



Maghreb Technical
Notes Series

Diagnosis of vulnerability and impact of Covid-19 on the fisheries sector in Morocco

Marcelo H. Acerbi, Saad Belghazi and Khalid Anouar



Merja Zerga, Morocco
Photo by Nadia Kassali

Diagnosis of the Vulnerability and Impact of Covid-19 on the Moroccan Fisheries Sector

Marcelo H. Acerbi¹, Saad Belghazi² and Khalid Anouar³

1. COVID-19 crisis has unevenly affected all aspects of the fishery sector: the fished species, the destination of the product and the value chain. However, the authorities encouraged the sustainability of the fishing activity by giving priority to the supply of the domestic market. The drop in activity has affected the income of fishers less seriously than expected. In contrast, the shock of COVID-19 has severely affected workers in fish processing industries, especially the canned fish production.
2. This executive summary presents the main findings from a rapid diagnosis of the impact of COVID-19 on the fisheries sector and its vulnerability.
3. The main findings of this rapid diagnosis are as follows:
 - Faced with the COVID-19 crisis, the fisheries sector in Morocco has demonstrated its resilience. The fishing effort has been maintained. The domestic market continued to be supplied. Exports suffered a slight decline. Overall, the sector's employment and income have resisted the shock of the lockdown better than other sectors of the economy;
 - The onshore fishing sector, mainly that of canned fish, was found to be the bearer of several clusters of COVID-19 outbreaks, leading, the authorities to temporarily close several factories, particularly in Safi;
 - A major reform effort has been carried out in the fisheries sector, initiated a decade ago under the Halieutis plan. However, despite substantial progress, in port facilities, surveillance of fishing trips, control of catches, organization of cooperatives and social protection of fishers, the COVID-19 crisis revealed some weaknesses of the sector;
 - The regulatory instruments (legal texts, directives, etc.) and the human and technical measures to control the exploitation of resources do not completely guarantee the sustainability of marine resources;
 - The operators in the sector do not all have the same negotiating and lobbying power;
 - The artisanal fishers' cooperatives and associations are still, in general, poorly organized, have little influence on the decision-making processes by the public authorities in charge of their sector, and have also relatively little influence over their own members;
 - The most important aspect highlighted by COVID-19 crisis: is the persisting pockets of precariousness. Thousands of seafarers do not benefit from any social security coverage, particularly in artisanal fishing. Insurance contracts against professional risks related to maritime fishing activities cover the minimum risk; and the evidence providing procedures are complicated and difficult to implement due to the illiteracy of a large number of artisanal fishing shipowners.
4. The diagnosis is presented in three chapters: the first chapter shows how the COVID-19 impacted the activities of the fisheries sector at sea and on land and its effects on production, the population's nutrition and exports. The second chapter examines the effects of the crisis on employment and workers' incomes and the third chapter examines the long-term prospects for safeguarding the fishery resource as the foundation of the sustainability of the sector

¹ Senior Environmental Specialist, Environment, Natural Resources & Blue Economy, The World Bank

² Senior Economist, Consultant

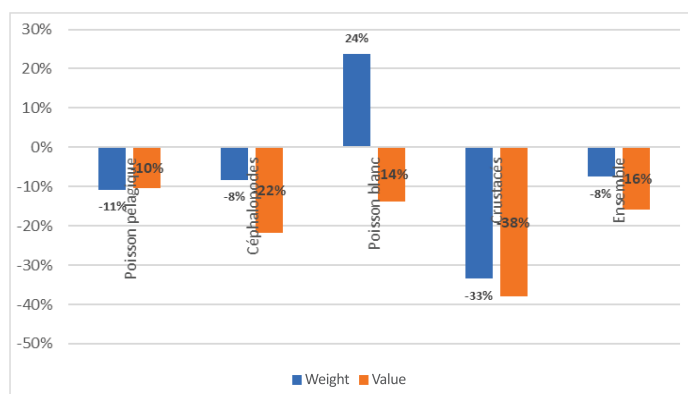
³ Environmental Specialist, Environment, Natural Resources & Blue Economy, The World Bank

Impact of COVID-19 on Activity and Income in the Fisheries Sector

Marine capture fisheries were relatively unaffected by the COVID-19 pandemic. At the ports, public and private operators intervened in a coordinated manner to put in place measures to prevent infection by COVID-19. The pandemic strongly affected workers in land-based fishing industries, in particular in pelagic canning units, and in freezing units. In the factories, the management of preventive measures was entrusted to the administration.

The reconfiguration of production units and the supply of PPE and disinfectants were belatedly carried out in many cases.

Figure 1 : Differences in catches in weight and value for the 1st semesters in 2020 compared to the 2016-2018 average



The authorities had to act at the local level by ordering temporary closures of production units and by organizing quarantine and treatment of groups of infected workers. Statistics are not yet available for the comparison of the differentiated impacts between branches (capture or processing). However, we can observe two observations on COVID-19 effects on the fishing industry.

- Distancing measures, and in particular the inconvenience caused to the movements of fishers, led to a drop in catches and reduced the supply of processing units, mainly for canned sardines;
- The closure of the canning units due to COVID-19 resulted in difficulties in the disposal of pelagic catches. However, the increase in the production of fishmeal and fish oil need to be noted. This increase can be partially explained by the fact that part of the pelagic catches destined for canning was redirected towards fishmeal and fish oil units. The high level of export demand for fishmeal and fish oil mitigated the impact of the decline in pelagic catches.

⁴ Department of Maritime Fisheries, "The Sea in Figures 2018".

⁵ With the biological cessation of octopus fishing starting on April 15th, 2020, the unit value of the catch mechanically decreases, the average price of octopus being higher than that of other common species.

Impact on Production

Administrative decisions related to the prevention of infection cramped the level of catches from March 15 to April 15, 2020:

- The measures aimed at preventing infection, in particular those restricting movements, were strictly applied until April 15th, 2020;
- Subsequently, despite the concern to encourage recovery, many fishers were unable to get to their jobs because of the ban on inter-city travel;
- The intervention of the fishers' federations and the support of the authorities allowed a restart of the fishing activity, which was constrained by the decline in the available numbers of fishers.

The drop in catches caused by COVID-19 is estimated to be at 31% in tonnage and 26% in value⁴. It is calculated as the difference between the volumes and values of catches made during the first and second quarters of 2020 and the average volumes and values of catches made in 2016, 2017 and 2018, for the same quarters. These data are averages to be considered with caution. The values and volumes used reflect the effect of the seasonality of the species⁵.

Production losses linked to COVID-19 in the fisheries sector, compared to the average production from March to April for the years 2016 to 2018, should be 1 billion dirhams. This loss would be equal to 9.5% of the added value of the fisheries sector in 2019 (12.2 billion DH).

Table 1: Variation in the Value of Catches from Coastal and Artisanal Fishing During the Lockdown Period

Period	Average Annual Catches 2016-2018			Catch in 2020			Variation		
	Tons	KDH	Unit value	Tons	KDH	Unit value	Tons	KDH	Unit value
March	88 171	582 474	6,6	64 700	429 415	6,6	-27%	-26%	0%
April	114 298	470 779	4,1	65 884	343 625	5,2	-42%	-27%	27%
May	125 029	542 895	4,3	95 390	400 243	4,2	-24%	-26%	-3%
March to May	327 498	1 596 149	4,9	225 973	1 173 283	5,2	-31%	-26%	7%

Sources: Data from the National Fisheries Office (March to May 2020) and Department of Marine Fisheries "DPM" (The Sea in Figures 2018). Note: To measure the impact of COVID-19 on the catches, we compared the catches from March to May 2020 with the average of those made during the same months of 2016-2018.

The comparison of the catch data in the first half of 2020 with those in the first half of 2019, showed a smaller decrease in value: 15.9% loss in weight and 7.5% loss in value.

Table 2: Production of Coastal and Artisanal Fisheries in the First Semesters of 2019 and 2020

Fishery product by species	Value in KDH	Weight in tons	Value in KDH	Weight in tons	Variation	
	2020	2020	2019	2019	Value	
Pelagic	1 240 955	457 603	1 383 649	513 397	-10,3%	-10,9%
Cephalopods	1 303 794	28 702	1 665 824	31 289	-21,7%	-8,3%
White fish	616 323	40 125	714 590	32 424	-13,8%	23,8%
Seashells	6 738	647	5 415	241	24,4%	
Shellfish	88 598	1 580	142 897	2 375	-38,0%	-33,5%
Seaweed	71 491	17 769	42 853	11 225	66,8%	58,3%
Grand total	3 327 898	546 427	3 955 228	590 949	-15,9%	-7,5%

Sources: Data from the National Fisheries Office (March to May 2020) and DPM (The Sea in Figures 2018).

The slowdown in exports has led to a problem in the disposal of catches. For white fish and cephalopods, the power balance in the market decided the price decrease since fishers' negotiating capacity is weak in the domestic market due to their lack of access to storage facilities. But this finding does not apply to the pelagic fish.

The catch volume fell by 10% in the first half of 2020 compared to 2019. The price of sardines, a small pelagic fish, was stabilized, while that of the large pelagic fish (tuna and swordfish) increased. Despite the drop in the price of anchovies, the average price of pelagic fish was stabilized.

Impact on the Nutrition of the Population: Maintaining Supply

COVID-19 did not result in a shortage of fish in the retail markets. Demand was maintained at its usual level during the month of Ramadan (April 24th to May 24th, 2020). The prices of the most popular species (sardines, whiting, sole, etc.) were stable.

It was observed that, from a nutritional point of view, the marketing conditions of the fish had an effect not on the quantity supplied, but on the quality, especially in rural areas, because of the difficulties in transportation and distribution.

Effect on Exports

Deep-sea fishing did not suffer from a decrease in catches, but a drop in export prices due to the slowdown of demand in Spain - the main outlet for Moroccan deep-sea fishing.

The amount exported was 20 billion dirhams in 2019. The volume grew until 2018 and declined in 2019. From 2013 to 2019, exports increased by 5.6% in value and by 5.2% in volume (Table 3).



Table 3: Exports of the Marine Industries Sector

Year	Value (million dirhams)					
	Crustaceans, molluscs, shellfish	Fresh, salted and dried fish	Live fish	Fish oil	Canned fish and shellfish	Total
2013	6011	2314	34	299	5894	14552
2014	6197	2298	37	652	6135	15319
2015	7548	2744	82	989	6349	17711
2016	8890	3037	66	813	6430	19236
2017	9209	3489	29	713	6769	20209
2018	8691	4061	27	629	7451	20859
2019	7938	3714	31	618	7861	20163

Source: Exchange Office.

Au premier semestre 2020, les exportations de céphalopodes ont augmenté de 11%, leur valeur unitaire a baissé de 13,2%. La baisse des prix des céphalopodes a été indiquée par les pêcheurs artisanaux. La pêche hauturière de céphalopodes n'a pas été affectée par le confinement, en raison du retour au port de la flotte dans la zone Sud à partir du 15 avril.

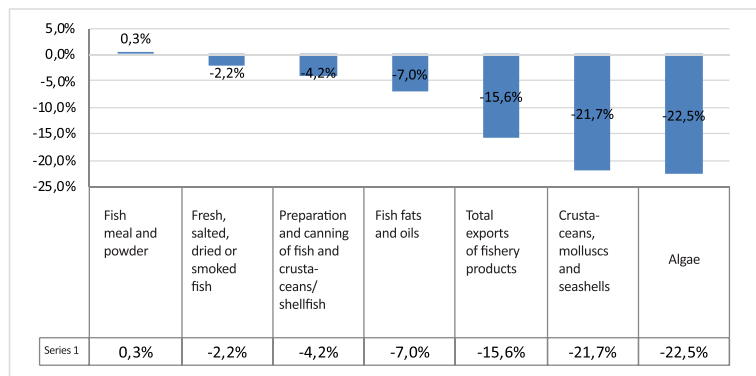
Table 4: Exports of Raw and Processed Seafood Products in the First Halves of 2019 and 2020

Exported seafood	January-June 2020		January-June 2019		Variation	
	Weight Ton	Value	Weight	Value	Weight	Value
	TON	1000DH	TON	1000DH	%	%
Fresh, salted, dried or smoked fish	92642	1222027	112427	1516004	-17,6%	-19,4%
Crustaceans, molluscs and shellfish	66118	4006393	59625	4615905	10,9%	-13,2%
Preparation and canning of fish and shellfish	95270	3464353	96953	3679893	-1,7%	-5,9%
Fish meal and powder	80486	860882	70633	752921	13,9%	14,3%
Fish fats and oils	24979	430360	10536	195262	137,1%	120,4%
Algae	696	23760	1531	67466	-54,5%	-64,8%
Total exports of fishery products	267549	8785748	239278	9311447	11,8%	-5,6%

Source: Exchange Office, www.oc.goc.ma.

White fish exports decreased in volume and value with a slight drop in the unit price. The decline caused mainly by the decrease in catches affected artisanal and coastal fisheries, mainly longliners and trawlers.

Figure 2: Change in Unit Values of Exported Seafood - Data of the First semesters of 2020 and 2019



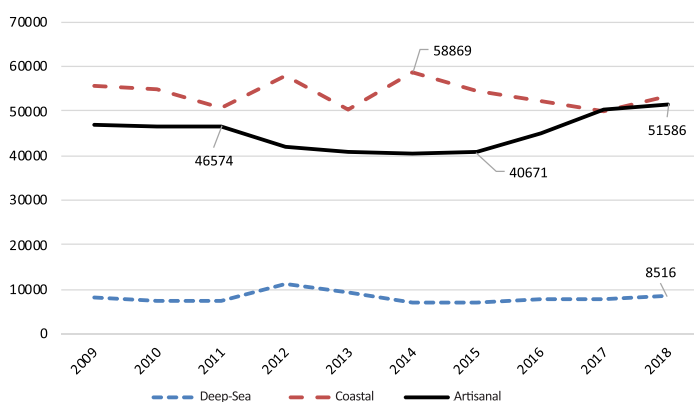
Source: Exchange Office. www.oc.goc.ma.

Impact of Covid-19 on employment and income of fishermen

Employment: Composition and Recent Evolution in the Number of Fishers

According to the Department of Maritime Fisheries (The Sea in Figures 2018), the number of fishers reached 113,377 in 2018. It has been fluctuating significantly from one year to another. After being 100,453 in 2013, it rose to 105,000 in 2016 and appears to be growing. Coastal fishing in 2018 employed 53,254, artisanal fishing 51,586 fishers and deep-sea fishing 8,516.

Figure 3: Evolution of the Number of Fishers by Type of Fishing



Source: DPM The Sea in figures 2018.

There has been a stagnation in the number of fishers in deep-sea fishing of around 8,500. The number of fishers in coastal fishing decreased from nearly 59,000 in 2014 to 51,500 in 2018. The growth in the number of fishers mainly concerns the artisanal fishing. It rose from 40,600 to 51,600, which is an increase of 25% in three years.

According to the available data (The Sea in Figures 2018), fishing (capture and harvesting seafood) would provide in 2020 direct income to 114,000 fishers, i.e. nearly 520,000 people or 1.47% of the population of Morocco in 2018.

Most of the workers in the fishing sector live in coastal provinces (93%) (Table 5). However, 45% of fishers live in rural areas. The percentage of fishers with a workplace close to their home is small. Thus, 48% of fishers do not work in their municipality or province of residence. The number of fishers using public transport to get to their place of work is high (44%).

Table 5: Number of Fishers by Professional Status, Category and Place of Residence

Provinces of residence	Number	%	% Rural
Non-coastal provinces	7920	7,4%	64,5%
Coastal provinces	98630	92,6%	43,5%
Total	106550	100,0%	45,0%

Source: RGPH 2014.

According to the data of the 2014 General Census of Population and Housing (RGPH) out of a working population of 106,550 who indicated that they belong to the socio-professional categories of fishers or operators or workers and laborers, 5030 identified themselves as jobseekers. 73.6% of workers in the sector were employees (78,470).

Among the 20,490 self-employed workers, a very small number of fishing workers and laborers (2,200) belong to this socio-professional category. There are 26,410 employers and self-employed people. The status of family worker and apprentice is very rare (1.2% of the total number of fishers).

Table 6: Number of Fishers by Professional Status, Category and Place of Residence

Place of residence	Urban			Rural			Total
	Fisher-men and related operators	Fishing workers and laborers	Total	Fisher-men and related operators	Fishing workers and laborers	Total	
Category Socio-professional/ Professional Status							
Employer / cooperative Member	3110		3110	2810		2810	5920
Independent	9620	1200	10820	8670	1000	9670	20490
Home help / Apprentice		430	430		850	850	1280
Employee		43820	43820		34760	34760	78470
Other	30	240	270	30	90	120	390
Total	12760	45580	58340	11510	36700	48210	106550

Source: 2014 RGPH database, at 1 / 10th, posted on www.hcp.ma.

The impact of COVID-19 crisis on employment has been differentiated by fishing segments. The drop in the number of jobs and income level was associated with the forced suspension of activity in the ports (at the very beginning of the second week of March), by the measures alternating trips imposed in some ports of landings managed by the local authorities and by the difficulties fishers faced in returning to work once they left their home port. In some cases, deep-sea and coastal fishing vessel owners have had recourse to fishers operating in artisanal fishing.

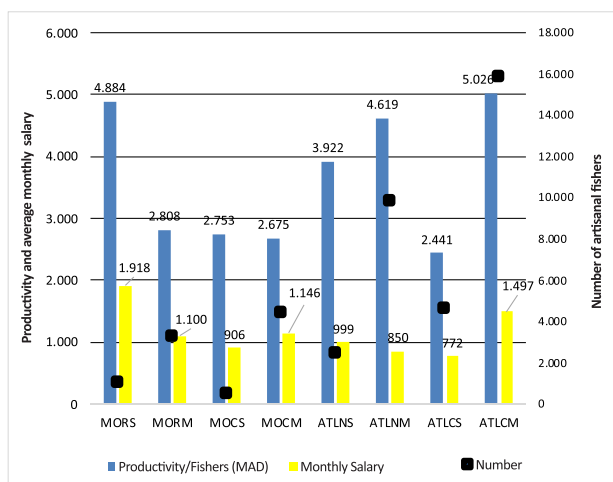
Overall, it can be argued that, in the absence of detailed employment statistics, the shock to employment in the catching segment was proportional to the shock to production? Workers in the processing sector were affected by declining supplies and especially by plant closures, following authorities' decisions to curb COVID-19 infection.

The Salary System

Deep-sea fishing moved to a fixed wage system, with bonuses. In artisanal and coastal fishing, the system of remuneration of seafarers still remains. In the share remuneration scheme, the shipowner retains 50% of the value of the catches (net of charges). The shipowner pays taxes and fees. The crew shares the remaining half according to a principle of variable hierarchy depending on the size of the crew. The status of the unskilled fisherman is precarious compared to command staff (much better paid because of the skills shortage in the labor market).

The wages of artisanal fishers, based on the National Fisheries Research Institute (INRH) survey on artisanal fishing carried out in 2016, are close to one third of the added value. Thus, the monthly wages vary from 772 DH to 1918 Dirhams. Figure 4 illustrates two categories of artisanal fishing, that based on seine fishing, specialized in pelagic and that specialized in other species-in particular octopus- and using different tools.

Figure 4: Productivity, Wages and Workforce of Artisanal Fishers by Zone and Type of Fishing



Source: INRH / DRH 2016 - Place of artisanal fishing in the exploitation of small pelagic in Morocco. Extract from Table 19. Note: MORS: Eastern Mediterranean - purse seiners; MORM: Eastern Mediterranean Multi-business; MOCS: Western Mediterranean purse seiners; MOCM: Western Mediterranean Multi-business; ATLNS: North Atlantic seiner; ATLNM: North Atlantic Multi-business; ATLCS: Center Atlantic -seiners; ATLCM: Atlantic Center Multi- business.

The average wages declared to the NSSF (CNSS) concern 22% of workers in the fishing sector who are below the annual minimum wage. Considering the declared incomes, 44% of workers in the sector (commerce not included) would be below the poverty line, should their household exceed 3 people (2 of whom are inactive).

Table 3: Average Number of Days Declared and Structure of Employees by Sex According to the Ratio of Wages to the Minimum Wage in the Fishing Sector (fisher and fishing industry) in 2014.

Ratio of the average salary declared to the Minimum Wage (SMIG)	Annual number of days			Structures-in% column		
	Female	Male	Total	Female	Male	Total
Less than 90% of SMIG	107	56	86	76%	19%	34%
90% - 95% of SMIG	209	107	153	4%	2%	3%
95% - 100% of SMIG	219	117	161	4%	2%	2%
100% - 105% of SMIG	234	126	166	4%	2%	2%
105% - 110% of SMIG	241	127	165	3%	2%	2%
110% - 150% of SMIG	253	141	156	7%	16%	14%
150% - 200% of SMIG	242	158	160	1%	18%	13%
200% - 400% of SMIG	243	183	184	1%	31%	23%
400% of the SMIG	263	196	197	1%	8%	6%
Total	138	143	142	100%	100%	100%

Source: NSSF.

⁶Team estimate according to NSSF 2014 data.

⁷The IPE was automatically excluded from the social scheme for fishers. The monthly amount of the fishers allowance is equal to 70% of the reference salary (declared average monthly salary for the last 36 months) without exceeding the amount of the legal minimum wage. However, even if the IPE were applicable to the fishing sector, eligibility for the IPE requires the accumulation of 780 days of salary declarations during the last thirty-six months preceding the date of loss of employment, of which 260 days should be during the last 12 months preceding that date and the job loss should be caused by circumstances beyond the fishers control. This would result in a very low proportion of eligible fishers, in particular in the artisanal fishing segment.

⁸If fishers were not excluded from the Job Loss Benefits (IPE), the application of the eligibility rules would mean that only 14.3% would be eligible.

Unequal Social Coverage

A large part of fishers is excluded from benefits from the general scheme and the Compulsory Health Insurance (AMO) because of the rules of eligibility to receive social benefits that are based on the declared duration. Thus, only 26.7% of fishers, wage earners, would be eligible for family allowances, 54.7% for daily sickness benefits, old age pension and compulsory health insurance⁶.

Table 8: Percentage of Employees Eligible for Social Security Benefits

	AF	IJM	Pension	AMO	IPE*	Declared workforce
Fishing & Aquaculture	27,0%	55,0%	55,0%	55,0%	14,0%	81 928
Offshore and Coastal	33,9%	62,0%	62,0%	62,0%	18,6%	59 951
Artisanal	7,3%	34,5%	34,5%	34,5%	2,6%	21 977
Shore Fishing Industry	33,0%	61,0%	61,0%	61,0%	17,0%	38 465
Other sectors of the Economy	51,0%	69,0%	69,0%	69,0%	41,0%	2 699 211
Total	50,0%	68,0%	68,0%	68,0%	40,0%	2 819 604

Source: NSSF/CNSS data - 2014.

Notes: AF: family allowances; Daily sickness benefits; AMO: compulsory health insurance; * IPE: compensation for loss of employment; Pension: old age and survivors' pension.

* The IPE column has been calculated for the record⁷.

Fishers are excluded by law from benefiting from compensation for loss of employment (IPE)⁸. Fishers do not pay the IPE contribution. The percentage of paid contributions varies from 22% to 23% of the declared income. Several interviewed fishers declared that they could not find the counterpart of their contributions in their social benefits. However, they unanimously agree about the need to benefit from the services offered by the National Social Security Fund (CNSS).

Social Transfers and Mitigation of the COVID-19 Shock in the Fisheries Sector

Fishers received the COVID-19 allowance of the second week of March, then were excluded by a governmental decree

The fishers who were declared to the National Social Security Fund in February 2020 received a 1000 DH compensation for activity suspension during the second half of March. We do not have the number of compensated fishers. But, it is very likely that they are mostly the fishers declared to the NSSF. The Economic Watch Committee has decided to exclude from compensation the branches of activity that have maintained production above 50% of their current production. Since April 2020, the food sector, and in particular agriculture and fishery, no longer benefited from COVID-19 allowances.

COVID-19 Has Led to a Significant Drop in Income

The lowest incomes are impacted in the same way as the highest due to the method of remuneration per share.

The social security system has proven to be effective in the transfer of income to workers in the fishing industry. The overwhelming majority of them knows the social security system and can access it through the National Fisheries Office (ONP) service. An undetermined fraction of fishers (15% to 20%) is not declared to the NSSF (CNSS). Another more important fraction is not sufficiently declared to be entitled to benefits from the general scheme and/or be eligible to the compulsory health insurance.

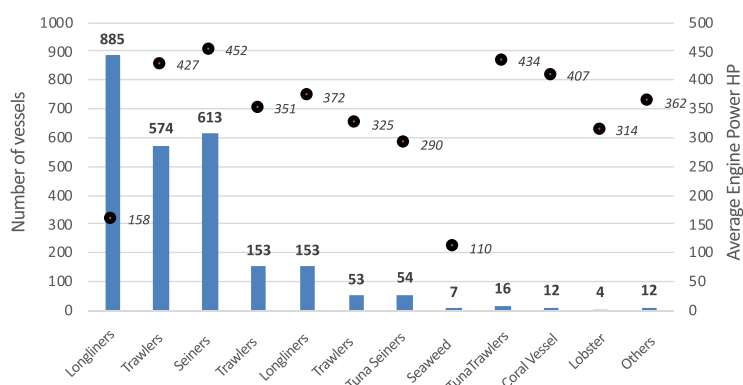
COVID-19 Crisis Pressure on Fishery Resources and Risk of Illegal, Unreported and Unregulated fishing (IUU)

The context in which the COVID-19 crisis broke out was marked by many developments: the regulation of the fishing effort based on a scientific assessment of the resource, a better control of catches and compliance with quotas, a better equipment of ports, disembarkation points and fishing villages and, above all, the marketing of fishing products became characterized by better traceability. Despite these developments, the fishing sector is still characterized by a dual weakness, the poverty and vulnerability of a large fraction of its workers, on the one hand; and the exposure of fishery stocks to the risk of overexploitation, on the other. This dual weakness could be exacerbated by the COVID-19 crisis. To put the medium- and long-term impact of the COVID-19 crisis into perspective, the third chapter of the report presents the fishing capacity and an estimate of the state of the stocks. It examines the organizational effort carried out within the framework of the Halieutis Plan - which has been implemented since 2009 - against the background of the COVID-19 crisis, should it last longer.

The Importance of the Fishing Capacity

Fishing is carried out by three categories of vessels, differentiated according to their size and classified into specific fishing segments: deep-sea, coastal and artisanal. The navigation areas between the different segments are distributed according to the distance from the coast. The distribution of these areas is defined by the development plans. To simplify, and as an indication, we can remember that the zone distant from the coast by up to 3 miles is reserved for artisanal boats, that at 3 to 12 miles is reserved to inshore fishing vessels and that beyond 12 miles, to deep sea fishing vessels.

Figure 5: Composition of the Coastal Fishing Fleet in 2018



Source: Department of Maritime Fisheries "The Sea in Figures 2018".

The deep-sea fishing fleet is made up of 457 vessels, of which 362 were active in 2018. Their average size is 340 gross tons and their average engine power 1100 HP. Their home ports are located entirely in the Atlantic. The registered vessels are 248 in Agadir, 69 in Casablanca, 44 in Tan-Tan, 37 in Tangier, and 29 in Dakhla. The majority of boats are made up of cephalopods, (73% of registered boats

including 232 in operation in 2018). Shrimp boats account for 19% of the offshore fleet and 8% of the pelagic vessels. Cephalopods and shrimps, and a small number of pelagic fishing vessels are factory ships whose trips at sea last for 8 or 10 weeks. Most of the deep-sea fishing boats specializing in pelagic make trips of 2 or 3 days. The coastal fleet comprises 2536 vessels, of which 39% are seiners, 36% trawlers and 25% longliners. Their average size is 55 tons and the average engine power is 325 HP. Coastal fishing vessels are attached to 6 ports in the Mediterranean and 17 ports on the Atlantic.

The artisanal fleet comprises 17,278 boats. They are generally equipped with a 15-horsepower engine. In some cases, they are fitted with more powerful engines (1 or 2 engines), bringing their motive power up to 50 horsepower or more. Nearly 13,900 artisanal boats are active in cephalopod fishing. They use passive devices such as the pot, jig and traps. Only 3,084 operate at the development unit level. The pelagic activity of the artisanal fleet is practiced between Saidia and Boujdour. About 2000 boats employing more than 10,340 fishers. They fish for small pelagic on a seasonal or permanent basis. The majority has been detected in the central area between Safi and Boujdour.

A Very Tight State of Stocks and a Growing Fishing Capacity

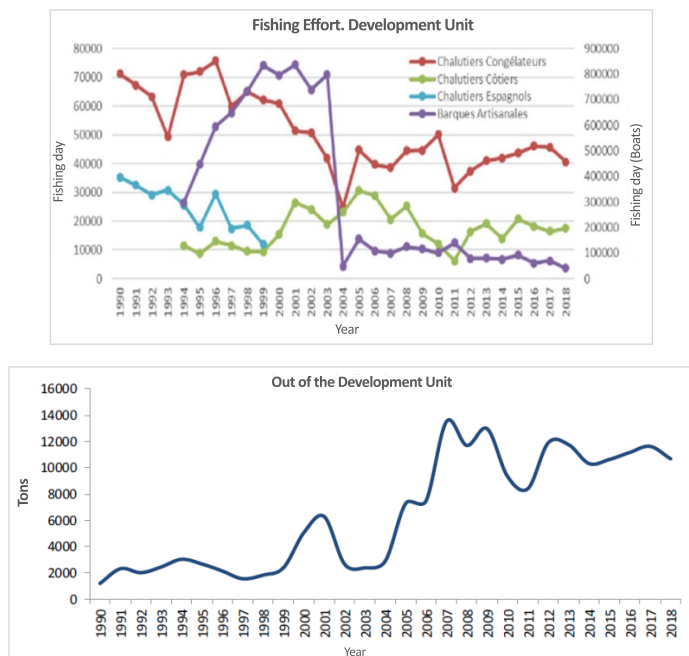
Table 9: Stock Status of the Main Species According to the National Fisheries Research Institute (INRH) (2018)

Types	Catch (Tons)	Value (1000 DH)	Species	Zone	Stock Status
Pelagic	1 189 371	2 454 914	Sardine	Mediterranean	Overexploited
				North Atlantic	Fully exploited
				Center Atlantic	Not fully to fully exploited
				South Atlantic	Not fully to fully exploited
			Anchovy	North Atlantic	Fully exploited
				Central Atlantic	Fully exploited
			Mackerel	Central Atlantic	Fully exploited
				South Atlantic	Fully exploited
			Horse Mackerel	All areas	Overexploited
			Red Tuna	East and West Atlantic	Not overexploited
Swordfish	Mediterranean	Overexploited			
	North Atlantic	Not overexploited			
White Fish	89 564	1 823 383	Hake	All areas	Overexploited
Cephalopods	66 477	5 509 679	Octopus	All areas	Fragile balance
			Cuttlefish	All areas	Overexploited
			Squid	All areas	Undetermined, but catch drops
Shellfish	7 768	850 849	Pink Shrimp	Atlantic and Mediterranean	Overexploited
Seashells	869	6 909	Common Hull	South Atlantic	Overexploited
			Straight Knife	South Atlantic	Overexploited
Algae	14 828	56 628	Algae	North Atlantic	Fragility

The overexploitation of the cephalopods and the pelagic stocks could induce serious economic shocks.

The pressure on the octopus stock has shifted north. Between 2004 and 2018, the level of catches in the segment north of Boujdour increased by 5 folds or more (figure 6).

Figure 6: The Fishing Effort in the Boujdor-Lagouira Area and the Level of Catches North of Boujdour.



Source: National Fisheries Research Institute (INRH), Summary of the 2018 inventory status.

The assessments carried out by the National Fisheries Research Institute (INRH) and written down in the summary report of the state of stocks in 2018, shows that the level of catches is too close to the maximum catch potential. Therefore, it becomes necessary to multiply the biological recovery periods in order to reduce the excessive capture of the pelagic and the demersal (octopus and white fish). This precaution is only effective if it induces a drop in the pressure on the juveniles. However, although fishing is prohibited in spawning areas, professionals frequently denounced in interviews the breach of this measure by artisanal fishers in some areas.

At the same time, there is a gradual increase in the size and power of coastal and artisanal fishing vessels. The assessment also reveals an increase of the fishing effort driven mainly by the artisanal fishery. This segment is more difficult to control, may be because of the income drop caused by the pandemic; which induced the breach of some rules initially meant to preserve the stocks.

The Professional Organization of the Fishery Sector has been Marked by Weaknesses at the Time of the Outbreak of the Pandemic

The “Halieutis plan” sought to enhance the effectiveness of the professional organization of the fishery sector. Professional organizations are recognized as essential relays for a concerted management of the sector and as overseers ensuring the respect of workers, the sustainability of the fishery resource and the quality of the product. The offshore fishing segment is made up of companies, often born of international joint ventures. Coastal fishing is owned by several hundred small, often poorly organized, owners. Small-scale fishing is, like deep-sea fishing, an activity managed by small bosses - originally and for the most part independent workers, boats owners - joining each outing with a small crew of 2 to 3 fishers (longline or jig fishing) up to 9 (seine fishing).

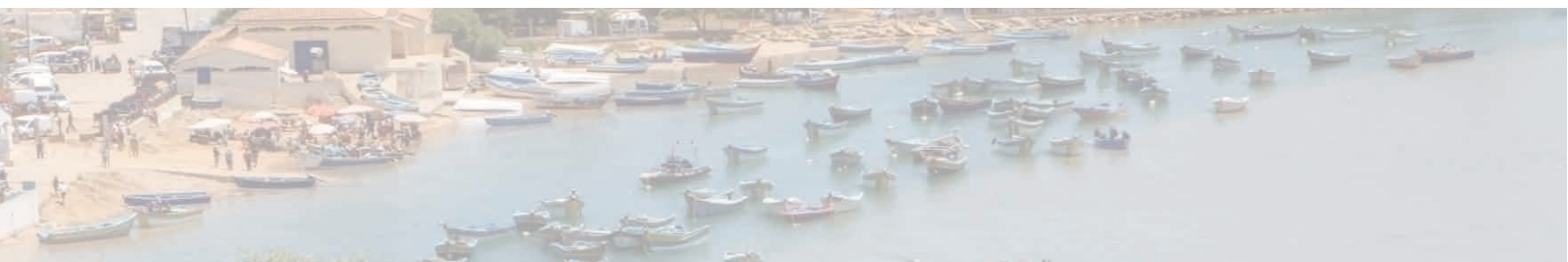
As in the other segments of the fishery sector, entry into artisanal fishing has become dependent on owning a capital. The price of a boat with an artisanal fishing license varies -from one fishing zone to the other and according to the value of the catch- from 250,000 DH to 1.2 million dirhams.

The artisanal fishery sector has been organized with the support of the State in associations and cooperatives of artisanal fishers. This organization has played a significant representative role. Therefore, strengthening these cooperatives / associations would make it possible for them to play decisive roles in the development of artisanal fisheries catches and improvement of the socioeconomic situation of artisanal fishers. The relative failure of the effort to support artisanal fishing cooperatives / associations should not undermine the effort to promote these organizations. The people consulted, from different segments of the fishery sector, recommended the strengthening of cooperatives as an organizational framework for the professionalization of artisanal fishery.

A Persisting Weakness of the Fishery Resource Protection Mechanisms

Despite the control mechanism put in place and the establishment of individualized quotas and traceability techniques, the fishery resource protection mechanisms are still marked by some weaknesses that the COVID-19 crisis may contribute to worsen:

- Maintaining the possibility of leakage of a fraction of the landings to the informal domestic market partly supplied by hawkers (outside ports and fish markets);
- The possibility of purchase by collectors from fish markets (collecting fish from unorganized artisanal fishing landing points);
- The high cost of daily control of thousands of boats at a large number of disembarkation points.



Recommendations

The COVID-19 crisis has exacerbated the social and environmental vulnerabilities of the fishery sector. As such, it has run counter to the progress made by the implementation of the Halieutis plan. As a response to this crisis, the main orientation adopted in these recommendations consists in the professionalization of fishers, by drawing lessons from more or less successful experiences of the cooperative organization of artisanal fishers. In a context of economic slowdown and decline of household income, especially among the poorest, and in a logic of inclusive and sustainable growth, these recommendations are:

- Promote the increase of the productivity and the average income of fishers through the optimal management of the fishery resource.
- Professionalize fishers through training and organization in associations and cooperatives.
- Direct the fishers living in precariousness and in pluriactivity to engage in stable income trades.
- Improve the coverage and quality of social security benefits, in line with the reform of the social protection system, announced by His Majesty the King last August and aimed at universalizing benefits⁹.

I. Need to empower professional fishers and ensure their contribution to the protection of the resource.

- Attach coastal and deep-sea fishing fleets to specific fishing areas by applying the principle of the management unit (put an end to the nomadism of coastal fishing units)
- Empower artisanal fishers by facilitating access to finance so that they can charter and get equipped with storage means; and by strengthening their associative and / or cooperative organization
- Create inside artisanal fishing cooperatives a function of monitoring responsible fishing (compliance with the biological recovery period; protection of spawning areas)

II. Strengthen cooperatives, despite their repeated failure, by providing them with administrative management resources to ensure the diversity of their functions.

Information and awareness function

- Watch over fishery resources and the safety of fishers
- Inform fishers about sales and prices
- Inform fishers about customers to help them develop direct relationships (reduction of the number of intermediaries)

Support the fishers' relation with their partners

- Monitoring catch quotas and keeping catches, sales and prices accounts
- Monitoring the social situation of fishers (NSSF/CNSS services; insurance) and identification of excluded fishers
- Organization of declarations and payment of contributions to the NSSF/CNSS and the insurers
- Financial inclusion plan and support for artisanal fishers and facilitation of access to credit

Labor market mediation and professionalization

- Monitoring the professional situation of fishers and accreditation

of their acquired experience

- Supporting continuous training programs: upgrading, short qualifying training courses; reception and supervision of apprentices; updating fishers' record books
- Labor mediation: collecting recruitment needs; orienting jobseekers towards the appropriate cooperative

III. In the context of the current social protection system reform seeking to universalize social security benefits, ensure the integration of all artisanal fisher into the social protection system.

- Identify fishers who do not have access to the NSSF(CNSS) benefits (the general social security regime: mainly pension, family and daily sickness allowances)
- Identify the fishers holding the RAMEC card (Medical Assistance Scheme for the Economically Underprivileged)

IV. Develop continuous and initial trainings through practice (school ships to complete the theoretical training).

- Strengthen the practical training of fishers by providing their training establishments with school ships
- Deploy apprenticeship training in the three segments of the artisanal fishery

V. Start a redeployment program for fishers.

- Many artisanal fishers are casual workers. Almost half of them live in rural areas and exert agricultural activities. Others have secondary activities
- Little is known about the pluriactivity of fishers. In a strategic approach to reduce pressure on the resource and improve the average income of artisanal and coastal fishers, it would be important to aim for their redeployment in other activities. This approach should be part of a long-term strategy to professionalize the fishery sector and reorient young fishers towards trades with more interesting career prospects

Disclaimer

This work is the product of the World Bank staff. The findings, interpretations and conclusions expressed in this work do not necessarily reflect the views of the World Bank, its Board of Directors or the governments they represent.

The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, names and other information shown on any map in this work do not imply any judgment on the part of the World Bank regarding the legal status of any territory or the approval or acceptance of such boundaries.

⁹ The recognition by artisanal fishers of the social protection system benefits shall encourage them to declare their catches in the formal market.

