

Structure of Mehdia Port of The Maritime Fishing Fleet, Production, and Demographic Characteristics, Fishermen(Morocco)

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Abstract

Sea fishing is a major source of human and animal nutrition and of the employment and employment of labor. Thus, many fishing ports have been established in coastal marine areas. However, not all of these ports have the chance to evolve in their development. Thus, a diagnosis of the state of the port is a necessity to characterize the port and to determine the constraints which oppose its evolution. In this work we applied a diagnosis on the condition in 2017 of the port of Mehdia (port of the city of Kenitre, Morocco). The results show that the Mehdia fleet is traditional and made up 93 % of boat. The population of fishermen is largely old and has little or no education, which blocks their training and their power to acquire new fishing techniques. This tradition of the fishing fleet, the low level of education and the large fraction of the elderly among fishing seafarers greatly reduce the quantity, quality and diversity of the fishery product. The results further show that the division of young people among sinners is weak, which affects the future of this profession. The risks and insufficient health coverage attributed to practitioners of this profession are the main causes.

Keywords: Maritime Fishing Fleet, Fishermen, Production, Mehdia Port, Morocco

I. INTRODUCTION

The marine environment has an important place in human society. In fact, more than 50% of the world's population lives within 60 km of the coast. The marine environment is also the greatest source of biodiversity on the planet and the various marine biomes produce 35% of global primary production[1], [2]. Many human activities such as fishing, tourism, or even aquaculture depend on marine biodiversity and the health of seas and oceans[3]. However, coastal ecosystems are globally threatened by anthropogenic impacts (He et al., 2014). Among the means of intervention in the sustainability of the exploitation of marine ecosystems and the structure of the maritime fleet employed in fishing. This can be artisanal, modern, instrumentalised, etc. The condition and future of the

fishing area depends very much on this structure. Note that artisanal fishing, based on an artisanal fleet, still represents a very important sector in the whole of the Mediterranean region but is subject to important changes linked to the increase in fishing effort and the growing development of new activities along the coast [4]. In many countries, the development of the fishing industry calls for international agencies that can make a significant contribution to the promotion of capital-intensive fisheries development programs in many third world countries [5]. However, economic growth which is often based on the [6]modernization of the structure of the fishing fleet may be a cause of the acceleration of human damage to coastal ecosystems [5]. China, the arrival in some marine areas of deep-sea fishing fleets has led to an increase in the effective fishing

effort and the subsequent commercial collapse of several fish populations intervenes in the development and sustainability of fisheries in a maritime region and are the recommendations to improve the level of training and the state of socio-economic conditions of marine fishermen [7].

Moreover, fishing performance depends on the effort provided by the fishermen, the fishing method used and the gear used [8]. The structure and characteristics of the fishing fleet and the socio-demographic characteristics of the fishing population should be assessed.

Thus, through this work, we analyze the structure of the maritime fishing fleet and certain demographic

characteristics of the population of fishermen in Mehdiya, one of the main fishing ports in northwest Morocco.

II. MATERIAL AND METHODS OF STUDY

1- Study site

It is located in the Rabat Salé Kenitra region and has a vocation for fishing and commerce. It takes place on the south bank of the mouth of Oued Sebou at position (34 ° 16 ', 04 '' N; 006 ° 39', 46 '' W).



Figure 1: Location of the Mehdiya port

It is a port which has been frequented since ancient times by the Phoenicians. It subsequently experienced great maritime activity in the 17th century when the city was under Spanish rule. At the beginning of our century (1911), the French military authorities had chosen Mehdiya as the landing base for their expedition to Fez [9], [10]. As it stands, it is an important tuna fishing center, with a few factories handling the catches of a large trap of

nets barring the coast between Tangier and the mouth of the Sebou.

These are the results of a survey carried out among people working as fishermen, and data reported by the activity report of the Kenitra Marine Fisheries Department / year 2017. The survey mode is based on filling in a questionnaire which took into account certain numbers of parameters, in particular certain characteristics relating to fishermen (age, place of birth, educational level, the function

performed in the fishing operation, etc.), the nature of the fishing by boat etc.

The sample of fishermen questioned was made up of 80 people met at random after returning from the fishing boats and who agreed to answer the questionnaire. As a methodology we have based ourselves on the study of the marketing of fish in the Mehdiya market hall as a study site and on the activity of fishermen and the fishing fleet in relation to this port.

Thus, we used the history of the qualitative and quantitative evolution of the fishing fleet and the opinions of active fishermen. The tool used is a questionnaire (appendix 1) in principle and to know the socioeconomic characteristics of the fishing population on the site, to know their opinions on certain parameters which can inform us about the link between the qualitative and quantitative evolution of fishing production.

III. RESULTS AND DISCUSSION

1- Results

Table 1: Coastal vessels operational at the port of Mehdiya:

Type of Fishing	Number of Vessels
Trawlers	16
Purse seiners	102 (37 locals and 65 visitors)
Longliners	10
Operational fishing boats at the port of Mehdiya:	219 fishing boats
Fishing boats having renewed the fishing license in the district:	631 fishing boats (150 canoes at the PDA of Moulay Bouselham, 231 Canoes at the S / DPM of Rabat and 250 at the port of Mehdiya)
Planks wedged in the Kenitra-Mehdiya district:	04

1.1- Structure of the coastal and artisanal fleet active in 2017 at the Mehdiya port.

The ports of Mehdiya recorded during the year 2017, a volume of landings of fishery products with all its coastal, artisanal and other coastal activities of the order of 9,957 tons against 4,996 tons for a value of in 2016, i.e. an increase of 99.30% by weight. These achievements are the result of an active coastal and artisanal fleet, made up of around 323 fishing units including 98 sardine vessels, 16 coastal trawlers, 3 longliners, 206 fishing boats and 4 traps.

- Global operational fleet:

The fleet of Coastal Vessels operational in the port of Mehdiya is diverse but it is largely traditional and very dominated by conots as a means of fishing. It should also be noted that the port of mehdiya also receives fishing from the region, in particular those carried out by connots of Moulay Bouselham and Rabat.

Registered fleet:

The fleet registered with the Department of Maritime Fishing (DPM) of Kenitra-Mehdia stopped on 12/31/2017, in addition to the boats, is made up of 120 units which are almost all

traditional and various fishing means of which 43% are sardine boats , 34 % are trawlers of which 25% have freezers, plangiers 9% and 8% of madraguiers.

Table 2: Breakdown of the registered fleet

Type of vessel	Number of units registered
Boats	/
Sardines	43
Trawlers	25
Longliners	18
Freezer trawlers	9
Madraguiers	8

- Active fleet:

The number of fishing units active at the port of Kenitra-Mehdia during the year 2017:

Table 3: the number of active fishing units at the Mehdia port

Type of vessel	Number of active	Percentage
Boats	206	64
Sardines	98	31
Trawlers	16	4
Longliners	3	1

In Mehdia fishing is done in an artisanal way. The components of the fleet used for this fishery are artisanal. Fishing from the boats, very small barely motorized fighters, constitutes 64% of fishing means; and fishing by sardine boats, which are small boats that offer no comfort and are equipped only for fish constitutes 31%. Fishing by trawlers and plankers, which are relatively more sophisticated means of fishing continues only 1%.

1.2- Fishery Production at the Port.**- Global production:**

According to the Fisheries Office in 2017, landings of coastal and artisanal fishing products at the port of Kenitra-Mehdia recorded an overall volume of 9,413 tonnes against 4,508 tonnes in 2016, an increase of 109% compared to 2016. Note the landing of deep-sea fishing and almost zero.

Table 5: Coastal and artisanal fishing landings at the port of Kenitra (Source: Kenitra DPM activity report / year 2017).

Type of Fishing	Weight (in Tons)
Coastal and artisanal (Mehdia)	4507
Offshore	-
Handicrafts (DPM Rabat)	260
Other activities (traps)	489

-

Production By species group:

The distribution of landings by group of species shows a clear dominance of pelagic fish (93.5%) followed by that of cephalopods (1%).

The landings of cephalopds and white fish, which are economically more profitable, together constitute only 1% of product landed. It should be noted that, compared to 2016, pelagic fish showed an increase in catches of around 129% in 2017.

Table 6: Distribution of production by group of species

Category of fish	White (T)		Variation (%)
	2016	2017	
Pelagic fish	3849	8807	129
Shellfish	81	43	-46
Cephalopods	476	464	-3
Pisces	101	99	-3
Total	4 507	9 413	109

- Production By type of vessel:

As shown in the table 7, fishing production per vessel is dominated by that of sardine boats

(93.7%), followed by trawlers (5%) and boats (1.6%).

Table 7: Production by type of vessel (Source: Kenitra DPM activity report / year 2017).

Type of fishing	White (T)		Variation en %
	2016	2017	
Boats	252	152	-40
Trawlers	510	474	-7
Longliners	11	10	-9
Sardines	3 735	8777	135
Total	4 507	9413	109

1.1. Socio-demographic characteristics of fishermen

The results of the responses to the questions attributed to the respondents are grouped in Table 1:

Table 1: questions given to the people surveyed and answers of these people to the questions

Theme Fisherman's response	Fisherman's response	Percentage (%)
Age of fisherman:	20 t30 yearss	19,57
	31 to 45 years	34,78
	Over 45	45,65
	Chlihat (à 2 km)	13,04
	Kenitra (à 2Km)	6,52

Fisherman's place of birth:	Larache (à 110 km)	8,70
	Mehdia (0 Km)	56,52
	Oueled berjal (à 10 Km)	8,70
	Sidi Tayebi (12 km)	6,52
School level of the sinner	Primary	45,65
	Secondary	50,00
	High school	4,35
Nature of office of the sinner:	Sailor	71,74
	Fishing boss	28,26
Nature of the working fishing boat:	Boats	32,61
	Sardines	34,78
	Fishing channels	32,61

Age of fishermen:

About half of Mehdi's sinners are 46 years or older, 34.78% are between 31 and 45 years old, and it is the youngest fraction of sinners (20 and 30 years old) who are the least important (19, 57%). Given the risks of this profession, it is logical that the share of young people should be greater than the results represent. It therefore seems that fishing as a profession is no longer of interest to young people.

Nature of the fishing boat:

32.61% fishing is carried out by fishermen using boats, 32.61% sardine boats and 34.78% fishing channels. The structure of Mehdi's fishing resources is therefore dominated by boats and sardine boats, fishermen equally share the available fishing resources, and fishing therefore depends a lot on artisanal fishing.

Place of birth of fishermen:

Regarding, the place of birth, it is Mehdi and Chlihat (geographical areas neighboring the fishing area) which, with 56.52% and 13.4% respectively, which represents 70% of the place of birth of seafarers working in the port of Mehdi. The other places of birth are not very far from the port and present only low frequencies despite the national importance in the fish trade of the Mehdi market hall, this site therefore remains local in terms of the workforce employed.

School level :

50% of fishermen have a "secondary" level and 45.56% a "primary" school level, ie 95.65% of the

workforce of people active in fishing. The educational level of these people is therefore not conducive to the acquisition of more sophisticated fishing means and techniques for personnel.

Nature of function:

About three quarters (71.74%) of the fishing population of Mehdi are sailors, the bosses constitute only 28.26%; however, this number of bosses remains high compared to the number of people in activity. This reflects that in Mehdi small-team fishing is frequent and requires it to be more organized into larger fishing units.

2- Discussion

Millions of people find a source of income and livelihood in the fishing industry (Shrestha et al., 2021), Around 40.4 million people are employed in the fishing industry worldwide, which represents a significant portion of the world's population[11]. Financial and socioeconomic performance is important for both the state and the workforce. However, for any country or geographic fishing area, the performance depends on factors and many constraints including the structure and equipment of the fishing fleet and certain demographic characteristics of the working fishermen. Thus, from the evaluation of these two variables at the level of the port of Mehdi, the results showed that the fishing fleet of this port is dominated by small boats, which are only small boats, little equipped and with limited fishing capacity. The workforce is

poorly or uneducated and of local origin can also be a hindrance.

As he reported Njoku for a fishing port in Laos, the low level of education of the employed fishermen and the lack of knowledge of where to get information on modern fishing technology is the main problem[12]. more common among fishermen in their attempt to search for information. Likewise, the results show that the "young" age groups are few in number compared to those of middle age or the elderly. It therefore seems that the profession of seafarer and fisherman no longer motivates young people as before. This could be due to the risks and health problems presented by this sector, the work of which requires constant movements, isolated locations, long working hours and days with little rest [11]. In addition, health coverage is generally insufficient [13]. Fishermen are therefore prone to injuries (fatal and non-fatal) and health problems caused by working conditions and the risks associated with this type of work [11].

Thus, however, medical coverage is still insufficient, and maritime medicine remains an unattractive specialty because doctors have difficult working conditions[13]. Another characteristic of the port of Mehdiya is to have a fishing fleet almost entirely artisanal, dominated by boats and almost without means of deep-sea fishing. These constraints explain the low diversity and production of its fishing area. Thus, to improve this production and the diversity of the product, there is a need to establish strategies that promote the sustainability and development of the activity of this port and its fishing area [13], [14].

IV. CONCLUSION

The fleet of Coastal Vessels operational in the port of Mehdiya is diverse but largely traditional and very dominated by fishing boats. The sardiers' share comes after the boats. Mehdiya's fishing fleet is poorly adapted to new fishing techniques. Influenced

by this state of the fishing fleet, the diversity, quantity and quality of the fauna caught is reduced. Likewise, the population of fishing sailors is insufficiently educated to train or adapt to new fishing techniques. The fraction of the elderly is large and, on the contrary, that of young people is small; this shows that the job of "fisherman" is no longer attractive to young people. The risks presented by this profession, including insufficient social and health security conditions, could be the main factors. Thus, any strategy aimed at developing this port must take into account all of these identified constraints.

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