosu 2015 yılından beri Moritanya Cumhuriyeti'nde hem pelajik hem de demersal balık avlamaktadır. Balıkçı tekne sayısı 51 olup bunun 33 adedi Gırgır, 18 adedi ise dip trolüdür. Bu tekneler arasından dokuz adedi değişik nedenlerle geri dönüş yaparken halen 42 adet tekne balıkçılığa devam etmektedir. 2017 yılı itibarıyla ülkede yaklaşık 200.000 milyon Amerikan doları kadar yatırım yapılmıştır. Gıda güvenliği ve sürdürülebilir balıkçılık açısından yerel halkın gıda ihtiyacının sağlanması önem arz etmektedir. Türk yatırımcıları Moritanya'da sosyal ve ekonomik gelişmeye ve refahın artırılmasına katkıda bulunmaktadır. Ayrıca balıkçılık personeli yetiştirilmesine katkıda bulunmaktadır.

Anahtar kelimeler: Türk balıkçılığı, yatırım, Moritanya, gırgır tekneleri, sürdürülebilir balıkçılık, ekonomik katkı

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