

An aerial photograph of a bustling fishing beach. The scene is filled with hundreds of people, many wearing colorful clothing, moving across the wet sand. Numerous wooden fishing boats are beached, some in neat rows and others scattered. The ocean waves are visible on the left side of the frame. The overall atmosphere is one of intense activity and labor.

# A WASTE OF FISH

Food security under threat from  
the fishmeal and fish oil industry  
in West Africa

JUNE 2019

**GREENPEACE**

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# List of acronyms

ACHPR	African Commission on Human and Peoples' Rights
APRAPAM	Association for the Promotion and Empowerment of Maritime Artisanal Fishing
$B_{MSY}$	Biomass able to sustain MSY in the long term
CAOPA	Confederation of African Artisanal Fishing Organisations
CECAF	Fishery Committee for the Eastern Central Atlantic
CPUE	Catch per unit of effort
CRODT	Oceanographic Research Centre Dakar-Thiaroye (Senegal)
DITP	Directorate of fish Processing Industries (Senegal)
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FiTI	Fisheries Transparency Initiative
FMFO	Fishmeal and fish oil
$F_{MSY}$	Fishing pressure able to sustain MSY in the long term
HS Code	Harmonized System Code (for trade data)
IFFO	The Marine Ingredients Organisation
ITC	International Trade Centre
ITLOS	International Tribunal for the Law of the Sea
IUU	Illegal, Unreported and Unregulated
MPEM	Ministry for Fisheries and the Maritime Economy (Mauritania)
MSY	Maximum Sustainable Yield
ONISPA	National Office of Sanitary Inspection of Fishery and Aquaculture Products (Mauritania)
PSE	Plan Sénégal Émergent
RV	Research Vessel
SDG	Sustainable Development Goals
SIPA	Information System on Fisheries in Africa
SRFC	Sub-Regional Fisheries Commission
SSF	Small-Scale Fisheries
TAC	Total Allowable Catch
UN	United Nations
UNCLOS	The United Nations Convention on the Law of the Sea
UNFSA	United Nations Fish Stocks Agreement
WAEMU	West African Economic and Monetary Union

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# Executive Summary

The ocean is essential to life itself, providing the air we breathe, the food we eat and regulating our global climate. Food from the ocean is eaten by billions of people around the world, and is critical in West Africa. In Senegal, fish is around 70% of the animal protein consumed, and in The Gambia it's over half. But the fish on which these coastal countries and the sub-region depend is being diverted from the local food supply to factories, where it is turned into fishmeal and fish oil for export. Rather than feeding local people, West Africa's fish is increasingly nourishing the fish farms and feedlots of other countries.

A number of small pelagic fish species occur along the West African coast. Fisheries for some of these species, for example sardinella, have long provided important sources of food and employment in the region. More recently, industrial exploitation of these stocks has rapidly developed, providing raw material for processing into fishmeal and fish oil.

The production of fishmeal and oil has expanded rapidly in the past few years, particularly in Mauritania. The primary species for the fishmeal and oil industry are round and flat sardinella (*Sardinella aurita* and *S. maderensis*) and bonga (*Ethmalosa fimbriata*) which are essential to food security and livelihoods in fishing communities, particularly in Senegal and The Gambia. Fish worker organisations have been voicing their concerns over the development of this industry and threats it poses to fish populations and people's livelihoods and food security.

Greenpeace<sup>1</sup> documented 50 fishmeal and fish oil factories operating primarily in Mauritania and more recently also in Senegal and The Gambia, of which 40 were active in March 2019. Based on the analysis of official data, Greenpeace identified export destinations, with the bulk of Mauritania's production in 2018 exported to China, the European Union (EU), Turkey and Vietnam, while Senegal exports to other African countries and the EU. Tunisia and the EU receive much of the significantly smaller Gambian production.

All three species used for fishmeal and fish oil are over-exploited, according to the most recent stock assessments by the Food and Agriculture Organization of the United Nations (FAO) Working Group on Small Pelagics. Scientific advice is to significantly reduce catches of the three species, primarily those destined for fishmeal and oil factories. At the same time as catches have increased, the quantity and quality of catch data have seriously declined.

The current situation is one of over-exploited and depleted fish stocks and a rapidly increasing shift of catches from human consumption to the production of fishmeal and fish oil for export. This is contrary to a number of commitments and obligations of the governments of the countries concerned, including international fisheries management instruments and major international commitments such as the United Nations Sustainable Development Goals.

**Urgent action must be taken to reduce the intensity of fishing in the region to environmentally sustainable levels and ensure that it first and foremost meets the food security and livelihood needs of local populations and fishing communities. Such action has been called for many times and must now be translated into concrete measures.**

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<sup>1</sup> In this report, "Greenpeace" refers to Greenpeace Africa and Greenpeace International



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*Children play on the beach with artisanal fishing pirogues in Fass Boye, Senegal  
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# 1 Introduction

Our oceans are huge reservoirs of biodiversity and the primary regulator of the global climate. They are also critical to sustainable development and contribute to poverty eradication by providing sustainable livelihoods and food security for billions of people around the world.<sup>2</sup>

In West Africa, the depletion of fish populations, particularly small pelagic fish, threatens the livelihoods and food security of coastal communities and countries. However, despite repeated commitments by West African governments to ensure their sustainable exploitation, most small pelagic fish stocks continue to be over-exploited.<sup>3</sup> In order to stop and reverse their decline, effective management measures must urgently be adopted and strictly implemented and enforced.

Although the quantity of fishmeal and fish oil (FMFO) originating from West Africa is quite small<sup>4</sup> compared to the global production, the serious socio-economic and environmental impacts in the region have become increasingly obvious and are widely acknowledged, potentially impacting 40 million African consumers.<sup>5</sup>

Small pelagic fish populations occur in the waters of many West African countries and exploitation in a given country has direct implications for other countries with which the fish stocks are shared. In such cases, international instruments clearly require States to cooperate to ensure sustainable exploitation. However, legally binding fisheries management measures agreed at regional level are non-existent, as are allocation mechanisms or much-needed management of fishing capacity of fleets targeting these stocks.<sup>6</sup>

A relatively recent development has come to exacerbate the over-exploitation of certain small pelagic fish stocks in West Africa: The boom in fishmeal and fish oil production in recent years, particularly in Mauritania<sup>7</sup> but also in Senegal, The Gambia and beyond. It diverts a valuable and essential source of food<sup>8</sup> and livelihoods toward what has been demonstrated to be an unsustainable and inefficient use of resources,<sup>9</sup> that is to say the processing of prime fish into feed for aquaculture as well as livestock operations around the world.

According to the FAO, fishmeal production peaked in 1994 at 30 million tonnes and has followed a fluctuating but overall declining trend since then. In 2016, landings from fisheries directed for fishmeal production were down to

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<sup>2</sup> Sustainable Development Goals Knowledge Platform. Oceans & Seas. <https://sustainabledevelopment.un.org/topics/oceanandseas>

<sup>3</sup> Round sardinella, key for food security in West Africa, is further declining. Available at <http://cape-cffa.squarespace.com/new-blog/2018/10/15/round-sardinella-key-for-food-security-in-west-africa-is-further-declining>

<sup>4</sup> In 2015, the total world fishmeal production was 4,731,000 tonnes. At the time, of West African countries, only Morocco ranked within the top 15 fishmeal producers, with 116,000 tonnes. Seafish (2016). Fishmeal and fish oil figures. Available at [www.seafish.org/media/publications/SeafishFishmealandFishOilFactsandFigures\\_201612.pdf](http://www.seafish.org/media/publications/SeafishFishmealandFishOilFactsandFigures_201612.pdf)

<sup>5</sup> CECAF (2016). Report of the Twenty-First Session of the Fishery Committee for the Eastern Central Atlantic. Available at <http://www.fao.org/fishery/docs/DOCUMENT/cecaf/cecaf21/4e.pdf>

<sup>6</sup> Greenpeace International (2016). Greenpeace briefing to the 21st Session of the Fishery Committee for the Eastern Central Atlantic. Available at [www.greenpeace.org/archive-africa/Global/africa/Oceans/Submission%20to%20CECAF%20FINAL.pdf](http://www.greenpeace.org/archive-africa/Global/africa/Oceans/Submission%20to%20CECAF%20FINAL.pdf)

<sup>7</sup> Standing, A. (2017). The growth of fishmeal production in Mauritania: The implications for regional food security. Coalition for Fair Fisheries Arrangements. Available at <http://cape-cffa.squarespace.com/new-blog/2017/2/23/the-growth-of-fishmeal-production-in-mauritania-the-implications-for-regional-food-security>

<sup>8</sup> Cashion, T., Le Manach, F., Zeller, D., & Pauly, D. (2017). Most fish destined for fishmeal production are food-grade fish. *Fish and Fisheries*. Available at <https://onlinelibrary.wiley.com/doi/full/10.1111/faf.12209>

<sup>9</sup> Approximately 4 to 5 tons of whole fish are required to produce 1 ton of dry fishmeal. Miles, R. D. and Chapman, F. A. (2006, reviewed February 2018). The Benefits of Fish Meal in Aquaculture Diets. IFAS Extension, University of Florida. Available at <http://edis.ifas.ufl.edu/pdffiles/FA/FA12200.pdf>

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less than 15 million tonnes because of reduced catches of anchoveta. A growing share of fishmeal is being produced from fish by-products, which account for about 25 to 35 percent of the total volume of fishmeal and fish oil produced, with regional variation.<sup>10</sup>

Globally, the share of the fish catches utilised for direct human consumption has increased significantly.<sup>11</sup> However, the recent developments in Mauritania, Senegal and The Gambia go in the opposite direction, in a region where coastal communities critically depend upon fish for their food and livelihoods. The fact that virtually all fishmeal and fish oil are exported to third countries, and most of them outside the region, clearly contradicts many international commitments on sustainable development, poverty alleviation, food security or gender equality as explained in this report.

Some fishmeal processors, primarily small-scale/artisanal operations, use fish offal as raw material, which is an efficient use of resources that would otherwise be wasted. Some larger-scale operations also use offal, but in relatively small proportions.<sup>12</sup> Given the general lack of transparency in the FMFO sector it is difficult to determine, in any given operation, how much (if any) fish offal is actually used, as opposed to fish fit for human consumption. However, regardless of the lack of transparency, the correlation between the increase in FMFO production and the current over-exploitation of round and flat sardinella and bonga has been highlighted by the FAO Working Group on the Assessment of Small Pelagic Fish off Northwest Africa.<sup>13</sup>

This report examines the situation in Mauritania, Senegal and The Gambia and proposes recommendations which, if implemented, would contribute to halting the decline and helping the recovery of small pelagic fish populations, thereby ensuring that they continue to contribute to livelihoods and food security in the region.

Although Morocco is a major producer and exporter of FMFO, the reported catches of round and flat sardinella and bonga, the small pelagic fish species on which the Senegalese and Gambian artisanal fishing sector and populations rely, are very limited in Morocco.<sup>14</sup> Moreover, the serious threats that the development of the FMFO industry poses in Senegal and The Gambia, both with populations heavily dependent on fish for food and livelihoods, raise particular concern, as does the impact of Mauritania's exploitation of the small pelagic fish stocks it shares with these two countries.

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<sup>10</sup> FAO (2018). The State of World Fisheries and Aquaculture. Available at [www.fao.org/3/i9540en/i9540en.pdf](http://www.fao.org/3/i9540en/i9540en.pdf)

<sup>11</sup> In 2016, over 151 million tonnes of the 171 million tonnes total fish production (about 88%) was utilized for direct human consumption. This share has increased significantly in recent decades, from 67% in the 1960s. FAO (2018). [www.fao.org/3/i9540en/i9540en.pdf](http://www.fao.org/3/i9540en/i9540en.pdf)

<sup>12</sup> FAO (2018). FAO Working Group on the Assessment of Small Pelagic Fish off Northwest Africa (advance copy). Banjul, The Gambia, 26 June–01 July 2018. Available at [www.fao.org/fi/static-media/MeetingDocuments/CECAF/CECAF-SSC8/Ref.8e.pdf](http://www.fao.org/fi/static-media/MeetingDocuments/CECAF/CECAF-SSC8/Ref.8e.pdf)

<sup>13</sup> See Section 5. Stock status of pelagic fish used by the fishmeal industry

<sup>14</sup> FAO (2018). [www.fao.org/fi/static-media/MeetingDocuments/CECAF/CECAF-SSC8/Ref.8e.pdf](http://www.fao.org/fi/static-media/MeetingDocuments/CECAF/CECAF-SSC8/Ref.8e.pdf)

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## 2 Livelihoods at risk in fishing communities

For many years, organisations of artisanal fishermen and women<sup>15 16 17</sup> have been calling on authorities to ensure the sustainable exploitation of small pelagic fish, stop the establishment of fishmeal factories and reserve preferential access to small pelagic fish stocks for the artisanal fishing sector and for human consumption.<sup>18</sup> Sounding the alarm as long ago as January 2014,<sup>19 20</sup> the Association for the Promotion and Empowerment of Maritime Artisanal Fishing (APRAPAM) declared that available data at regional level for small pelagic fish showed an over-exploitation of sardinella, endangering the local food security and social safety net.

In 2017, the 5th APRAPAM forum noted that the uncontrolled proliferation of fishmeal factories in Senegal, The Gambia and Mauritania resulted in negative impacts on these already over-exploited fish populations, as well as on food security, employment, the environment and the health of people living close to these factories.

As recently as 3 May 2019, women of the Confederation of African Artisanal Fishing Organisations (CAOPA)<sup>21</sup> published a declaration stating: *“Women in the sector are directly affected by poor resource management. We also have to face unfair competition from other actors, such as fish meal processing plants, which deprive us of our fish and prevent us from contributing to the food and nutritional security of populations.”*<sup>22</sup>

Endorsed by the FAO Committee on Fisheries in June 2014, the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines)<sup>23</sup> constitute the first international instrument dedicated entirely to the small-scale fisheries sector. They provide principles and guidance for small-scale fisheries governance and development, including the enhancement of the contribution of small-scale fisheries to food security and nutrition and poverty eradication. In the case of shared fishery resources, the SSF Guidelines call for international, regional and sub-regional cooperation.

As an important benchmark, in December 2017, the United Nations General Assembly proclaimed 2022 the International Year of Artisanal Fisheries and Aquaculture,<sup>24</sup> citing *“the relevant role that artisanal fisheries and aquaculture play in the eradication of hunger, food insecurity, malnutrition, poverty and the sustainable use of fisheries resources, thereby contributing to the achievement of Sustainable Development Goals 1, 2 and 14”* and

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<sup>15</sup> APS, 23 November 2018 La CAOPA célèbre la Journée mondiale de la pêche, mercredi à Banjul. Available at [www.aps.sn/peche/article/la-journee-mondiale-de-la-peche-celebree-mercredi-a-banjul-par-les-acteurs-de-la-peche-artisanale](http://www.aps.sn/peche/article/la-journee-mondiale-de-la-peche-celebree-mercredi-a-banjul-par-les-acteurs-de-la-peche-artisanale)

<sup>16</sup> SIPA, 12 July 2018. CAOPA Calls for National Action Plans for Sustainable Small-Scale Fisheries. Available at <http://sipanews.org/caopa-calls-for-national-action-plans-for-sustainable-small-scale-fisheries/>

<sup>17</sup> IGFM, 21 November 2018. Banjul: «le rôle primordial» des femmes dans la pêche reconnu. Available at [www.igfm.sn/banjul-la-caopa-souligne-le-role-primordial-des-femmes-dans-la-peche/](http://www.igfm.sn/banjul-la-caopa-souligne-le-role-primordial-des-femmes-dans-la-peche/)

<sup>18</sup> APRAPAM (2017). Rapport du 7<sup>ème</sup> Forum de Mbour. Thème: La production de farine de poisson. Enjeux pour les Communautés Côtières Ouest-africaines Available at [www.aprapam.org/images/migrate/2018/09/Rapport-final-forum-2017-F.pdf](http://www.aprapam.org/images/migrate/2018/09/Rapport-final-forum-2017-F.pdf)

<sup>19</sup> APRAPAM (2014) 4<sup>ème</sup> Forum de Mbour. Les menaces sur la contribution de la pêche à la sécurité alimentaire. Available at [https://peche-dev.org/IMG/pdf/senegal\\_les\\_menaces\\_a\\_la\\_contribution\\_de\\_la\\_peche\\_dans\\_la\\_.pdf](https://peche-dev.org/IMG/pdf/senegal_les_menaces_a_la_contribution_de_la_peche_dans_la_.pdf)

<sup>20</sup> APPRAPAM (2014). Réserver à la pêche artisanale l'exploitation de la Sardinelle ou Yaboye. Available at [www.rewmi.com/reserver-peche-artisanale-lexploitation-sardinelle-yaboye-dr-sogui-diouf.html](http://www.rewmi.com/reserver-peche-artisanale-lexploitation-sardinelle-yaboye-dr-sogui-diouf.html)

<sup>21</sup> See CAOPA's membership at [www.caopa.org/en/our-partners](http://www.caopa.org/en/our-partners)

<sup>22</sup> African Confederation of Professional Organizations of Artisanal Fisheries. Conakry Declaration 3 May 2019. [www.caopa.org/en/caopas-documents/declarationanglais/](http://www.caopa.org/en/caopas-documents/declarationanglais/)

<sup>23</sup> FAO (2015). Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication. Available at [www.fao.org/3/i4356en/i4356EN.pdf](http://www.fao.org/3/i4356en/i4356EN.pdf)

<sup>24</sup> United Nations General Assembly. 72nd Session (January 2018). Resolution adopted by the General Assembly on 5 December 2017. Available at <https://undocs.org/A/RES/72/72>



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calling on States to promote the implementation of the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication.<sup>25</sup> The resolution also called on States to assess “the potential positive and negative impacts of aquaculture, including socioeconomics, on the marine and coastal environment, including biodiversity, and adopting relevant methods and techniques to minimize and mitigate adverse effects”.

The over-exploitation of such essential resources as small pelagic fish as well as the aggravating factor of the expansion of fishmeal production have devastating consequences for people and the marine environment in the region. As a matter of priority, States must face their responsibilities and adopt and implement measures at a regional level to reverse the decline of several West African small pelagic fish stocks and ensure their sustainable and equitable exploitation and use.



*Fatou Samba, a fish processor, leader and activist at work in Bargny, Senegal  
© Clément Tardif / Greenpeace*

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<sup>25</sup> FAO (2014) The SSF Guidelines: At a glance. Available at [www.fao.org/3/a-i4487e.pdf](http://www.fao.org/3/a-i4487e.pdf)

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## 3 Fishmeal and fish oil production in Mauritania, Senegal and The Gambia

Assessing the exact number of active FMFO factories is complex due to the fluctuation of activities for a number of reasons, including the availability of fish supply, factory capacity, seasonality of fishing activities, economic viability, renovation and ongoing litigation with authorities and/or local populations.

It is even more difficult to evaluate the amount of fish fit for human consumption processed into FMFO as in many cases, control of the exact amount per species supplied to factories is inefficient or even absent. A general rule is that roughly 4 to 5 kilograms of fish are needed to produce 1 kilogram of fishmeal. Considering available FMFO export data, this indicates the amount of fish being processed into FMFO is staggering.

The FMFO sector completely lacks transparency regarding ownership of factories, their operations in terms of input and output quantities and composition, socio-economic contribution, environmental impact assessments and reliable trade and export data. Local populations and stakeholders should be consulted and effectively participate in the decision-making process prior to authorising the establishment of such operations. If authorised, operations should be required to make such information publicly available and maintained up to date.

### 3.1 Fishmeal factories in Mauritania, Senegal and The Gambia

Greenpeace has compiled and cross-checked several official registries of industrial fishmeal and fish oil processing facilities sourcing whole fish in Mauritania, Senegal and The Gambia, including (but not limited to) the following sources:

- **Senegal Directorate of fish Processing Industries (DITP)** 2019 List of fishing companies and processing units accredited for export.<sup>26</sup>
- **Mauritanian Ministry for Fisheries and the Maritime Economy** 2015 List of accredited establishments.<sup>27</sup>
- **Mauritanian National Office of Sanitary Inspection of Fisheries and Aquaculture Products (ONISPA)** 2017 certified quantities of fishmeal per factory in tonnes.<sup>28</sup>
- **European Commission** 2018 and 2019 lists of establishments approved for export to the EU.<sup>29</sup>
- **China Customs** 2019 Registration of Mauritania facilities which produce fish oil, fishmeal and other aquatic animal proteins for exportation to China.<sup>30</sup>

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<sup>26</sup> Liste des entreprises de pêche - Unités de transformation agréées à l'exportation. Available at [www.ditp.gouv.sn/content/liste-des-entreprises-et-navires-de-pêche-mise-à-jour-mai-2019](http://www.ditp.gouv.sn/content/liste-des-entreprises-et-navires-de-pêche-mise-à-jour-mai-2019)

<sup>27</sup> See [www.peches.gov.mr/IMG/xlsx/liste\\_etablisements\\_agrees.xlsx](http://www.peches.gov.mr/IMG/xlsx/liste_etablisements_agrees.xlsx)

<sup>28</sup> Quantités de farine certifiées en 2017 par usine en tonnes. Available at [www.peches.gov.mr/IMG/pdf/annexes1\\_pv1\\_mars\\_2018.pdf](http://www.peches.gov.mr/IMG/pdf/annexes1_pv1_mars_2018.pdf)

<sup>29</sup> Third Country Establishments. List per Country. (of establishments that are considered to meet the EU hygiene standards). Available at [https://webgate.ec.europa.eu/sanco/traces/output/non\\_eu\\_listsPerCountry\\_en.htm](https://webgate.ec.europa.eu/sanco/traces/output/non_eu_listsPerCountry_en.htm)

<sup>30</sup> Registration of Mauritania facilities which produce fish oil, fish meal and other aquatic animal proteins for exportation to China [www.customs.gov.cn/customs/jyjj/dzwjyj/qymd/slaq/2275214/2019040308264640886.xlsx](http://www.customs.gov.cn/customs/jyjj/dzwjyj/qymd/slaq/2275214/2019040308264640886.xlsx)

However, considering that some of the registries may be outdated, incomplete, or include non-operational sites, this research relied primarily on field investigations conducted in all the production sites referred to in official lists and/or further identified by local communities, during the month of March 2019.

The number of **active** factories corresponds to processing facilities that were operational at the time. The **temporarily inactive** plants were identified as such for periods of time ranging from a few months up to 2 years, meanwhile mostly remaining listed on official registries.

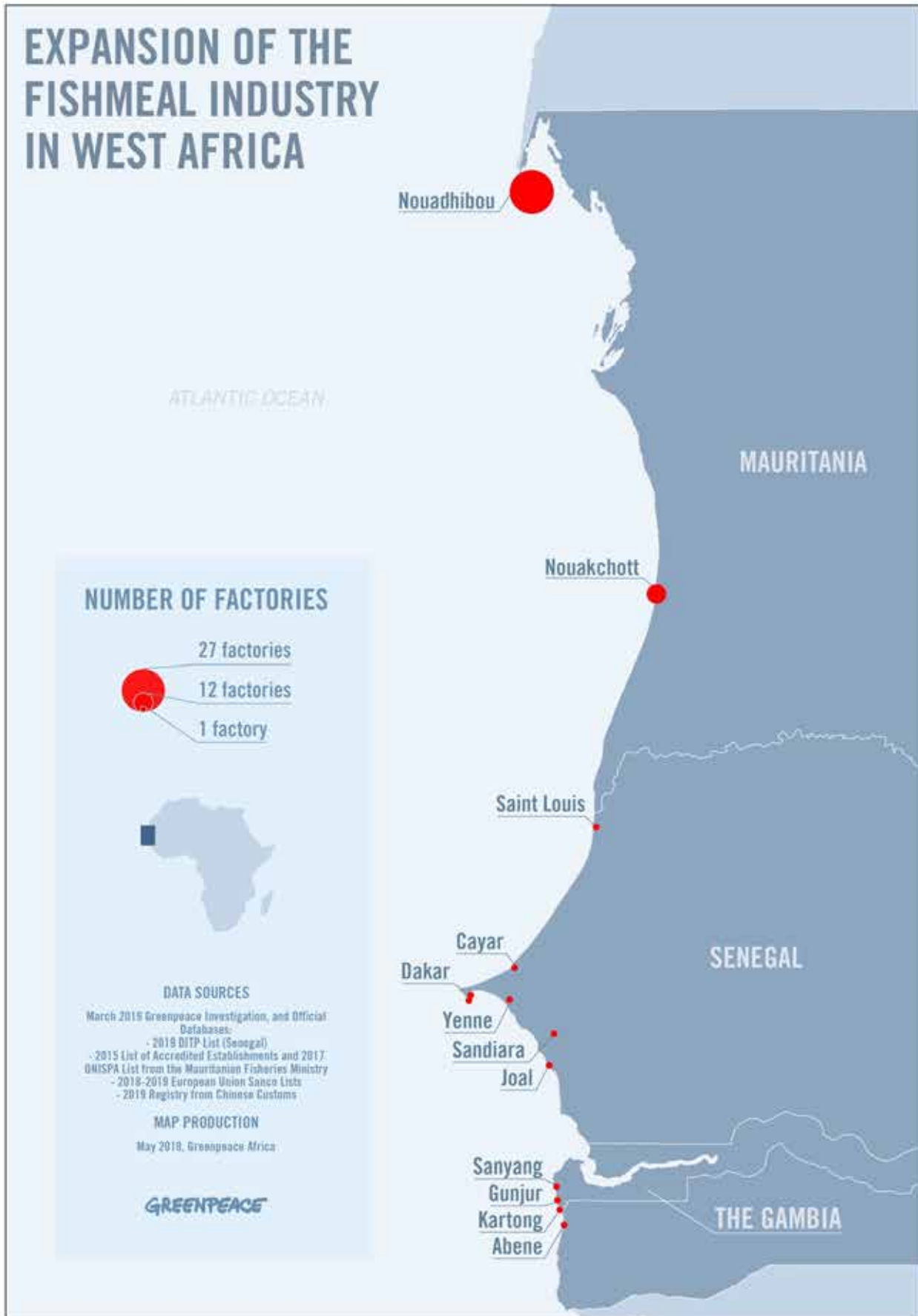
*Table 1: Number and operational status of West African fishmeal and fish oil factories in March 2019*

	OPERATIONAL STATUS	NUMBER OF FACTORIES
<b>MAURITANIA</b>	<b>TOTAL</b>	<b>39</b>
	Active	33
	Temporarily inactive	6
<b>SENEGAL</b>	<b>TOTAL</b>	<b>8</b>
	Active	4
	Under construction	2
	Temporarily inactive	2
<b>THE GAMBIA</b>	<b>TOTAL</b>	<b>3</b>
	Active	3

For full detail of the names, localities and location coordinates of the above factories, see Appendix 2.

The over-exploitation of small pelagic fish in Mauritania, Senegal and The Gambia is causing serious environmental and socio-economic impacts. Moreover, the conflicts which regularly erupt between Senegal and Mauritania regarding access to Mauritanian waters by Senegalese artisanal fishermen are symptomatic of the lack of regional cooperation and fisheries management.

Map 1: West African fishmeal and fish oil factories





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## 3.2 Mauritania

Mauritania has a relatively lower dependence on fish for food security and employment compared to other countries in the region, however the fisheries sector is still very important to the country's economy, mainly due to the high volume of fish products exported.<sup>31</sup> Fisheries provide around 55,000 jobs in Mauritania,<sup>32</sup> and of those 80% are in the artisanal sector.<sup>33</sup> The average annual consumption of fish is 8-10 kg per capita, with up to 20 kg per capita annually in urban coastal areas. Small pelagic fish represent 90% of Mauritania's catches but only 40% of the value of landings.<sup>34</sup>

Until recently, small pelagic fish stocks were primarily considered by the government as a commodity to be exploited, rather than an essential source of food and employment for the local population. Access to small pelagic fish stocks, which are shared with neighbouring countries, has long been granted to large-scale industrial trawlers from a number of countries, including several EU Member States (primarily the Netherlands, Germany, Poland, Lithuania, the UK and France)<sup>35</sup>, Russia, Georgia, Turkey, China, vessels flagged to St Vincent and the Grenadines and Belize as well as Mauritanian-flagged vessels.<sup>36</sup>

According to the FAO<sup>37</sup> the total fish catch in Mauritania's exclusive economic zone (EEZ) reached 794,000 tonnes in 2014, decreasing in 2015 to 614,000 tonnes. In 2016, catches increased again with a catch of about 848,000 tonnes. For the period of January to November 2018, official figures report catches of 1,148,287 tonnes, including 1,090,380 tonnes of pelagic species.<sup>38</sup>

Senegalese pirogues (artisanal fishing boats) have traditionally fished in Mauritanian waters for small pelagic fish, some of which supply Mauritanian FMFO factories. In 2016, Mauritania suspended its agreement with Senegal, citing the failure to respect the obligation to land fish in Mauritania. This was a major blow to the Senegalese artisanal fishing sector, leaving many fishermen without any alternative fishing grounds. In the last quarter of 2016, a fleet of about 40 Turkish purse seine vessels started fishing small pelagic fish in Mauritania.

In 2018, Mauritania and Senegal signed a new agreement granting 400 licences with a total allowable catch (TAC) of 50,000 tonnes per year, to be landed in Mauritania. An additional 120 Senegalese pirogues are also allowed to

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<sup>31</sup> Fish products made up 36% of total of exports in 2017. Évaluation rétrospective et prospective du Protocole à l'accord de partenariat dans le domaine de la pêche durable entre l'Union européenne et la République islamique de Mauritanie. Rapport final 25 mars 2019. Available at <https://publications.europa.eu/en/publication-detail/-/publication/08e725d1-5a8f-11e9-9151-01aa75ed71a1>

<sup>32</sup> European Union (2018) Research for PECH Committee – Fisheries in Mauritania and the European Union. Available at [www.europarl.europa.eu/RegData/etudes/STUD/2018/617458/IPOL\\_STU\(2018\)617458\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2018/617458/IPOL_STU(2018)617458_EN.pdf)

<sup>33</sup> Stratégie Nationale de Croissance Accélérée et de Prospérité Partagée 2016-2030. Available at [http://w.mp.mr/wp-content/uploads/2017/12/Doukoure\\_scapp-volume-1\\_vf.pdf](http://w.mp.mr/wp-content/uploads/2017/12/Doukoure_scapp-volume-1_vf.pdf)

<sup>34</sup> European Union (2018) Research for PECH Committee – Fisheries in Mauritania and the European Union. Available at [www.europarl.europa.eu/RegData/etudes/STUD/2018/617458/IPOL\\_STU\(2018\)617458\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2018/617458/IPOL_STU(2018)617458_EN.pdf)

<sup>35</sup> See <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012R1259&from=EN>

<sup>36</sup> European Commission (2019) Évaluation rétrospective et prospective du Protocole à l'accord de partenariat dans le domaine de la pêche durable entre l'Union européenne et la République islamique de Mauritanie. Rapport final 25 mars 2019. Available at <https://publications.europa.eu/en/publication-detail/-/publication/08e725d1-5a8f-11e9-9151-01aa75ed71a1>

<sup>37</sup> FAO Working Group on the assessment of small pelagic fish off northwest Africa, Nouadhibou, Mauritania, 22–27 May 2017. Available at <http://www.fao.org/3/i8896b/i8896B.pdf>

<sup>38</sup> Ministère des Pêches et de l'Économie Maritime. Synthèse des captures mensuelles de janvier à novembre 2018 par groupes d'espèces en tonnes pour la Pêche Hauturière et la Pêche Côtière hors Sennes Tournantes. Available at [www.peches.gov.mr/IMG/pdf/annexe3-\\_captures\\_de\\_peche\\_2018.pdf](http://www.peches.gov.mr/IMG/pdf/annexe3-_captures_de_peche_2018.pdf)

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operate in Mauritanian waters under charter agreements, also with the obligation to land their catches in Mauritania.

The FMFO industry in Mauritania has grown rapidly over the last decade in an inadequately controlled and regulated manner. The number of FMFO factories grew from 1 in 2005, to 6 in 2011, and 11 in 2012.<sup>39</sup> By 2015, there were 29 factories with a theoretical processing capacity of about 1 million tonnes and 11 more factories had been authorised but were still to be built.<sup>40</sup> Since 2016, FMFO factories are required to diversify by producing frozen products and install filters to minimise pollution. These constraints forced certain factories that could not support the additional costs to stop operations temporarily in 2017.<sup>41</sup> In March 2019, Greenpeace documented 39 factories, with 33 active at the time.

The processing of small pelagic fish into FMFO has grown considerably over the last few years. In 2015, it was estimated that more than 300,000 tonnes per year of small pelagics (mainly round sardinella, flat sardinella and bonga) were used in the fishmeal industry. An assessment made for the European Commission states that, in light of the latest available catch and trade data, the actual quantity of fish processed into fishmeal is likely to be significantly higher. In 2017, it was estimated that nearly 550,000 tonnes of small pelagics were harvested to supply FMFO processing plants.<sup>42</sup>

In order to start addressing the problem of the expansion of FMFO using whole fish that are fit for human consumption, on 15 February 2016, Mauritania adopted a circular imposing a limit of 10,000 tonnes per year per factory of whole round sardinella that could be used for fishmeal and oil.<sup>43</sup> That limit is supposed to be reduced by 15% per year over 4 years. The circular implements the objectives provided for in the National Strategy for Responsible Management 2015-2019<sup>44</sup> which aims to reorient FMFO production toward the use of fish offal. A second circular, adopted on 22 February 2019, authorises fishmeal factories to use flat sardinella and bonga to supplement the supply of round sardinella.<sup>45</sup> The quantities of these two species must be weighed and declared. These measures have proven difficult to enforce and insufficient to effectively control the use of prime fish in the production of FMFO. Further, they may have resulted in significant misreporting of round sardinella catches as flat sardinella and bonga.<sup>46</sup>

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<sup>39</sup> Kinadjian, L., Soumaré, A. and Naffa, M. L. O. (2015). Rapport final sur le cadre d'investissement pour le développement durable des pêches en Mauritanie 2015-2020. Available at [www.peches.gov.mr/IMG/pdf/rapport\\_finalcadre\\_d\\_investissement.pdf](http://www.peches.gov.mr/IMG/pdf/rapport_finalcadre_d_investissement.pdf)

<sup>40</sup> Stratégie nationale de gestion responsable pour un développement durable des pêches et de L'économie maritime 2015-2019. Available at [www.peches.gov.mr/IMG/pdf/strategie\\_mpem\\_fr.pdf](http://www.peches.gov.mr/IMG/pdf/strategie_mpem_fr.pdf)

<sup>41</sup> Rapport de la Réunion annuelle du Comité Scientifique Conjoint relatif à l'Accord de pêche signé entre la République islamique de Mauritanie et l'Union européenne. Nouakchott, Mauritanie - 18 au 21 septembre 2018. Available at [https://ec.europa.eu/fisheries/sites/fisheries/files/report-jsc-mauritania-2018-09\\_fr.pdf](https://ec.europa.eu/fisheries/sites/fisheries/files/report-jsc-mauritania-2018-09_fr.pdf)

<sup>42</sup> Évaluation rétrospective et prospective du Protocole à l'accord de partenariat dans le domaine de la pêche durable entre l'Union européenne et la République islamique de Mauritanie. Available at <https://publications.europa.eu/en/publication-detail/-/publication/08e725d1-5a8f-11e9-9151-01aa75ed71a1>

<sup>43</sup> Ministère des Pêches et de l'Économie Maritime. Lettre circulaire 15 février 2016. Available at [www.peches.gov.mr/IMG/pdf/circulaire\\_farine.pdf](http://www.peches.gov.mr/IMG/pdf/circulaire_farine.pdf)

<sup>44</sup> Ministère des Pêches et de l'Économie Maritime (2015). Stratégie nationale de gestion responsable pour un développement durable des pêches et de l'économie maritime 2015-2019. Available at [www.peches.gov.mr/IMG/pdf/strategie\\_mpem\\_fr.pdf](http://www.peches.gov.mr/IMG/pdf/strategie_mpem_fr.pdf)

<sup>45</sup> Ministère des Pêches et de l'Économie Maritime. Lettre circulaire 22 février 2016. Available at [www.peches.gov.mr/IMG/pdf/circulaire\\_modifiant\\_circulaire\\_farine007.pdf](http://www.peches.gov.mr/IMG/pdf/circulaire_modifiant_circulaire_farine007.pdf)

<sup>46</sup> CECAF (2018). Status summary for small pelagic stocks in the Northern area of the Eastern Central Atlantic - CECAF. Available at [www.fao.org/fi/static-media/MeetingDocuments/CECAF/CECAF-SSC8/3e.pdf](http://www.fao.org/fi/static-media/MeetingDocuments/CECAF/CECAF-SSC8/3e.pdf)

Mauritania's report on the investment framework for the sustainable development of fisheries 2015-2020<sup>47</sup> notes the important development of the small pelagic fishery and the rapid development of the FMFO industry attracting more and more investments (Estimated \$US 200 million in 2015). It also notes that a regulatory framework must be put in place to avoid negative impacts on the resource. The FMFO sector is estimated to only provide a relatively low added value (30%) and very few unskilled and seasonal jobs. Higher economic returns could be derived from other processing methods, especially frozen products. The report recommends halting the development of fishmeal factories and starting a reorientation of the small pelagic sector toward products for human consumption. To that effect, Mauritania planned to progressively eliminate FMFO production, including by increasing export taxes on FMFO and tightening controls.<sup>48</sup>

*Map 2: Location of fishmeal factories in Mauritania (east of Nouadhibou)*



<sup>47</sup> Kinadjian, L., Soumaré, A. and Naffa, M. L. O. (2015). [www.peches.gov.mr/IMG/pdf/rapport\\_finalcadre\\_d\\_investissement.pdf](http://www.peches.gov.mr/IMG/pdf/rapport_finalcadre_d_investissement.pdf)

<sup>48</sup> Étude commandée par la commission Pêche du Parlement européen – La pêche en Mauritanie et l'Union Européenne. PE 617.458 - Mars 2018 [www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL\\_STU\(2018\)617458](http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_STU(2018)617458)



Map 3: Location of fishmeal factories in Mauritania (south of Nouakchott)



*A local fisherman unloads fish at a Chinese factory in Mauritania*  
© Liu Yuyang / Greenpeace



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### 3.3 Senegal

There are currently four operational FMFO factories in Senegal and two more under construction. Given the importance of the fisheries sector in Senegal, that development is of particular concern. According to official figures,<sup>49</sup> fisheries provide more than 600,000 jobs, however the number of people directly or indirectly deriving some income from fisheries could be as high as 825,000.<sup>50</sup> Artisanal fishing represents about 80% of landings in Senegal and per capita fish consumption is 29.9 kg annually (providing 70% of animal proteins), with small pelagic fish a main component.

It is therefore not surprising that the Plan Sénégal Émergent (PSE)<sup>51</sup> identifies the fisheries sector as strategic for the country, representing a significant contribution to food security and employment. Phase II (2019-2023)<sup>52</sup> of the PSE purports to ensure the sustainable exploitation of marine resources, restore habitats and ecosystems, limit fishing effort, control access to marine resources, strengthen monitoring, control and surveillance and improve the fisheries information and analysis system.

The stated objectives of Senegal's fisheries sectoral policy 2016-2023<sup>53</sup> are the sustainable management of fisheries through the regulation of access to marine resources and the development of management plans. The analysis of the previous fisheries and aquaculture sectoral policy (2008-2013) acknowledges that the problems facing the fisheries sector remained to be addressed. Among the threats identified to achieving the sectoral policy objectives is the further decline of coastal pelagic fish stocks due to increased catches boosted by massive exports, the absence of control and regulation of catches and of the downstream operations which will lead to the degradation of the contribution of fisheries to food security.<sup>54</sup>

Over-investment in fishmeal factories and freezing plants for coastal pelagic fish (mainly sardinella) for export has led to excess industrial and artisanal fishing capacity and increased fishing pressure on resources. These factories compete with traditional resource users (fishmongers and women processors) for access to raw material, leading to decreased availability of fish on the market and declining employment in artisanal processing, mainly of women.<sup>55</sup>

The current sectoral policy establishes the need to regulate fishing access, capacity and effort through management plans (strategic axis 2), as a priority for sardinella, in order to maintain the role that the fishery plays in food security and the socio-economic balance with the priority of satisfying national demand. In 2011, a national commission for the management of small pelagics was created<sup>56</sup> to monitor the status of stocks, promote co-management and

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<sup>49</sup> Ocean Action Hub (2017). Présentation du Sénégal: Présentation du secteur de la pêche. Available at [www.oceanactionhub.org/presentation-du-senegal-presentation-de-la-secteur-de-la-peche](http://www.oceanactionhub.org/presentation-du-senegal-presentation-de-la-secteur-de-la-peche)

<sup>50</sup> Harper, S. and Sumaila, U. R. (2019). Distributional impacts of fisheries subsidies and their reform. Case studies of Senegal and Vietnam. International Institute for Environment and Development. Available at <https://pubs.iied.org/16655IIED/>

<sup>51</sup> The PSE is the reference framework for Senegal's strategy in the medium and long term (2035). See [https://www.sec.gouv.sn/sites/default/files/Plan%20Senegal%20Emergent\\_0.pdf](https://www.sec.gouv.sn/sites/default/files/Plan%20Senegal%20Emergent_0.pdf) and

<https://www.sec.gouv.sn/sites/default/files/Plan%20Senegal%20Emergent%20Plan%20d%27Actions%20Prioritaires%202014-2018.pdf>

<sup>52</sup> République du Sénégal (2018). Plan Sénégal Émergent. Plan d'actions prioritaires 2019-2023. Available at [http://www.senegal-emergent.com/sites/default/files/documents/pap2\\_pse.pdf](http://www.senegal-emergent.com/sites/default/files/documents/pap2_pse.pdf)

<sup>53</sup> Lettre de Politique Sectorielle de la Pêche et de l'Aquaculture – Juin 2016. See 3.4.2. <https://www.oceanactionhub.org/lettre-de-politique-sectorielle-de-developpement-de-la-peche-et-de-laquaculture-lpsdpa>

<sup>54</sup> See 2.2.3.1 of the above document.

<sup>55</sup> See 2.2.1.4 of the above document.

<sup>56</sup> Ministère de l'Économie Maritime. Arrêté ministériel n° 12967 MEM/DPM/SD en date du 23 novembre 2011 portant création, organisation et fonctionnement d'une commission nationale de gestion des petits pélagiques. <http://www.jo.gouv.sn/spip.php?article9433>

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regulatory measures, reinforce stakeholders' capacity, promote dialogue, propose management and conservation measures, defend national interests at a regional level and cooperate with neighbouring countries sharing the same stocks.

In a document on the implementation of Sustainable Development Goal (SDG) 14 commitments,<sup>57</sup> Senegal's Ministry for Fisheries and Maritime Economy highlights the importance of small pelagic fish to the artisanal fishing sector, representing the majority of the sector's catch, as well as being an important part of Senegalese fish consumption.<sup>58</sup> The document states Senegal's commitment to develop and effectively implement management plans, taking into consideration artisanal fishing and the management of excess fishing capacity. However, to date, there is still no national management plan for small pelagic fisheries while the fishing capacity of the artisanal sector has continued to expand in a completely uncontrolled manner, exacerbated by a series of financial measures.<sup>59</sup>

The over-exploitation and mismanagement of fisheries and fisheries-related activities in Senegal must be addressed as a matter of priority, including by redirecting fish landings to human consumption.



*Africa Feed factory in Yenne, Senegal  
© Greenpeace*

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<sup>57</sup> See Section 6.1 of this report.

<sup>58</sup> Ministère de l'Économie Maritime. Note sur la mise en œuvre de l'ODD 14 au Sénégal. Available at [www.oceanactionhub.org/note-sur-la-mise-en-oeuvre-de-l%E2%80%99odd-14-au-senegal-minist%C3%A8re-de-la-p%C3%Aache-et-de-l%E2%80%99economie-maritime](http://www.oceanactionhub.org/note-sur-la-mise-en-oeuvre-de-l%E2%80%99odd-14-au-senegal-minist%C3%A8re-de-la-p%C3%Aache-et-de-l%E2%80%99economie-maritime)

<sup>59</sup> USAID (2017). Senegal Fisheries Applied Political Economy Analysis. Available at [www.usaid.gov/sites/default/files/documents/1860/Senegal\\_Fisheries\\_PEA\\_Report\\_-\\_Public\\_20190207.pdf](http://www.usaid.gov/sites/default/files/documents/1860/Senegal_Fisheries_PEA_Report_-_Public_20190207.pdf)  
Distributional impacts of fisheries subsidies and their reform: case studies of Senegal and Vietnam. Available at <https://pubs.iied.org/pdfs/16655IIED.pdf>

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## 3.4 The Gambia

There are currently three operational FMFO factories in The Gambia, with environmental and socio-economic impacts causing concerns and leading to protests by local communities as these factories divert essential fish products from traditional trade, processing and related activities, thus endangering livelihoods and food security.<sup>60</sup> The pollution created by FMFO factories has also led to local protests.<sup>61</sup>

The Gambian population is highly dependent on fisheries resources. According to the World Bank, the livelihoods of an estimated 200,000 people are critically dependent on fish and fisheries related activities.<sup>62</sup> The Constitution of The Gambia has directive principles that contribute to the realisation of the right to adequate food: Article 216 (4) sets forth that the State shall endeavour to facilitate equal access to sufficient food for all persons.<sup>63</sup> As noted by the SDG Action Campaign in 2017, *“Almost one in three Gambians are vulnerable to food insecurity.”* Fish contributes over half of the total animal protein intake in The Gambia.<sup>64</sup>

To achieve SDG 2 (end hunger, achieve food security and improve nutrition), the recently launched National Zero Hunger Strategic Review is identifying hunger gaps at all levels.<sup>65</sup> The objectives of the National Nutrition Policy 2010-2020<sup>66</sup> are to *“eliminate hunger, food insecurity and malnutrition through the use of nutritious, safe and locally available foods.”* The policy also states that *“fish constitutes a cheap source of animal protein for a significant proportion of the Gambian population.”* The Fisheries and Aquaculture Sector Strategy 2016-2020 provides guidance for policy and investment choices and promotes the sustainable management and utilisation of fisheries resources.<sup>67</sup>

As an encouraging sign, according to the ex ante evaluation study of a sustainable fisheries partnership agreement between the European Union and the Republic of The Gambia, it would appear that the Gambian government has put on hold the establishment of more FMFO factories that had been authorised by the previous regime.<sup>68</sup> The evaluation states that the fishmeal is exported to China,<sup>69</sup> while the fish oil by-product is exported to the EU.

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<sup>60</sup> The Guardian (2019). Chinese fishmeal plants leave fishermen in The Gambia all at sea. See [www.theguardian.com/global-development/2019/mar/20/chinese-fishmeal-plants-leave-fishermen-gambia-all-at-sea](http://www.theguardian.com/global-development/2019/mar/20/chinese-fishmeal-plants-leave-fishermen-gambia-all-at-sea)

<sup>61</sup> Gambian environmental law requires any development proposal that is foreseen to have minor or major impact on the environment to undergo an Environmental Impact assessment (EIA), in accordance with Environmental Impact Assessment Regulations 2014, available at <http://extwprlegs1.fao.org/docs/pdf/gam177743.pdf>

<sup>62</sup> The World Bank (2018). Republic of Gambia. West Africa Regional Fisheries Program – Phase II Environmental and Social Management Framework (ESMF). Available at <http://documents.worldbank.org/curated/en/919521545373344581/pdf/ESMF-WARFP-GAMBIA-Final-for-Disclosure-docx.pdf>

<sup>63</sup> FAOLEX Database. The Constitution of Gambia. Available at <http://www.fao.org/faolex/results/details/en/c/LEX-FAOC129753>

<sup>64</sup> FAO (2018). The State of World Fisheries and Aquaculture. Available at [www.fao.org/3/i9540en/i9540en.pdf](http://www.fao.org/3/i9540en/i9540en.pdf)

<sup>65</sup> UN SDG Action Campaign (2017). Country-led progress on the SDGs – The journey of Gambia. See <https://sdgactioncampaign.org/2017/09/20/the-sdgs-in-action-country-led-country-owned/>

<sup>66</sup> FAOLEX Database. Gambia. National nutrition policy 2010-2020. Available at <http://www.fao.org/faolex/results/details/en/c/LEX-FAOC148784>

<sup>67</sup> FAO (2014). The Gambia and FAO. Partnering to achieve food security and nutrition. Available at <http://www.fao.org/3/a-az483e.pdf>

<sup>68</sup> European Commission. Directorate-General for Maritime Affairs and Fisheries Policy (2018). Ex ante evaluation study of a Sustainable Fisheries Partnership Agreement between the European Union and the Republic of The Gambia. Available at <https://publications.europa.eu/en/publication-detail/-/publication/2a9ee054-2216-11e8-ac73-01aa75ed71a1/language-en>

<sup>69</sup> According to official data, fishmeal exports in 2016 were 3,254 tonnes.

Map 4: Location of fishmeal factories in The Gambia





## Morocco

Until 2017, Morocco was the largest producer and exporter of fishmeal and fish oil in the region. In 2018 it dropped to second, as Mauritania's production and export soared, doubling from 2014 to 2018. Turkey was by far the largest importer of fishmeal from Morocco in the period 2014-2018, importing 60,323 tonnes in 2018, followed by the EU (27,011 tonnes) and China (16,263 tonnes). Peru was the main importer of fish oil from Morocco in 2018 (18,843 tonnes), followed by the EU with 6,618 tonnes, of which France alone imported 5,863 tonnes.

*Table 2: Fishmeal and fish oil exports from Morocco, 2014-2018 (tonnes)*

	2014	2015	2016	2017	2018
<b>Fishmeal</b>	136,977	110,876	134,565	139,080	116,914
<b>Fish oil</b>	39,686	52,577	35,409	34,505	30,762

Source: ITC Trade Map<sup>70</sup>

The number of FMFO factories under Moroccan administration has remained relatively stable in recent years. From 2010<sup>71</sup> to 2012<sup>72</sup> there were 25 factories. In 2015, there were 22 factories<sup>73</sup> authorised for FMFO production. The Moroccan National Association of Fishmeal and Fish Oil Producers (ANAFAP) currently lists 24 production units,<sup>74</sup> while the European Commission list of processing plants in Morocco that are approved for export to the EU (as of 30 November 2018) lists 25 establishments, 21 involved in FMFO production according to company websites.<sup>75</sup>

According to a 2017 evaluation of the EU-Morocco bilateral fisheries agreement, small pelagic fish make up more than 80% of catches in Moroccan waters. In 2015, fishmeal production amounted to 19% (139,000 tonnes) of the total amount of fish processed in Morocco, while fish oil amounted to 9% (66,000 tonnes). Based on data from the Moroccan Maritime Fisheries Department, fishmeal only represented 10% of the processing industry turnover in 2015, while freezing and canning represented 38% and 29% respectively, and fresh products 10%.<sup>76</sup>

Between 2013 and 2015, Morocco's production of fishmeal doubled and its production of fish oil almost tripled.<sup>77</sup> This was despite a stated objective of the Moroccan government's Halieutis Strategy 2010-2020 to reduce the production of FMFO and encourage higher-value processing of small pelagic species.<sup>78</sup> In addition, the Moroccan

<sup>70</sup> Fishmeal and fish oil export data is available on [www.trademap.org](http://www.trademap.org)

<sup>71</sup> Stratégie de développement et de compétitivité du secteur halieutique marocain à l'horizon 2020. Available at [www.maroc.ma/es/system/files/documents\\_page/HALIEUTIS%20Marrakech2010.pdf](http://www.maroc.ma/es/system/files/documents_page/HALIEUTIS%20Marrakech2010.pdf)

<sup>72</sup> Département de la Pêche Maritime - Activités de valorisation. Available at [www.mpm.gov.ma/wps/portal/Activites-de-valorisations](http://www.mpm.gov.ma/wps/portal/Activites-de-valorisations)

<sup>73</sup> European Commission (2018) Évaluation rétrospective et prospective du Protocole à l'APPD entre l'UE et le Royaume du Maroc – September 2017. Available at <https://publications.europa.eu/en/publication-detail/-/publication/02025b15-d02b-11e8-9424-01aa75ed71a1/language-fr>

<sup>74</sup> The National Association of Manufacturers of Flour and Fish Oil (ANAFAP) [www.anafap.org.ma/associations/index\\_aso.asp?id\\_site=anafap](http://www.anafap.org.ma/associations/index_aso.asp?id_site=anafap)

<sup>75</sup> European Commission (2018) Morocco Processing Plants [https://webgate.ec.europa.eu/sanco/traces/output/MA/ABP-FSB\\_MA\\_en.pdf](https://webgate.ec.europa.eu/sanco/traces/output/MA/ABP-FSB_MA_en.pdf)

<sup>76</sup> See <https://publications.europa.eu/en/publication-detail/-/publication/02025b15-d02b-11e8-9424-01aa75ed71a1/language-fr>

<sup>77</sup> See <https://publications.europa.eu/en/publication-detail/-/publication/02025b15-d02b-11e8-9424-01aa75ed71a1/language-fr>

<sup>78</sup> See [www.maroc.ma/es/system/files/documents\\_page/HALIEUTIS%20Marrakech2010.pdf](http://www.maroc.ma/es/system/files/documents_page/HALIEUTIS%20Marrakech2010.pdf)

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government's National Nutrition Strategy 2011-2019 aims to support productive, sustainable fisheries and promote the consumption of local fishery products.<sup>79</sup>

Unlike Mauritania, Senegal and The Gambia, Morocco in 2010 adopted a management plan for small pelagic fish, establishing a total allowable catch, bycatch and fishing capacity limits, fishing zones and seasons, authorised fishing gears and other management measures.<sup>80</sup>

Morocco has also concluded fisheries agreements<sup>81</sup> with Japan (for tuna), Russia<sup>82</sup> (for small pelagics) and the EU (including small pelagics).<sup>83</sup> Unlike EU vessels, Russian vessels are allowed to produce FMFO on board without restrictions.

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<sup>79</sup> 2011-2019 National Nutrition Strategy 2011-2019. Available at <http://extwprlegs1.fao.org/docs/pdf/mor145912.pdf>

<sup>80</sup> Available at [www.mpm.gov.ma/wps/portal/Portail-MPM/Pêche%20maritime/Plans-amenagement](http://www.mpm.gov.ma/wps/portal/Portail-MPM/Pêche%20maritime/Plans-amenagement)

<sup>81</sup> See <https://publications.europa.eu/en/publication-detail/-/publication/02025b15-d02b-11e8-9424-01aa75ed71a1/language-fr>

<sup>82</sup> See [www.morocoworldnews.com/2019/02/266462/morocco-russia-deal-fishing-sahara-coast](http://www.morocoworldnews.com/2019/02/266462/morocco-russia-deal-fishing-sahara-coast)

<sup>83</sup> See <https://ec.europa.eu/fisheries/cfp/international/agreements/morocco>

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## 4 Follow the fish:

### *Trade in fishmeal and fish oil*

Where is West African people's fish going? The production of FMFO in West Africa is diverting a valuable and essential source of food and livelihoods toward the supply of feed for aquaculture and livestock operations around the world, as well as food supplements, in the case of fish oil. Mauritania, Senegal and The Gambia do not have sizeable aquaculture industries, therefore their FMFO production is primarily exported for use abroad. This section examines trade data<sup>84</sup> for FMFO exports by these three countries.

According to the FAO, over the last few years China has been the world's main consumption market for fishmeal and Norway for fish oil, primarily for their sizeable aquaculture industries.<sup>85</sup> This is reflected in the trade data analysed in this section, although for the three countries considered in this report, the EU Member States and Turkey also play a major role as consumers of FMFO derived from small pelagic fish.

In **Mauritania**, the sharp increase in catches of small pelagics landed for fishmeal, described in section 3, is reflected in trade figures. Exports of FMFO from Mauritania have doubled between 2014 and 2018, making this country now the largest exporter of fishmeal and fish oil in the region, followed by Morocco.

According to official data from the Mauritanian Government, the total catch of all pelagic species in 2017 amounted to 780,662 tonnes. Exports of fishmeal and fish oil that year totalled 128,870 and 39,600 tonnes respectively.<sup>86</sup> For 2018, data from the Mauritanian Ministry of Fisheries are available so far up to November, with fishmeal and fish oil exported during that period amounting to 112,103 and 34,094 tonnes.<sup>87</sup> The Mauritanian Committee on Statistics, however, notes some inconsistencies in the available trade data, of up to 40,000 t of exported fishmeal, though no further detail is provided in the documents we have been able to examine.<sup>88</sup>

Data extracted from the International Trade Centre (ITC)'s Trade Map, based on the UN Comtrade database<sup>89</sup> and Eurostat,<sup>90</sup> show slightly different figures similar to those above. In 2017 Mauritania exported 119,745 tonnes of fishmeal and 34,482 tonnes of fish oil. The figures available for 2018 are 127,940 and 40,430 tonnes respectively. This means exports have almost doubled since 2014, when 66,783 tonnes of fishmeal and 19,752 tonnes of fish oil were exported.

Tables 3 and 4 show trade of fishmeal and fish oil from Mauritania between 2014 and 2018, including data for the 10 top importers by volume.

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<sup>84</sup> Trade Map [www.trademap.org](http://www.trademap.org) was used to obtain export data from Mauritania, Senegal and The Gambia under Harmonized System (HS) Codes 230120 (for fishmeal) as well as 150410 and 150420 (for fish oil). The database was last accessed on 14 May 2019.

<sup>85</sup> FAO (2018). [www.fao.org/3/i9540en/i9540en.pdf](http://www.fao.org/3/i9540en/i9540en.pdf)

<sup>86</sup> ONISPA (2018). L'exportation par nature et par groupe d'espèces pour la période de Jan-Déc de 2017. Available at [www.peches.gov.mr/IMG/pdf/annexes1\\_pv1\\_mars\\_2018.pdf](http://www.peches.gov.mr/IMG/pdf/annexes1_pv1_mars_2018.pdf)

<sup>87</sup> Ministère des Pêches et de l'Économie Maritime. Exportations globales des produits de pêche de jan-Nov 2018. Available at [www.peches.gov.mr/IMG/pdf/annexe5-\\_exportations\\_globales2018.pdf](http://www.peches.gov.mr/IMG/pdf/annexe5-_exportations_globales2018.pdf)

<sup>88</sup> "A difference of around 40,000 tonnes was found between the quantities of fishmeal exported through the SMCP [Mauritanian Fish Marketing Company] and those summarised in ONISPA health certificates." See Procès-Verbal de la quatrième réunion du Comité Technique des Statistiques (CTS) au titre de l'année 2018. Available at [www.peches.gov.mr/IMG/pdf/pv\\_cts\\_4\\_reunion\\_2018.pdf](http://www.peches.gov.mr/IMG/pdf/pv_cts_4_reunion_2018.pdf)

<sup>89</sup> UN Comtrade is a repository of official international trade statistics and relevant analytical tables. See <https://comtrade.un.org/>

<sup>90</sup> Eurostat is the statistical office of the European Union. See <https://ec.europa.eu/eurostat/>

The main destinations for fishmeal produced in Mauritania in the last five years have been China, the EU, Turkey and Vietnam, which together absorbed over 90% of Mauritanian exports in 2018.<sup>91</sup> Within the EU, Greece (11,973 tonnes), Spain (7,904 tonnes) and Germany (7,849 tonnes), accounted for 95% of the 29,196 tonnes imported by EU Member States in 2018.

*Table 3: Top 10 importers of fishmeal from Mauritania 2014 - 2018 (tonnes)*

	2014	2015	2016	2017	2018
<b>World</b>	<b>66,783</b>	<b>66,346</b>	<b>74,516</b>	<b>119,745</b>	<b>127,940</b>
<b>China</b>	0	244	11,467	49,638	53,066
<b>The EU</b>	38,319	12,418	23,683	10,966	29,196
<b>Turkey</b>	4,265	4,323	12,433	20,429	20,381
<b>Vietnam</b>	4,757	16,802	8,830	22,333	14,800
<b>Japan</b>	1,323	3,918	3,421	3,344	3,325
<b>Russia</b>	5,903	3,993	1,759	4,196	1,582
<b>Belarus</b>	0	60	834	1,403	1,360
<b>Nigeria</b>	164	40	440	100	800
<b>Saudi Arabia</b>	1,287	5,821	2,306	0	581
<b>Egypt</b>	1,347	550	0	800	520

Source: ITC Trade Map / UN Comtrade

For fish oil, the EU accounts for over half of Mauritania's exports, with France alone (14,790 tonnes) responsible for 62% of the EU imports and more than one third of Mauritania's total fish oil exports. Norway is the second largest importer, followed by Turkey. Other main importers include Denmark, Greece, Spain and Belgium.<sup>92</sup>

Fish oil production is declining globally and demand for fish oil is high because it is used as a human nutritional supplement as well as an important ingredient in feeds for certain carnivorous fish species.<sup>93</sup> A significant amount of this fish oil, particularly in countries which don't have a big aquaculture industry, will be used in pharmaceutical products and nutritional supplements. According to industry sources 18% of the world's fish oil production was used for direct human consumption in 2016.<sup>94</sup>

<sup>91</sup> In 2018, China imported 41.48%, the EU imported 22.82% and Turkey imported 15.93% of the total 127,940 tonnes of fishmeal exported by Mauritania that year.

<sup>92</sup> The EU import figures of fish oil from Mauritania in 2018 are (in tonnes): France 14,790, Denmark 2,994, Greece 2,435, Spain 1,948 and Belgium 1,564.

<sup>93</sup> FAO (2018). [www.fao.org/3/i9540en/i9540en.pdf](http://www.fao.org/3/i9540en/i9540en.pdf)

<sup>94</sup> Bachis, E. (2017). Fishmeal and fish oil: A summary of global trends. Presentation at the IFFO Annual Conference. Available at [http://www.iffoevents.com/files/iffo/2.IFFO%20Washington%202017\\_1.pdf](http://www.iffoevents.com/files/iffo/2.IFFO%20Washington%202017_1.pdf)



Table 4: Top 10 importers of fish oil from Mauritania 2014 - 2018 (tonnes)

	2014	2015	2016	2017	2018
<b>World</b>	<b>19,752</b>	<b>29,825</b>	<b>19,993</b>	<b>34,482</b>	<b>40,430</b>
<b>The EU</b>	15,535	24,314	17,144	17,585	23,371
<b>Norway</b>	2,018	1,902	605	4,196	8,414
<b>Turkey</b>	983	1,057	496	9,440	4,292
<b>Japan</b>	0	0	38	106	1,580
<b>China</b>	0	0	123	1,725	1,036
<b>Saudi Arabia</b>	457	0	0	0	510
<b>Egypt</b>	63	423	0	0	355
<b>Malaysia</b>	0	0	0	0	293
<b>Ukraine</b>	0	150	0	0	220
<b>Tokelau</b>	0	80	0	0	0

Source: ITC Trade Map / UN Comtrade



Fish is processed at Lem Seafood factory in Nouadhibou, Mauritania  
© Liu Yuyang / Greenpeace

Quantities of FMFO exported by **Senegal** and **The Gambia** are much smaller, particularly in the case of The Gambia. Trade Map data for Senegal is only available up to 2017 and exports of fishmeal show a decreasing trend, while exports of fish oil have increased. Senegal's main fishmeal export markets are other African countries, which accounted for 54.5% of its fishmeal exports in 2017.<sup>95</sup> They are followed by the EU (20.8%) and Japan (18.2%). All fish oil produced in Senegal was exported to EU Member States in 2017, with France accounting for 40.5% of the exports, followed by Italy, Spain and Denmark.

Tables 5-8 show trade of FMFO from Senegal and The Gambia in the last few years, including volume data for top importers.

*Table 5: Top 10 importers of fishmeal from Senegal 2013 - 2017 (tonnes)*

	2013	2014	2015	2016	2017
<b>World</b>	<b>12,927</b>	<b>14,315</b>	<b>17,288</b>	<b>9,974</b>	<b>8,839</b>
<b>Cameroon</b>	6,424	5,492	4,339	1,856	1,884
<b>The EU</b>	546	1,199	2,094	1,959	1,836
<b>Japan</b>	826	1,801	1,979	1,618	1,606
<b>Togo</b>	2,431	1,206	2,313	1,162	1,307
<b>Benin</b>	1,385	834	1,685	700	690
<b>Côte d'Ivoire</b>	628	1,929	2,264	1,748	600
<b>Vietnam</b>	0	60	140	630	480
<b>Mali</b>	107	28	35	0	191
<b>Congo</b>	66	101	238	284	66
<b>Canada</b>	0	106	0	0	60

Source: ITC Trade Map / UN Comtrade

<sup>95</sup> African import figures of fishmeal from Senegal are (in tonnes): Cameroon 1,884, Togo 1,307, Benin 690, Côte d'Ivoire 600, Mali 191, Congo 66, Ghana 53 and Democratic Republic of Congo 22.

Table 6: Top 10 importers of fish oil from Senegal 2013 - 2017 (tonnes)

	2013	2014	2015	2016	2017
<b>World</b>	<b>249</b>	<b>649</b>	<b>2,473</b>	<b>2,551</b>	<b>2,604</b>
France	20	0	0	1,652	1,055
Italy	0	0	384	0	660
Spain	9	227	268	378	541
Denmark	220	220	1,173	299	314
Portugal	0	159	4	59	34
Belgium	0	0	262	0	0
Chile	0	0	0	126	0
Dominican Republic	0	44	0	0	0
Netherlands	0	0	345	0	0
New Zealand	0	0	38	37	0

Source: ITC Trade Map / UN Comtrade



Artisanal fishing pirogues in Kafountine, Senegal  
© Clément Tardif / Greenpeace

The Gambia has very recently entered trade in FMFO and according to Trade Map data, Tunisia is the main market destination for both fishmeal and fish oil from The Gambia.

*Table 7: Importers of fishmeal from The Gambia 2014 - 2018 (tonnes)*

	2014	2015	2016	2017	2018
<b>World</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,555</b>	<b>1,969</b>
<b>Tunisia</b>	0	0	0	211	1,008
<b>Latvia</b>	0	0	0	0	588
<b>Vietnam</b>	0	0	0	1,344	373

Source: ITC Trade Map / UN Comtrade

*Table 8: Importers of fish oil from The Gambia 2014 - 2018 (tonnes)*

	2014	2015	2016	2017	2018
<b>World</b>	<b>0</b>	<b>0</b>	<b>870</b>	<b>1,378</b>	<b>823</b>
<b>Tunisia</b>	0	0	101	270	423
<b>Panama</b>	0	0	0	0	400
<b>China</b>	0	0	0	546	0
<b>Denmark</b>	0	0	729	0	0
<b>India</b>	0	0	40	0	0
<b>Switzerland</b>	0	0	0	562	0

Source: ITC Trade Map / UN Comtrade



## 5 Stock status of pelagic fish *used by the fishmeal and fish oil industry*

### 5.1 Species

The species of small pelagics that comprise the main catches in the waters of Mauritania, Senegal and The Gambia are sardines (*Sardina pilchardus*), round sardinella (*Sardinella aurita*), flat sardinella (*Sardinella maderensis*), horse mackerel (*Trachurus trachurus*), Cunene horse mackerel (*Trachurus trecae*), chub mackerel (*Scomber colias*), anchovy (*Engraulis encrasicolus*) and bonga (*Ethmalosa fimbriata*). Of these species, it is primarily sardinella (both round and flat) and bonga that feed the fishmeal industry of the three countries.<sup>96</sup>

### 5.2 Catches

Over the past 25 years, the total catches of small pelagic species off northwest Africa (Atlantic coast of Morocco to the southern border of Senegal) have, with relatively minor fluctuations, increased from 1.2 million tonnes in 1994 to 2.7 million tonnes in 2017. All catch data used in this section comes from the FAO Working Group on the Assessment of Small Pelagic Fish off Northwest Africa (referred to hereafter as the FAO Working Group).<sup>97</sup>

Table 9: 2017 catches of small pelagic species in northwest Africa (tonnes)

	2017 catch	Proportion of catch
<b>Sardine</b>	1,220,000	45%
<b>Round sardinella *</b>	398,000	15%
<b>Flat sardinella</b>	212,000	8%
<b>Horse mackerel (3 species) *</b>	361,000	13%
<b>Chub mackerel</b>	382,000	15%
<b>Anchovy</b>	20,000	0%
<b>Bonga *</b>	117,000	4%
<b>Total small pelagic catch</b>	<b>2,710,000</b>	<b>100%</b>

\* indicates stock is over-exploited according to FAO Working Group, 2018

Source: FAO Working Group

<sup>96</sup> Corten, A., Braham, C. B., & Sadegh, A. S. (2017). The development of a fishmeal industry in Mauritania and its impact on the regional stocks of sardinella and other small pelagics in Northwest Africa. *Fisheries Research* 186: 328-336. Available at <https://www.sciencedirect.com/science/article/abs/pii/S016578361630337X>

<sup>97</sup> FAO (2018). FAO Working Group on the Assessment of Small Pelagic Fish off Northwest Africa (advance copy). Banjul, The Gambia, 26 June - 01 July 2018. Available at [www.fao.org/fi/static-media/MeetingDocuments/CECAF/CECAF-SSC8/Ref.8e.pdf](http://www.fao.org/fi/static-media/MeetingDocuments/CECAF/CECAF-SSC8/Ref.8e.pdf)

The catch composition has evolved over time. Whereas sardines accounted for 35% of catches in 2000, by 2017 that had increased to 45%. Conversely, round sardinella declined from 22% of the catches in 2000 to 15% in 2017 (including a drop in catches from 500,000 tonnes in 2016 to less than 400,000 tonnes in 2017). Horse mackerel showed a similar decline from 18% to 13% over the same period, as did anchovy (8% to less than 1%). Chub mackerel and bonga increased, from 8% and 2% in 2000 to 14% and 4% in 2017, respectively. Flat sardinella comprised a relatively stable 6-8% of the catches.<sup>98</sup>

Catches of the species that are used in the production of fishmeal and fish oil are primarily taken in the waters of Mauritania and Senegal, with only small amounts from Morocco. The table below shows the catches by Exclusive Economic Zone (EEZ), using data from the 2018 FAO Working Group.

*Table 10: 2017 catches of principle species for fishmeal and fish oil in northwest Africa, by EEZ of capture*

Unit: Tonnes	Round sardinella	Flat sardinella	Bonga	Total catch
<b>Morocco</b>	31,656	0	0	<b>31,656</b>
<b>Mauritania</b>	171,788	73,624	72,930	<b>318,342</b>
<b>Senegal</b>	191,498	127,085	15,735	<b>334,318</b>
<b>The Gambia</b>	2,876	11,172	28,446	<b>42,494</b>
<b>Total northwest Africa</b>	<b>397,818</b>	<b>211,881</b>	<b>117,111</b>	<b>726,810</b>

Source: FAO Working Group

### 5.3 Stock structure

For the purposes of stock assessment, the FAO Working Group considers there to be a single stock throughout the region of northwest Africa for several species: Flat sardinella, Atlantic horse mackerel, Cunene horse mackerel, chub mackerel<sup>99</sup> and anchovy.<sup>100</sup>

Separate assessments are conducted for two stocks of sardines in the region, one to the north of 26°N and the other to the south. Bonga is found near to shore in Mauritania, Senegal and The Gambia. Its stock structure is unclear and the FAO Working Group evaluates it both as one stock and as two (Mauritania and Senegalo-Gambian). There is some evidence that the bonga off northern Mauritania may be from a separate stock than those off Senegal.<sup>101</sup>

The stock structure and migration of round sardinella remain uncertain. The traditional view, and as reflected in the stock assessments of the FAO Working Group, is that a single stock migrates between the waters of southern Senegal

<sup>98</sup> Figures from the FAO Working Group include catches of 650,000 to 1.4 million tonnes taken off the Atlantic coast of Morocco, as well as small catches (20,000 to 30,000 tonnes in recent years) of false scad, *Caranx rhonchus*, a third horse mackerel species, for which no assessment has been conducted.

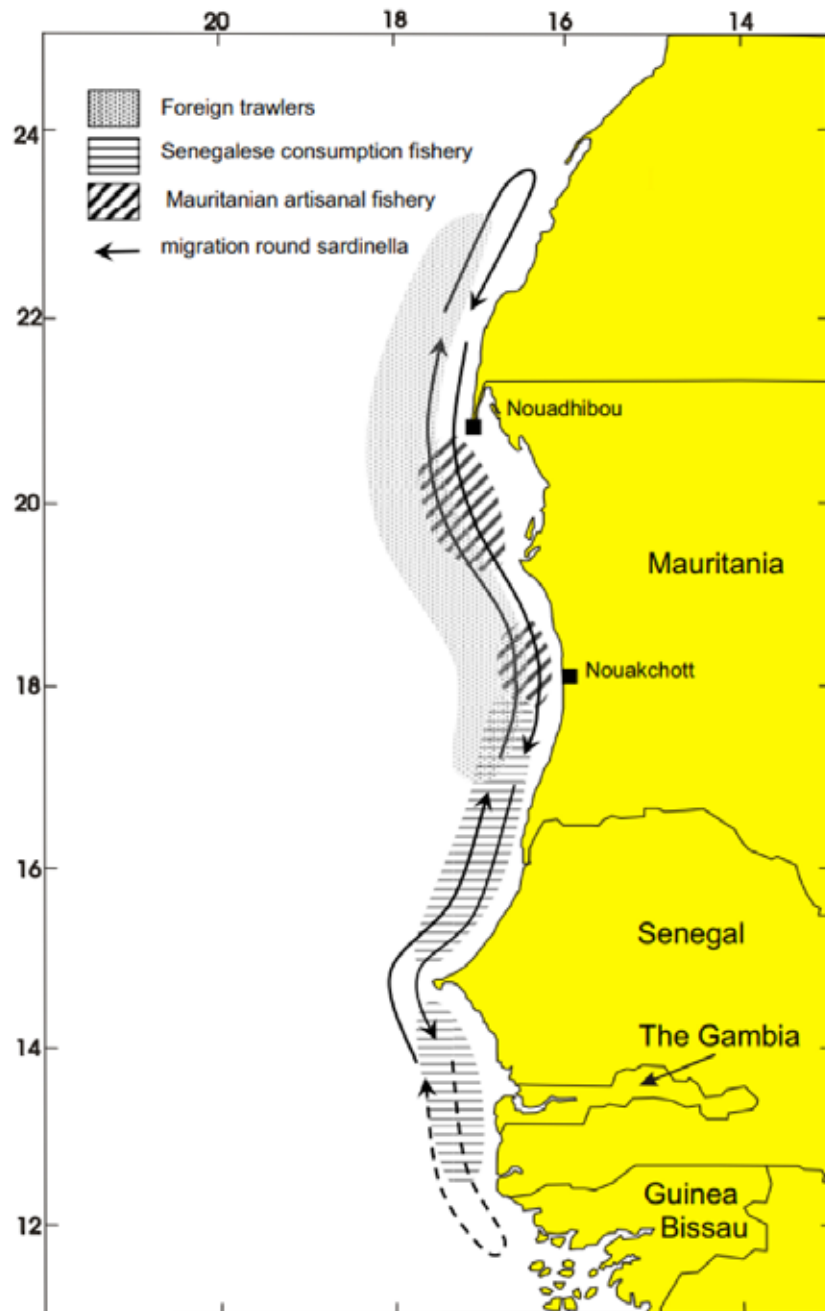
<sup>99</sup> There are actually two stocks of chub mackerel, with split at 26°N in Morocco.

<sup>100</sup> There is evidence that for anchovy there may be more than a single stock in the northwest Africa region.

<sup>101</sup> Corten, A., Braham, C. B., & Sadegh, A. S. (2017). The development of a fishmeal industry in Mauritania and its impact on the regional stocks of sardinella and other small pelagics in Northwest Africa. *Fisheries Research* 186: 328-336. Available at [www.sciencedirect.com/science/article/abs/pii/S016578361630337X](http://www.sciencedirect.com/science/article/abs/pii/S016578361630337X)

(or even somewhat further south) and Morocco, being subject to fishing throughout its range. Under this scenario, overfishing in one zone would have an adverse impact throughout the region. This is the possibility illustrated by map 5 though alternative migration routes have been proposed.<sup>102</sup> Another possibility is that parts of the sardinella stock migrate along portions of this path, but some stock components undergo lesser migrations or even remain relatively sedentary, for instance in northern Mauritania.<sup>103</sup> If this were the case, overfishing in one zone would have less impact elsewhere.

Map 5: Round sardinella – presumed migration route and fishing areas of various fleets exploiting it



Source: Corten, A. et al (2017)<sup>103</sup>

<sup>102</sup> Zeeberg, J., Corten, A., Tjoe-Awie, P., Cocab, J., & Hamadyc B. (2008). Climate modulates the effects of *Sardinella aurita* fisheries off Northwest Africa. *Fisheries Research* 89: 65-75. Available at [www.sciencedirect.com/science/article/abs/pii/S0165783607002160](http://www.sciencedirect.com/science/article/abs/pii/S0165783607002160)

<sup>103</sup> Corten, A., Braham, C. B., & Sadegh, A. S. (2017). The development of a fishmeal industry in Mauritania and its impact on the regional stocks of sardinella and other small pelagics in Northwest Africa. *Fisheries Research* 186: 328-336. Available at [www.sciencedirect.com/science/article/abs/pii/S016578361630337X](http://www.sciencedirect.com/science/article/abs/pii/S016578361630337X)

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## 5.4 Stock status

The FAO Working Group<sup>104</sup> meets annually to evaluate the status of these stocks. It most recently met in Banjul, The Gambia, in June 2018.

The FAO Working Group concluded that both stocks of **sardines** are not fully exploited in relation to the classic Maximum Sustainable Yield (MSY) reference points. This has been a consistent assessment since at least as far back as the 2015 FAO Working Group meeting. These stocks accounted for 45% of the total catch of small pelagic species in 2017, the latest year for which data are available.

Of the main species used by the FMFO industry in Mauritania, Senegal and The Gambia, assessment of the stock of **round sardinella** proved problematic for the FAO Working Group. It noted the lack of acoustic surveys in the years prior to 2017, the deterioration of the catch per unit of effort (CPUE) series and poor quality or non-existent sampling data in Mauritania and Senegal. As a result of these data deficiencies, the FAO Working Group was unable to adopt a quantitative assessment. One model suggested the stock could be as low as 25% of the level required to achieve MSY, while the 2017 acoustic survey by the Research Vessel (RV) *Dr Fridtjof Nansen* showed the lowest biomass on record for both round and flat sardinella. The FAO Working Group was extremely clear in its conclusions and recommendations (all citations from FAO Working Group (2018) page 35)

- 1. The stock of sardinella, in particular *S. aurita*, is being overexploited and that stock size is at an all-time low.*
- 2. Current fishing mortality is well above the sustainable level, and that without a strong reduction of fishing effort, the stock will remain at its present low level or decline even further. To remedy this situation, the working group recommends a substantial reduction of fishing effort in the shortest possible term. The working group cannot quantify exactly the necessary reduction of fishing effort, but it estimates that it should be in the order of at least 50%.*
- 3. The current situation of overfishing is mainly due to the expansion of the fishmeal industry over the past years. The main proportion of sardinella caught in the sub-region is now being processed into fishmeal and exported to Asia. This has a strong effect on food security in the region. The working group therefore recommends to realise the necessary reduction of fishing effort primarily in the fishmeal sector.*
- 4. It is extremely worrying that the two countries with the largest interests in the sardinella fishery, Mauritania and Senegal, do not seem to be able to provide adequate data on catches, fishing effort and length composition to the working group.*

The FAO Working Group was also unable to adopt a quantitative assessment for **flat sardinella**. **Bonga** is over-exploited, suffering from excessive fishing mortality. This has been the situation since at least the 2015 FAO Working Group meeting.

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<sup>104</sup> The permanent FAO Working Group on the Assessment of Small Pelagic Fish off Northwest Africa, established in March 2001, has as its objective to assess the state of the small pelagic resources and make recommendations on fisheries management and exploitation options aimed at ensuring optimal and sustainable use of small pelagic fish resources for the benefit of coastal countries.



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The stock of **Atlantic horse mackerel** is, according to the 2018 FAO Working Group, below the level of biomass capable of producing MSY (BMSY); furthermore, the fishing effort is judged to be unsustainable, being greater than the fishing level able to support MSY in the long term (FMSY). In comparison, the FAO Working Group in 2016 considered Atlantic horse mackerel to be fully exploited, so the situation has deteriorated.

The situation for **Cunene horse mackerel** is even worse, with the biomass barely half the level necessary to produce MSY. Similarly, fishing mortality is considered to be excessive. This has been a consistent diagnosis by the FAO Working Group since at least 2015.

**Chub mackerel** was determined by the 2017 FAO Working Group to be fully exploited. Nevertheless, as catches have been increasing in recent years, it recommended a reduction in effort.

**Anchovy** is considered to be fully exploited, though the FAO Working Group noted a reduction in abundance since 2014, including a low acoustic survey result in 2017.

The Scientific Sub-Committee of the Fishery Committee for the Eastern Central Atlantic (CECAF) met a few months later, in October 2018. They largely endorsed the conclusions of the FAO Working Group concerning the status of the stocks. Further, the Sub-Committee emphasised the problems with data collection and fisheries management in Mauritania, Senegal and The Gambia. It issued a clear warning:

*"The most important development at the sub-regional level is the continued expansion of the fishmeal industry. This development is occurring in Mauritania, Senegal and the Gambia. The fishmeal factories can absorb much larger quantities than the consumption market, and so they have stimulated artisanal fishermen to increase their fishing effort. In Mauritania a whole new fleet of purse seiners has been brought in from abroad to catch fish for the fishmeal plants. The main species used for fishmeal are the round and flat sardinellas, as well as bonga. The introduction of the fishmeal industry has thus led to a region-wide increase in fishing effort on sardinella. The development of the fishmeal industry has also led to problems in collecting accurate catch data. In Mauritania the government has imposed restrictions on the amount of round sardinella that can be transformed into fishmeal. As a result, factory owners sometimes report sardinella as bonga in order to avoid the restrictions. In Senegal, the research institute CRODT does not received any information from the fishmeal factories. As a consequence, the catch data reported by CRODT do not contain the catches processed by the fishmeal plants. Hence the catch figures reported for Senegal will be underestimates."*

The Sub-Committee recommended reductions in catch and/or effort for both sardinella species, both horse mackerel species, anchovy and bonga. It seems that at least part of the reason for the lack of catch sampling data in Senegal is due to a failure to pay the researchers responsible for collection of such data.<sup>105</sup>

In summary, the fish meal industry depends to a very large extent on stocks that have been determined to be over-exploited, for which the quality and confidence of the required data and assessments are deteriorating, partly as a result of fishmeal operations in the region.<sup>106</sup>

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<sup>105</sup> Anon. (2018). Atelier de coordination de recherche sur la sardinelle. Report of a meeting in Nouakchott, Mauritania 29-30 November 2018

<sup>106</sup> CECAF (2018). Scientific Sub-Committee October 2018 Report [www.fao.org/fi/static-media/MeetingDocuments/CECAF/CECAF-SSC8/2e.pdf](http://www.fao.org/fi/static-media/MeetingDocuments/CECAF/CECAF-SSC8/2e.pdf)

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## 5.5 Climate Change

Inevitably, climate change is affecting the stocks of small pelagic fish in West Africa. The impact of climate-related stresses on growth, recruitment, mortality and other population traits would be expected to be much greater for stocks that already suffer the effects of over-exploitation and depletion, as is the case for many stocks in the region.

One study<sup>107</sup> investigated the potential impacts of climate change on fisheries in West Africa. By 2050, yields in Senegal, The Gambia and Mauritania were predicted to fall by 10-15% compared to catches around 2000 (more tropical countries could experience drops of up to 50% in catches). Catches have increased significantly since 2000 so the decline would be greater from today's catch levels.

Additionally, significant increases in ocean temperature in the central eastern Atlantic are shifting distribution and migration patterns of the stocks. The thermal front, critical for small pelagic species, is moving north – fluctuating as far north as Casablanca, almost 1,000 km from its historical location around Nouadhibou. Recent research shows that rising temperatures have pushed sardinella an average of 200 miles north since 1995.<sup>108</sup>



*Artisanal Fishermen in a pirogue fishing off of the Senegalese coast, Kafountine, Casamance  
© Clément Tardif / Greenpeace*

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<sup>107</sup> Lam, V. W. Y., Cheung, W. W. L., Swartz, W., & Sumaila, U. R. (2012). Climate change impacts on fisheries in West Africa: implications for economic, food and nutritional security. *African Journal of Marine Science* 34:1, 103-117. Available at [www.researchgate.net/publication/254218935\\_Climate\\_Change\\_Impacts\\_on\\_Fisheries\\_in\\_West\\_Africa\\_Implications\\_for\\_Economic\\_Food\\_and\\_Nutritional\\_Security](http://www.researchgate.net/publication/254218935_Climate_Change_Impacts_on_Fisheries_in_West_Africa_Implications_for_Economic_Food_and_Nutritional_Security)

<sup>108</sup> Green, M. (2018). Ocean Shock: Fishmeal Factories Plunder Africa. Reuters, November 26, 2018. <https://www.reuters.com/investigates/special-report/ocean-shock-sardinella/> (accessed 13 May 2019)

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## 6 Turning people's food into fishmeal *undermines international commitments*

The over-exploitation of small pelagic fish stocks, exacerbated by the development of FMFO production in West Africa, undermines international commitments and legal obligations related to sustainable development, fisheries management, food security and poverty alleviation. This section provides an overview of United Nations and other relevant commitments to sustainable development, the right to food and labour rights.

### 6.1 The United Nations Sustainable Development Goals

In 2015, the United Nations General Assembly adopted the 2030 Agenda and the Sustainable Development Goals (SDGs)<sup>109,110</sup> including: End poverty (SDG1), end hunger, achieve food security and improved nutrition (SDG2), achieve gender equality and empower all women and girls (SDG5), ensure sustainable consumption and production patterns (SDG12) and conserve and sustainably use the oceans, seas and marine resources (SDG14).

SDG 14 on the sustainable use of oceans and marine resources calls for improvements in fisheries management including, *inter alia*, the following targets and indicators:

- **Target 14.4:** *By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.*
- **Target 14.6:** *By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation.*
- **Target 14.b:** *Provide access of small-scale artisanal fishers to marine resources and markets.*
- **Indicator 14.b.1:** *Progress by countries in the degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries.*

However, although progress can be observed by many countries on various SDGs, it is important to keep an overview of developments, as all the goals are closely interconnected. Focussing on some may have an adverse effect on achieving others. SDG 17, more specifically target 17.14, establishes policy coherence for sustainable development as a crucial means of achieving the agenda.<sup>111</sup> The lack of cross-sectoral policy coherence leads to adverse effects on

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<sup>109</sup> See [www.un.org/sustainabledevelopment/sustainable-development-goals/](https://www.un.org/sustainabledevelopment/sustainable-development-goals/)

<sup>110</sup> For background on the UN Sustainable Development Goals see <https://sustainabledevelopment.un.org/?menu=1300>

<sup>111</sup> UN SDG Partnership Platform. PCSD Partnership – A multi-stakeholder Partnership for Enhancing Policy Coherence for Sustainable Development. See <https://sustainabledevelopment.un.org/partnership/?p=12066>

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certain sectors which may be ranked by decision-makers as of lesser priority. The FAO SSF Guidelines also stress the need for policy coherence as a prerequisite to sustainable development.<sup>112</sup>

Pressure from other sectors, such as the development of gas and oil exploitation or tourism, often holds stronger political or economic influence and may represent a substantial economic benefit to the State.<sup>113</sup> This may come at the expense of the artisanal fishing sector in terms of impact on or loss of access to the resources on which they depend. Such negative impacts can also be observed when, through policy choices, the industrial fishing sector is favoured over the artisanal sector despite the fact that small-scale fisheries play a key role in ensuring food security and eradicating poverty.

It is essential that the objectives of national policies, for example those dealing with economic development and investments on the one hand, and those aimed at ensuring food security and conservation of marine resources on the other, are coherent. Encouraging investments or providing other incentives facilitating the establishment of fishmeal factories is a clear example of how the lack of coherence undermines the achievement of fundamental objectives of the 2030 Agenda SDGs.

In order to ensure cross-sectoral coherence at national, regional and international levels, it is of utmost importance to adopt a more integrated and long-term approach to policy-making. Potentially detrimental policy effects must be identified prior to implementation in order for their negative impact to be avoided or mitigated, and stakeholder participation throughout the decision-making processes must be ensured.

## 6.2 The right to food

### 6.2 (a) African Charter on Human and Peoples' Rights

Mauritania, Senegal and The Gambia are all State Parties to African Commission on Human and Peoples' Rights<sup>114</sup> (ACHPR) and have ratified all its binding legal instruments. Those include the African Charter on Human and Peoples' Rights<sup>115</sup> (Banjul Charter), the Protocol on the Rights of Women in Africa<sup>116</sup> (Maputo Protocol) and the African Charter on the Rights and Welfare of the Child.<sup>117</sup>

The African Charter on Human and Peoples' Rights recognises the right to life (Article 4), the right to health (Article 16) and the right to economic, social, and cultural development (Article 22). While it does not explicitly mention the

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<sup>112</sup> "10.1 States should recognize the need for and work towards policy coherence with regard to, inter alia: national legislation; international human rights law; other international instruments, including those related to indigenous peoples; economic development policies; energy, education, health and rural policies; environmental protection; food security and nutrition policies; labour and employment policies; trade policies; disaster risk management (DRM) and climate change adaptation (CCA) policies; fisheries access arrangements; and other fisheries sector policies, plans, actions and investments in order to promote holistic development in small-scale fishing communities. Special attention should be paid to ensuring gender equity and equality."

<sup>113</sup> FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries: "These other sectors can often have stronger political or economic influence, and they include: tourism, aquaculture, agriculture, energy, mining, industry and infrastructure developments."

<sup>114</sup> See [www.achpr.org](http://www.achpr.org)

<sup>115</sup> See [www.achpr.org/files/instruments/achpr/banjul\\_charter.pdf](http://www.achpr.org/files/instruments/achpr/banjul_charter.pdf)

<sup>116</sup> See [www.achpr.org/files/instruments/women-protocol/achpr\\_instr\\_proto\\_women\\_eng.pdf](http://www.achpr.org/files/instruments/women-protocol/achpr_instr_proto_women_eng.pdf)

<sup>117</sup> See [www.achpr.org/files/instruments/child/achpr\\_instr\\_charterchild\\_eng.pdf](http://www.achpr.org/files/instruments/child/achpr_instr_charterchild_eng.pdf)



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right to food, it is implicitly guaranteed in the Charter, and further elaborated in the principles and guidelines for its implementation.<sup>118</sup> These include State obligations, *inter alia*, to:

- *Take the necessary action to guarantee the right of everyone to be free from hunger and to mitigate and alleviate hunger even in times of natural or other disasters;*
- *Refrain from and protect against destruction and/or contamination of food sources;*
- *Prevent the destruction of natural resources of the country, in order to protect the right to food and health of future generations*

In a 2017 Resolution<sup>119</sup> on the Right to Food and Food Insecurity in Africa, the Commission urged Member States, *inter alia*, to:

- *Prioritize and support the most sustainable management and use of natural and other resources for food at the national, local and household levels;*
- *Participate in international and regional cooperation efforts and projects aimed at ensuring the right of everyone to be free from hunger in particular through equitable distribution of food supplies in relation to need and to those affected in situations of insecurity.*

## 6.2 (b) The UN Special Rapporteur report on fishery workers and the right to food

Published on 25 January 2019, the UN Special Rapporteur report on fishery workers and the right to food<sup>120</sup> describes the essential role played by fishery workers in ensuring food security and the right to food, and contributing to the attainment of SDGs 1, 2 and 14. Moreover, it recognises the enhanced vulnerability of groups on the basis of their gender, age and migration status, and that of indigenous and coastal communities. The report also describes the discrimination against women because of informal work arrangements, lack of social protection, harassment at work and income inequality.

The report highlights the multiple obstacles fishery workers face in the conduct of their activities, from regulatory hurdles to serious breach of human rights. States, international and regional organisations are reminded of their legal obligations:

**Paragraph 50:** *“States have the primary duty to respect, protect and promote the right to food and all the human rights of fishery workers under international human rights law. Consistent with international labour law and relevant international commitments, States should take all necessary measures, such as the adoption of laws, regulations, policies and programmes, to implement their international obligations towards all fishery workers.”*

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<sup>118</sup> Principles and Guidelines on the Implementation of Economic, Social and Cultural Rights in the African Charter on Human and Peoples’ Rights. Available at [www.achpr.org/files/instruments/economic-social-cultural/achpr\\_instr\\_guide\\_draft\\_esc\\_rights\\_eng.pdf](http://www.achpr.org/files/instruments/economic-social-cultural/achpr_instr_guide_draft_esc_rights_eng.pdf)

<sup>119</sup> ACHPR (2017) Res. 374 (LX). Available at [www.achpr.org/sessions/60th/resolutions/374](http://www.achpr.org/sessions/60th/resolutions/374)

<sup>120</sup> United Nations General Assembly. Human Rights Council Fortieth session. Right to food. Report of the Special Rapporteur on the right to food. Available at [http://ap.ohchr.org/documents/dpage\\_e.aspx?si=A/HRC/40/56](http://ap.ohchr.org/documents/dpage_e.aspx?si=A/HRC/40/56)

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The report also states that although aquaculture may play an important role in food production, it may “*pose threats to surrounding populations and ecosystems*” (para. 11). It highlights the problems facing small-scale and subsistence fishers who have to compete with industrial operations for access to resources and markets (para. 13). The report also stresses the need to include fishery workers in decision-making processes (para. 49).

In its conclusion and recommendations (para. 83, Rec. q-t) the report calls on States to:

- *fulfil their commitments with respect to SDGs 1, 2 and 14,*
- *fully implement the Voluntary Guidelines for Securing Sustainable Small-Scale fisheries,*
- *take drastic measures to prevent overfishing as well as illegal, unregulated and unreported fishing, and*
- *adopt measures to prevent, limit and combat the waste and discard of captured fish.*

## 6.3 Sustainable fisheries management

In order to fulfil the right to food and eliminate hunger, an indispensable prerequisite is to ensure the sustainable and equitable exploitation of marine resources. A number of instruments, both legally-binding and voluntary, provide for conservation and management measures which, if effectively implemented and enforced, will ensure the recovery and maintenance of fish stocks at levels at least those capable of producing the Maximum Sustainable Yield.

### 6.3 (a) The UN Convention on the Law of the Sea

The UN Convention on the Law of the Sea (UNCLOS)<sup>121</sup> lays the basis for States’ rights and obligations to conserve marine resources and manage their exploitation. In addition, for stocks occurring within the exclusive economic zones of two or more coastal States, UNCLOS Article 63 imposes the duty for States “*either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary to coordinate and ensure the conservation and development of such stocks*”.

To date, the States concerned have failed to effectively cooperate to that end and no decision-making regional body competent for the management of small pelagic fisheries (or any other fisheries) exists to fulfil that duty. The Fishery Committee for the Eastern Central Atlantic (CECAF)<sup>122</sup> and the Sub-Regional Fisheries Commission (SRFC)<sup>123</sup> are merely advisory bodies whose Member States have yet to fulfil their duties and commitment.

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<sup>121</sup> UNCLOS has been ratified by Morocco, Mauritania, Senegal and The Gambia as well as China, the EU and Vietnam. Available at [https://www.un.org/depts/los/convention\\_agreements/texts/unclos/UNCLOS-TOC.htm](https://www.un.org/depts/los/convention_agreements/texts/unclos/UNCLOS-TOC.htm)

<sup>122</sup> Fishery Committee for the Eastern Central Atlantic (CECAF). See [www.fao.org/fishery/rfb/cecaf/en](http://www.fao.org/fishery/rfb/cecaf/en)

<sup>123</sup> Sub-Regional Fisheries Commission (SRFC). See [www.spcsrp.org/en](http://www.spcsrp.org/en)

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### 6.3 (b) The 1995 United Nations Fish Stocks Agreement

The 1995 United Nations Fish Stocks Agreement (UN FSA)<sup>124</sup> specifically relates to straddling fish stocks and highly migratory fish stocks. The FSA represents the most progressive international legally-binding fisheries management instrument to date and can provide guidance in establishing conservation and management measures for shared small pelagic fish stocks. Senegal ratified the FSA in 1997, however Mauritania and The Gambia have not.

Management measures must be based on the best scientific evidence available, applying the precautionary approach in order to maintain fish stocks at levels capable of producing maximum sustainable yield, taking into account the interdependence of stocks. Management measures must be applied throughout the range of the stocks so that fishing activities by one or several countries, whether inside or outside EEZs, do not undermine conservation and management measures.

States are also required to adopt measures to prevent or eliminate overfishing and excess fishing capacity and to ensure that levels of fishing effort do not exceed those commensurate with the sustainable use of fishery resources, taking into account the interests of artisanal and subsistence fishers.

### 6.3 (c) The International Tribunal for the Law of the Sea (ITLOS) – Case N° 21

The focus of fisheries management is often primarily on the obligations of flag States – and mostly on distant water fishing States – with much less emphasis on the responsibilities of coastal States. However, although they may suffer from the consequences of illegal, unreported and unregulated (IUU) fishing by both national and third country fleets, coastal States often fail to meet their own responsibilities too.

On 28 March 2013, the Permanent Secretary of the SRFC transmitted to ITLOS a request for an advisory opinion on a number of issues, including:

*“What are the rights and obligations of the coastal State in ensuring the sustainable management of shared stocks and stocks of common interest, especially the small pelagic species and tuna?”*

The Advisory Opinion issued by the Court<sup>125</sup> emphasized that States exercising the right to exploit marine resources, both in their EEZs and elsewhere, must be in a position to fulfil the responsibilities and obligations which flow from such a right, namely to ensure that the exploitation of marine resources is sustainable. It clearly describes the multiple responsibilities of the coastal States.

As far as shared stocks are concerned, the ITLOS opinion reiterated that, under UNCLOS, the SRFC Member States have the obligation to:

- *cooperate, as appropriate, with the competent international organizations, whether subregional, regional or global, to ensure through proper conservation and management measures that the maintenance of the shared stocks in the exclusive economic zone is not endangered by over-exploitation;*

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<sup>124</sup> The UN Fish Stocks Agreement. Available at [www.un.org/Depts/los/convention\\_agreements/convention\\_overview\\_fish\\_stocks.htm](http://www.un.org/Depts/los/convention_agreements/convention_overview_fish_stocks.htm)

<sup>125</sup> International Tribunal on the Law of the Sea. Case N° 21. Advisory opinion of 2 April 2015 - Request for an advisory opinion submitted by the SRFC. Available at [www.itlos.org/fileadmin/itlos/documents/cases/case\\_no.21/advisory\\_opinion\\_published/2015\\_21-advop-E.pdf](http://www.itlos.org/fileadmin/itlos/documents/cases/case_no.21/advisory_opinion_published/2015_21-advop-E.pdf)

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- *in relation to the same stock or stocks of associated species which occur within the exclusive economic zones of two or more SRFC Member States, the obligation to “seek ... to agree upon the measures necessary to coordinate and ensure the conservation and development of such stocks;*

To comply with these obligations, the SRFC Member States must ensure that:

- *the maintenance of shared stocks, through conservation and management measures, is not endangered by over-exploitation;*
- *conservation and management measures are based on the best scientific evidence available to the SRFC Member States and, when such evidence is insufficient, they must apply the precautionary approach;*
- *conservation and management measures are designed to maintain or restore stocks at levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors, including the economic needs of coastal fishing communities and the special needs of the SRFC Member States, taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether subregional, regional or global. [emphasis added]*

Such measures shall:

- *take into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened;*
- *provide for exchange on a regular basis through competent international organizations, of available scientific information, catch and fishing effort statistics, and other data relevant to the conservation of shared stocks.*

### 6.3 (d) The FAO Code of Conduct for Responsible Fisheries

Although the FAO Code of Conduct for Responsible Fisheries<sup>126</sup> is not a legally binding instrument, it was the result of long negotiations among States and it does establish, in paragraph 6.2, standards for sustainable management in the context of food security, poverty alleviation and sustainable development that States are expected to implement at national and (sub-)regional levels. They are regarded as minimum standards that must be considered under article 61, paragraph 3 of UNCLOS.

Particularly relevant in the case of small pelagic fish stocks, the FAO Code of Conduct stresses again the need for all States to cooperate to ensure the effective conservation of transboundary fish stocks, including both target species and species belonging to the same ecosystem or associated with or dependent upon the target species.

The Code also raises the issue of equitable access to resources. Conservation and management measures are expected to take into account *“the interests of fishers, including those engaged in subsistence, small-scale and*

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<sup>126</sup> FAO (1995). Code of Conduct for Responsible Fisheries. See <http://www.fao.org/fishery/code/en>

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*artisanal fisheries*” (paragraph 7.2.2 c) as well as, in deciding on the use, conservation and management of fisheries resources, to give due recognition to *“the traditional practices, needs and interests of indigenous people and local fishing communities which are highly dependent on fishery resources for their livelihood”* (paragraph 7.6.6).

In October 2017, the FAO Subcommittee on Aquaculture<sup>127</sup> noted that *“the expanding demand for animal products has led to increasing demand for animal feed that requires more land. Similarly, the culture of high-value aquatic carnivorous species has increased the demand for fish feed, which adds to the already high pressure on wild fish stocks”* (paragraph 16). In addressing the implementation of the ecosystem approach to aquaculture, the FAO notes that *“the negative effects of aquaculture often include increasing demands on fisheries for fishmeal/oil, major constituents of carnivorous/omnivorous species feeds”*.<sup>128</sup>



*Two boys hold small pelagic fish in Fass Boye, Senegal  
© Elodie Martial / Greenpeace*

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<sup>127</sup> FAO Committee on Fisheries. Subcommittee on Aquaculture (2017). Aquaculture, the SDGs/agenda 2030 and FAO’s common vision for sustainable food and agriculture. Available at [www.fao.org/cofi/30794-011acfda6d140b8ede06f0b184c8e5fd4.pdf](http://www.fao.org/cofi/30794-011acfda6d140b8ede06f0b184c8e5fd4.pdf)

<sup>128</sup> FAO Technical Guidelines for Responsible Fisheries (2010). Aquaculture development. Ecosystem approach to aquaculture. Available at [www.fao.org/3/i1750e/i1750e00.htm](http://www.fao.org/3/i1750e/i1750e00.htm)



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## 7 Solving the overfishing crisis: *The need for regional fisheries management*

International law requires cooperation among States for management measures regulating the exploitation of shared stocks, as emphasised by the ITLOS Advisory Opinion mentioned above. Yet recommendations from the two relevant fisheries bodies in the region have been very poorly implemented, and they have no decision-making power to adopt legally binding management measures. This is a major obstacle to the sustainable management of fisheries in the region.

### 7.1 The Sub-Regional Fisheries Commission

The mandate of the Sub-Regional Fisheries Commission (SRFC) is to strengthen regional cooperation to enhance the sustainable management of fisheries resources including through the harmonisation of its Member States' fisheries legislations and policies. More than 30 years after its creation, much remains to be done. For instance, the 2012 Convention on minimum conditions of access<sup>129</sup> is applicable to the maritime area under the jurisdiction of the SRFC Member States, but has yet to be fully implemented throughout the region.

Some progress can be observed as national fisheries laws are revised to include internationally-adopted principles such as ecosystem-based and precautionary approaches, as well as other provisions and definitions. But a fully-fledged regional management regime has yet to emerge.<sup>130</sup>

It is important to remember that the SRFC has been given no decision-making power for either fisheries management measures or for the allocation of access to resources, with the inevitable consequences of overfishing and depleted stocks. Responsibility for this situation rests with the Member States.

### 7.2 The Fishery Committee for the Eastern Central Atlantic

The purpose of the Fishery Committee for the Eastern Central Atlantic (CECAF)<sup>131</sup> is to support the sustainable use of living marine resources in its area of competence. It is another regional body, set up under the FAO, with no management decision-making power. The Committee and Scientific Sub-Committee meet irregularly. Moreover, it suffers from a serious deficit of data required for stock assessments, which are to be provided by its Member States, rendering its advisory function ineffective. Although the matter has been discussed several times, many CECAF Member States do not support amending its statutes to transform it into a decision-making body where binding

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<sup>129</sup> Convention on the Determination of the Minimal Conditions for Access and Exploitation of Marine Resources within the maritime areas under the jurisdiction of the SRFC's Member States. Available at [www.itlos.org/fileadmin/itlos/documents/cases/case\\_no.21/Convention\\_CMA\\_ENG.pdf](http://www.itlos.org/fileadmin/itlos/documents/cases/case_no.21/Convention_CMA_ENG.pdf)

<sup>130</sup> Action Document for improved regional fisheries governance in Western Africa (PESCAO). Available at [https://ec.europa.eu/europeaid/sites/devco/files/annual-action-fiche-west-africa-fisheries-2017\\_en.pdf](https://ec.europa.eu/europeaid/sites/devco/files/annual-action-fiche-west-africa-fisheries-2017_en.pdf)

<sup>131</sup> CECAF has no decision making power but it is the only regional organisation for non-tuna species where coastal states and DWF states, as well as countries engaged in scientific and other cooperation programmes, are present and where compiled scientific data and evaluations are made available. [www.fao.org/fishery/rfb/cecaf/en](http://www.fao.org/fishery/rfb/cecaf/en)

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management measures could be adopted, as was the case with the General Fisheries Commission for the Mediterranean.

### 7.3 Pan-African and regional fisheries policies

Various groupings of African States, including the African Union, the West African Economic and Monetary Union (WAEMU) and Economic Community of West African States (ECOWAS), have adopted fisheries policies. These call for regional cooperation to ensure the sustainable management of fisheries at regional level, including harmonisation of fisheries legislation and strengthening the contribution of small-scale fisheries to poverty alleviation and food security. However, given their overlapping jurisdictions and lack of clear legal responsibility for fisheries issues, these policies may represent a challenge in terms of coherence and harmonisation of fisheries regimes. In any case, the ultimate management responsibility lies with the relevant States, whether in their role as coastal or flag States, acting through regional management bodies with decision-making capabilities. Failure to coordinate fisheries management regionally is contrary to international law as emphasised by ITLOS.



*Fishers depart from Mar Lodj fishing village in Senegal to collect seafood  
© Clément Tardif / Greenpeace*

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## 8 Conclusions and recommendations

The serious socio-economic and environmental impacts described in this report are primarily caused by the over-exploitation and depletion of small pelagic fish stocks, and exacerbated by the rapidly increasing diversion of catches from human consumption to the production of fishmeal and fish oil for export. States exploiting these stocks and producing FMFO must take decisive action.

It is critical to reduce the intensity of fishing in the region to environmentally sustainable levels and ensure that it first and foremost meets the needs of local populations and fishing communities in terms of food security and sustainable livelihoods. Such action has been called for many times in the past and must now be urgently translated into concrete measures.

Greenpeace makes the following recommendations to fully implement existing regional and international commitments and obligations, and take further urgent steps to allow the recovery of fish stocks and ensure that they continue to contribute to food security and support livelihoods in the region.

### 8.1 Mauritania, Senegal and The Gambia

These coastal States must:

- Phase out any fishmeal production using fish fit for direct human consumption, based on its negative environmental, social and economic impacts.
- Adapt remaining fishmeal production capacity to levels commensurate with available amounts of fish offal or fish unfit for human consumption.
- Encourage reconversion of fishmeal and fish oil processing capacity towards products for direct human consumption.
- Support artisanal fishery processing and trade for local and regional markets.
- Implement the provisions of the SRFC 2012 Convention on Minimal Conditions for Access and the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries at national and regional levels.

In cooperation with all States involved in fisheries in the region, these States should establish an effective regional management regime, in particular for the exploitation of shared stocks such as small pelagic fish, as required under International law, relevant national laws, pan-African and regional fisheries policies and other instruments.

Coastal States must ensure that the exploitation of marine resources is both environmentally sustainable in the long-term and socially beneficial and equitable by:

- Implementing a precautionary and an ecosystem-based approach.
- Ensuring that TAC/catches are within safe biological limits.
- Urgently adopting management plans at national as well as regional level for shared resources such as small pelagic fish stocks.

- Ensuring fishing fleets' capacity and effort are in balance with available resources to stop or prevent over-exploitation and eliminate excess capacity.<sup>132</sup>
- Adopting an allocation mechanism for access to resources, based on transparent environmental and social criteria,<sup>133</sup> that grants preferential access to operators who fish in the most environmentally and socially beneficial and equitable manner.
- Making available appropriate financing and resources for data collection and scientific research as a fundamental pillar of national and regional fisheries management.
- Ensuring meaningful and timely participation and consultation involving all stakeholders and civil society in policy choices and fishing and fisheries-related developments.
- Ensuring transparency and access to information on, *inter alia*:
  - *the list of fishing vessels (both artisanal and industrial) authorised to fish in each country's waters, as well as a sub-regional list. Lists must be updated regularly and include each vessel's name, ownership, registration number, call sign, nationality, gear type and capacity characteristics as set out by the FAO<sup>134</sup> as well as target species and conditions of fishing licences and authorisations;*
  - *reliable data on stock status, catches/landings;*
  - *the list of processing and other fisheries related facilities, including ownership, input and output quantities and composition, socio-economic contribution, environmental impact assessments;*
  - *reliable trade and export data.*

The above information should be publicly available and maintained up to date. Greenpeace recommends that in order to put in place such reporting systems, Senegal and The Gambia should join the Fisheries Transparency Initiative (FiTI),<sup>135</sup> of which Mauritania is already a member, and implement its standards and reporting process.

## 8.2 Flag States and States of beneficial ownership

States involved in the exploitation of small pelagic fish stocks in Mauritania, Senegal and The Gambia should support coastal States to fulfil their commitments and obligations, notably concerning sustainable fisheries management and food security, by:

- ensuring fishing activities by vessels flying their flag and/or their nationals:
  - *are environmentally sustainable in the long-term and that fish stocks are maintained or restored above levels capable of producing MSY;*
  - *only catch surplus within the total allowable catch, identified in a transparent manner on the basis of the best available scientific advice, taking into account the total fishing effort on the stocks by all fleets;*
  - *strictly comply with all applicable laws and regulations;*
  - *are subject to dissuasive sanctions in cases of non-compliance.*

<sup>132</sup> Article 5(h) of the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10<sup>th</sup> December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. Available at [www.un.org/depts/los/convention\\_agreements/texts/fish\\_stocks\\_agreement/CONF164\\_37.htm](http://www.un.org/depts/los/convention_agreements/texts/fish_stocks_agreement/CONF164_37.htm)

<sup>133</sup> Greenpeace International (2009) Greenpeace Criteria for Sustainable Fisheries Available at [www.greenpeace.org/international/en/publications/reports/criteria-sustainable-fisheries](http://www.greenpeace.org/international/en/publications/reports/criteria-sustainable-fisheries)

<sup>134</sup> See [www.fao.org/3/Y5027E/y5027e05.htm#bm05.1.1](http://www.fao.org/3/Y5027E/y5027e05.htm#bm05.1.1)

<sup>135</sup> See <http://fisheriestransparency.org/>

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- providing accurate and timely data on:
    - *vessel identification (including ownership, registration number and call sign) and technical characteristics;*
    - *quantities and composition of catch and bycatch.*
  - Maximising their contribution to food security, employment, poverty reduction, increased income and improved social stability of fishing communities.

## 8.3 Market States

States importing fishmeal and fish oil from Mauritania, Senegal and The Gambia should:

- Stop importing FMFO produced using fish fit for human consumption.
- Require full traceability based on strict monitoring and control of processing facilities.
- Require all imported products to comply with the highest fisheries management, conservation, social and labour standards.

## 8.4 All States

All States should:

- Redirect financial support toward measures to ensure sustainable and equitable fisheries and fisheries-related activities in accordance with the Principles for Responsible Investment in Agriculture and Food Systems and the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries
- Ratify/accede to and implement all relevant international legal instruments, namely:
  - The UN Convention on the Law of the Sea;
  - The 1995 UN Fish Stocks Agreement;
  - The FAO Compliance Agreement;
  - The FAO Agreement on Port State Measures.
  - The FAO International Plan of Action for the Management of Fishing Capacity;
  - The FAO 1995 Code of Conduct for Responsible Fisheries;
  - The FAO International Plan of Action to Prevent, Deter and Eliminate IUU Fishing.



*Senegalese artisanal fishing pirogue going to sea*  
© Elodie Martial / Greenpeace



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## Appendix 1: An overview of national legislation

### Mauritania

In 2015, Mauritania adopted the national strategic plan for the responsible management and sustainable development of fisheries and maritime economy (2015-2019).<sup>136</sup> Its objectives are to protect marine resources, the marine environment and ecosystems, integrate the fisheries sector in the national economy and equitably share revenues. It also aims to strengthen sub-regional cooperation for a coordinated management for shared stocks.

The Mauritanian fisheries law is based on two main pieces of legislation: The Maritime Fisheries Code<sup>137</sup> and an Implementing Decree<sup>138</sup> which were revised in 2015.

Main principles and tools include:

- The obligation for the State to manage the exploitation of marine resources in the interest of the national collectivity (Fisheries Code Article 3)
- The precautionary principle (Fisheries Code Article 9)
- Management tools include TACs and management plans (Fisheries Code Title 1)

Management plans (Fisheries code - Articles 14-19)

Article 19 includes a reference to shared stocks and regional management whereby the fisheries Minister must coordinate with relevant national fisheries authorities and sub-regional fisheries organisations in order to harmonise national management plans.

According to the Implementing Decree (Articles 2-6), management plans are to be developed based on scientific advice and involving fisheries stakeholders and civil society representatives. Article 36 prohibits catching, keeping on board, buying, selling, transporting and using undersized fish including for the production of fishmeal.

### Senegal

Senegal's main legislation, the Fisheries Code, was revised and a new text promulgated on 13 July 2015.<sup>139</sup> The revised implementing decree was promulgated on 22 November 2016.<sup>140</sup>

Major principles in fisheries management have been included in the new Fisheries Code including the precautionary approach. It establishes that the State has the responsibility "to protect, conserve, ensure the sustainable

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<sup>136</sup> See [www.peches.gov.mr/IMG/pdf/arrtestratgiempem1518.pdf](http://www.peches.gov.mr/IMG/pdf/arrtestratgiempem1518.pdf) and [www.peches.gov.mr/IMG/pdf/plan\\_d\\_actions\\_strategie\\_mpem\\_2015-2019.pdf](http://www.peches.gov.mr/IMG/pdf/plan_d_actions_strategie_mpem_2015-2019.pdf)

<sup>137</sup> See [www.peches.gov.mr/IMG/pdf/code\\_peches\\_2015-017\\_fr\\_version\\_finale\\_scannee.pdf](http://www.peches.gov.mr/IMG/pdf/code_peches_2015-017_fr_version_finale_scannee.pdf) Loi n°2015-017 du 29 juillet 2015 portant code des pêches

<sup>138</sup> See [www.peches.gov.mr/IMG/pdf/dcret\\_2015-159\\_application\\_loi\\_017-2015\\_portant\\_code\\_des\\_pches\\_\\_01102015.pdf](http://www.peches.gov.mr/IMG/pdf/dcret_2015-159_application_loi_017-2015_portant_code_des_pches__01102015.pdf) Décret 2015-159 portant application de la loi n°2015-017 du 29 juillet 2015 portant code des pêches

<sup>139</sup> See [www.fao.org/faolex/results/details/en/c/LEX-FAOC155049](http://www.fao.org/faolex/results/details/en/c/LEX-FAOC155049)

<sup>140</sup> Décret 2016-1804 portant application de la loi nr 2015-18 du 13 juillet 2015 portant Code de la Pêche maritime. Available at [www.fao.org/faolex/results/details/en/c/LEX-FAOC163863](http://www.fao.org/faolex/results/details/en/c/LEX-FAOC163863)

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exploitation [of fisheries resources] in order to preserve the marine ecosystem”, applying a precautionary approach (Fisheries Code Article 4).

Under the Fisheries Code, management and conservation measures must be:

- Ecosystem-based (Article 14) in order to ensure the viability of species and critical habitats for the renewal of fisheries resources and increase fisheries productivity.
- Science-based (Article 15) involving other services, professional organisations, fishing communities and possibly other stakeholders.

Management plans (Article 13) must:

- Consider fisheries as one or more groups of fish stocks considered as a unit based on geographical, economic, social, scientific, technical characteristics, for conservation and management purposes;
- Specify management objectives and measures, total allowable catches or optimum effort,<sup>141</sup> licensing/authorisation conditions and criteria for national and foreign vessels.
- Be compatible with other regulations on the marine environment (e.g. the Environment Code).<sup>142</sup>

Despite the fact that the sectoral policy clearly identifies excess fishing capacity as a major issue and sets out commitments to address it, there is still no fishing capacity or effort management mechanism to speak of, apart from some measures limiting artisanal fishing boats’ registration<sup>143</sup> and certain categories of industrial fishing licenses.<sup>144</sup>

One of the most worrying changes in policy in the revised Fisheries Code concerns the development of fishing sectors (Article 24). The 1998 Code stated that the State supports the development of artisanal fishing considering its socio-economic importance and its contribution to poverty reduction, food sovereignty and growth. However, during the revision of the Code, a second paragraph was added to also favour the development of industrial fishing due to its socio-economic importance through “appropriate means”. In a situation of full- to over-exploitation, it begs the question of how this may be achieved without jeopardising measures to ensure sustainable artisanal fishing.

Regarding international cooperation, Article 25 states that Senegal participates in (sub)regional and international bodies to negotiate international agreements and other measures such as joint management, harmonisation/coordination management systems, determining access conditions and coordinated MCS.

## The Gambia

The Gambia’s Fisheries Policy of 2006 overall goal is to “*promote a thriving fisheries sector, encourage responsible fishing and fish utilization practices, and sustainable development of fisheries for food security and poverty reduction in The Gambia*”. Its objectives include:

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<sup>141</sup> Defining optimum effort implies knowing precise fleet composition and main characteristics of vessels and gears.

<sup>142</sup> Senegal Environment Code. Available at <https://www.sec.gouv.sn/code-de-l-environnement>

<sup>143</sup> Decree No. 006397 of 29 August 2012.

<sup>144</sup> Decree No. 5166 of 8 August 2006.

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- Rational and long-term utilisation of the marine and inland fisheries resources;
  - Improve nutritional standards of the population;
  - Increase employment opportunities in the sector;
  - Strengthen regional and international collaboration in the sustainable exploitation, management and conservation of shared stocks and shared water bodies;
  - Promote bio-diversity maintenance and enhancement and prevent environmental degradation.

The Fisheries Act 2007<sup>145</sup> and the Fisheries Regulations 2008<sup>146</sup> contain management provisions, including fisheries conservation, management and development measures, further supported by the Fisheries (Amendment) Regulations 2017 and the Fisheries and Aquaculture Sector Strategy 2017 – 2020.



*Women at the fishing port of Kafountine, Senegal  
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<sup>145</sup> The Gambia: Fisheries Act, 2007. Available at [www.fao.org/faolex/results/details/en/c/LEX-FAOC077403](http://www.fao.org/faolex/results/details/en/c/LEX-FAOC077403)

<sup>146</sup> See <http://www.fao.org/faolex/results/details/en/c/LEX-FAOC177699>

## Appendix 2: Operational status of fishmeal and fish oil factories in Mauritania, Senegal and The Gambia in March 2019

FACTORY NAME	STATUS	LATITUDE North	LONGITUDE West	LOCALITY
<b>MAURITANIA</b>				
AUSSIE GROUP	ACTIVE	20° 54' 43.758"	- 17° 1' 58.8612"	NOUADHIBOU
OMAUICI SA	ACTIVE	20° 54' 37.1448"	- 17° 2' 14.0388"	NOUADHIBOU
ALFA SERVICE LIMITED SARL	ACTIVE	20° 54' 51.3"	-17° 01' 40.7"	NOUADHIBOU
SOMAESP SARL	TEMPORARILY INACTIVE	20° 54' 47.31	-17° 1' 50.41	NOUADHIBOU
RIM FISH MEAL	ACTIVE	20° 54' 47.8116"	- 17° 1' 49.0332"	NOUADHIBOU
MAH EL TURK SARL	ACTIVE	20° 54' 42.9948"	- 17° 2' 0.4596"	NOUADHIBOU
XIANGHESHUN-MAURITANIE SA	ACTIVE	20° 54' 46.8756"	- 17° 1' 52.3452"	NOUADHIBOU
LEMSEAFOOD	ACTIVE	20° 54' 46.206"	- 17° 1' 53.9616"	NOUADHIBOU
ATYFEN (Atlantic Yufen)	ACTIVE	20° 54' 52.8516	- 17° 1' 38.0208"	NOUADHIBOU
SINO-RIM	ACTIVE	20° 54' 50.31"	- 17° 1' 43.4928"	NOUADHIBOU
AFRICA PROTEINE	ACTIVE	20° 54' 49.9788"	- 17° 1' 44.1768"	NOUADHIBOU
MAURITANIA FISHMEAL SARL	ACTIVE	20° 54' 39.9708"	- 17° 2' 7.386"	NOUADHIBOU
CONTINENTAL SEA FOOD SA	ACTIVE	20° 54' 47.0016"	- 17° 1' 51.9276"	NOUADHIBOU
MIMOA PECHE FARINE ET HUILE	ACTIVE	20° 54' 48.7188"	- 17° 1' 46.9488"	NOUADHIBOU
SFHP SARL	ACTIVE	20° 54' 49.2984"	- 17° 1' 45.8328"	NOUADHIBOU
OCEAN PROTEINE	ACTIVE	20° 54' 48.8232"	- 17° 1' 47.5284"	NOUADHIBOU
ATLANTIC PROTEINE	ACTIVE	20° 54' 49.6404"	- 17° 1' 45.5196"	NOUADHIBOU
COMAPECHE	ACTIVE	20° 54' 44.51	- 17° 1'56.61	NOUADHIBOU
MOUHIT AL BARAKA	ACTIVE	20° 54' 51.9"	- 17° 01' 40.5"	NOUADHIBOU
ATLANTIC PECHE	ACTIVE	20° 54' 42.4224"	- 17° 2' 1.9536"	NOUADHIBOU
SICOP INDUSTRIE SA	ACTIVE	20° 54' 41.292"	- 17° 2' 4.542"	NOUADHIBOU
SMPC SARL	ACTIVE	20° 54' 47.6"	- 17° 1' 50.7"	NOUADHIBOU
HONGDONG INTERNATIONAL FISHERY DEVELOPMENT FARINE ET HUILE	ACTIVE	20° 53' 27.85"	- 17° 3' 33.18"	NOUADHIBOU
OLVEA ATLANTIC	ACTIVE	20° 54' 59.6592"	- 17° 2' 24.9108"	NOUADHIBOU
COFRIMA PROTEINE SARL	ACTIVE	20° 54' 46.0"	- 17° 1' 53.42"	NOUADHIBOU
MCF SARL	ACTIVE	20° 54' 53.7408"	- 17° 1' 34.6908"	NOUADHIBOU

SOREC SA (SUNRISE OCEANIC RESSOURCES EXPLOITATION COMPANY SA)	ACTIVE	20° 51' 57.2868"	- 17° 2' 52.4832"	NOUADHIBOU
FIMOL SARL	TEMPORARILY INACTIVE	17° 45' 31.4388"	- 16° 2' 29.4"	NOUAKCHOTT
MTP FISH SARL	TEMPORARILY INACTIVE	17° 45' 8.3988"	- 16° 2' 29.94"	NOUAKCHOTT
SMVP SA	ACTIVE	17° 45' 33.66"	- 16° 2' 33.9"	NOUAKCHOTT
MOCV SARL	TEMPORARILY INACTIVE	17° 45' 16.6212"	- 16° 2' 29.6412"	NOUAKCHOTT
MOUMENA FISHING	ACTIVE	17° 45' 20.2788"	- 16° 2' 29.5188"	NOUAKCHOTT
MAURITANIA BUSINESS SARL	ACTIVE	17° 45' 11.6388"	- 16° 2' 35.34"	NOUAKCHOTT
SAHARA PECHE SARL	TEMPORARILY INACTIVE	17° 45' 2.4012"	- 16° 2' 34.5588"	NOUAKCHOTT
JIN ZHUANG FISHING	TEMPORARILY INACTIVE	17° 45' 4.2588"	- 16° 2' 29.22"	NOUAKCHOTT
PROTEINE SEA FOOD SARL FARINE & HUILE	ACTIVE	17° 45' 5.4612"	- 16° 2' 35.88"	NOUAKCHOTT
INCHIRI ENTREPRENARIAT FARINE & HUILE	ACTIVE	17° 45' 12.1212"	- 16° 2' 22.74"	NOUAKCHOTT
NOT_IDENTIFIED	ACTIVE	17° 44' 35.2212"	- 16° 2' 29.4612"	NOUAKCHOTT
NOT_IDENTIFIED	ACTIVE	17° 45' 27.1188"	- 16° 2' 22.1388"	NOUAKCHOTT
<b>SENEGAL</b>				
SEA PRODUCTION	ACTIVE	15° 57' 45.2016"	- 16° 29' 26.4516"	SAINT LOUIS
BARNA SENEGAL	UNDER CONSTRUCTION	14° 53' 52.3212"	- 17° 7' 37.1208"	CAYAR
AFRIC AZOTE	ACTIVE	14° 41' 52.5696"	- 17° 25' 28.9884"	DAKAR
SENEGAL PROTEIN	TEMPORARILY INACTIVE	14° 41' 3.5916"	- 17° 26' 9.2004"	DAKAR
AFRICA FEED	ACTIVE	14° 41' 50.3016"	- 17° 9' 26.8596"	YENNE
OMEGA PELAGIC	UNDER CONSTRUCTION	14° 26' 6.9792"	- 16° 48' 34.5492"	SANDIARA
OMEGA FISHING	ACTIVE	14° 11' 3.3288"	- 16° 51' 37.7496"	JOAL
SOCIÉTÉ DES PRODUITS HALIEUTIQUES (SPH SARL)	TEMPORARILY INACTIVE	12° 59' 45.1608"	- 16° 44' 15.3384"	ABENE
<b>THE GAMBIA</b>				
NESSIM	ACTIVE	13° 15' 51.75122"	- 16° 47' 20.56052"	SANYANG
GOLDEN LEAD IMPORT/EXPORT (ATLANTIC FISHMEAL)	ACTIVE	13° 9' 14.32462"	- 16° 46' 43.9572"	GUNJUR
JXYG	ACTIVE	13° 4' 21.33228"	- 16° 45' 8.84232"	KARTONG





## **A WASTE OF FISH**

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Otto Heldringstraat 5  
1066 AZ Amsterdam  
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Tel: +31 20 718 2000  
Email: [info.int@greenpeace.org](mailto:info.int@greenpeace.org)

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Artisanal fishing pirogues  
on a beach in Kayar, Senegal

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