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The development of a fishmeal industry in Mauritania and its impact on the regional stocks of sardinella and other small pelagics in Northwest Africa

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ABSTRACT

Mauritania has recently developed a fishmeal industry based on small pelagics. The fish are caught by Senegalese canoes that work under charter for the fishmeal factories, most of which are situated in the northern port of Nouadhibou. After a slow start in 2005–2010, the industry showed a strong development after 2010 as the result of high prices for fishmeal and oil. Catches of small pelagics landed for fishmeal increased from 50,000 t in 2011 to 240,000 t in 2014. Because new factories were still being built by the end of 2014, a further expansion of the catches used for fishmeal is expected. Data are presented on the species composition of the catches for fishmeal, and the length distribution of the individual species. It is shown that the catches consist of round sardinella (*Sardinella aurita*), flat sardinella (*S. maderensis*), and bonga (*Ethmalosa fimbriata*). Changes in species composition and length composition from 2012 to 2014 may indicate different responses of the coastal stocks of small pelagics to the increased fishing pressure. Some of the species exploited for fishmeal belong to regional stocks that are shared with neighbouring countries. The paper discusses the potential effects of the expanding fishmeal industry in Mauritania on these regional stocks.

1. Introduction

1.1. The history of fishmeal in Mauritania

The first attempts to use small pelagics for fishmeal in Mauritania date back to 1965 when the first shore-based fishmeal plant (SOMIP) was opened in Nouadhibou (IMROP, 2011). Due to high production costs and low fishmeal prices, this operation was not successful and the plant was closed in 1974. Other plants that were opened in the early 1970s were not successful either, and all shore-based fishmeal plants were closed by the end of the 1970s (Ould Tarbiya and Ould Mohamedou, 2012).

After a lapse of 25 years, the shore-based production of fishmeal in Nouadhibou was resumed in 2005 by the construction of the RIM fishmeal plant. This plant used offal from a local factory that processed sardinella for human consumption. Until the opening of the fishmeal plant, the offal from this processing had been dumped in the desert outside the town, where it constituted a breeding place for flies. The opening of the first fishmeal plant in 2005 was therefore welcomed by the inhabitants of Nouadhibou as a contribution to a cleaner and healthier environment.

When it turned out that the first fishmeal plant made a nice profit, other investors followed suit and the number of fishmeal plants in Nouadhibou gradually increased. The real growth of the fishmeal industry started in 2011 when the city council allocated a new area ("El Bountiya") to industrial developments in the fishery sector. As a result of high prices for fishmeal and oil, the interest from investors was large and within a short time some 20 new authorisations for the construction of fishmeal plants were issued.

The offal from the only local processing plant was of course not sufficient to provide raw material to all the new fishmeal factories, so artisanal fishermen from Senegal were contracted to come to Nouadhibou and catch fresh fish for the fishmeal factories.

1.2. Development of the fishmeal industry in line with government policy

The Mauritanian government put no restrictions on the expanding fishmeal industry because the development of a shore based industry was in line with the government policy of "domestica-

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tion" of the pelagic sector. In previous years, the small pelagics in Mauritania had been exploited nearly exclusively by foreign factory trawlers. Although this fishery brought in revenues for the government in the form of licence fees, its contribution in terms of local employment was limited. With the development of a shore based industry, it was hoped that a larger part of the wealth from the pelagic resources would accrue to the Mauritanian people (IMROP, 2011).

At a workshop organised by the Mauritanian fisheries research institute IMROP in 2010, it was concluded that the potential annual catch of small pelagics in Mauritania would be around 1 million t/yr (IMROP, 2010). This estimated was based on the total landings by all fleets combined (mainly foreign industrial trawlers) in the previous years. An international conference on fishmeal at IMROP in 2011 concluded that only a small proportion of this potential would be needed for human consumption in Mauritania. If domestic fish consumption would be brought at the target level of 15 kg/capita/yr, the Mauritanian population of 3 million people would need only 45,000 t/yr for human consumption (IMROP, 2011). The vast majority of the available potential could thus be used for other purposes, and the production of fishmeal was considered as one of the methods to utilise this surplus potential (IMROP, 2011).[1]

The utilisation of small pelagics for fishmeal was further justified by the fact that some of the species in this category, such as the bonga, anchovy and flat sardinella, were not used for human consumption in Mauritania. For flat sardinella, it was assumed that a large unexploited stock existed in the coastal waters of Mauritania, and that the potential yield of this stock might be equal or even superior to that of the round sardinella (IMROP, 2010).

1.3. More room for the fishmeal industry created by a reduction of foreign fishing effort

Until 2012, by far the largest share of the catch of small pelagics in Mauritania was taken by long-distance trawlers from the European Union (EU), Russia, and a large number of other countries. In a new agreement concluded between Mauritania and the EU in 2012, the coastal zone forbidden for EU pelagic trawlers was extended from 13 to 20 nautical miles. This regulation was later also applied to trawlers from other nations (Corten, 2014). This new regulation imposed on the foreign industrial trawlers strongly reduced the accessibility of coastal small pelagics, in particular sardinella, to this fleet. As a result, a substantial number of foreign pelagic trawlers left the area, and catches of sardinella by this fleet dropped sharply. This drop in catches by foreign vessels created more room for the expansion of the local fishmeal industry.

1.4. Possible effects on the regional stocks of small pelagics

Although the Mauritanian government has developed in 2013 a management plan for small pelagics, this plan so far has not been implemented. As a consequence, there are no ceilings on the landings of the different segments of the pelagic industry, including the fishmeal sector. Although the total landings of small pelagics in Mauritania showed a drop after 2012 as a result of the departure of foreign pelagic trawlers, the national fish meal industry has now taken over the place of the foreign trawlers, and it is still expanding. The question, therefore, is what the potential effect of a further growth of the fishmeal industry may be on the stocks of small pelagics, especially those that are shared with other countries in the region.

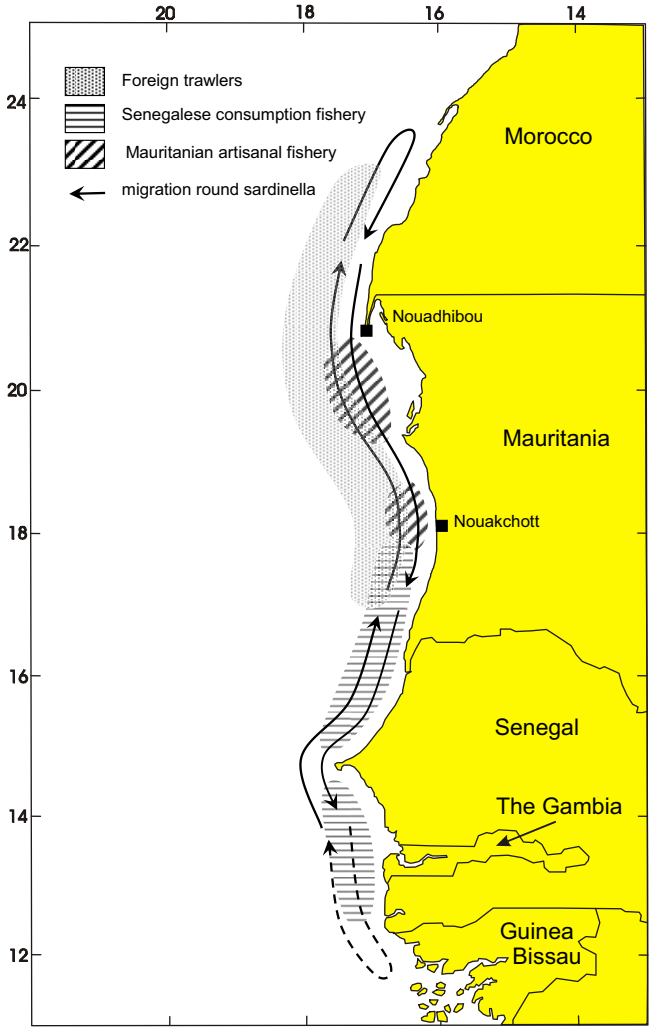

Fig. 1. Presumed migration path of round sardinella, based on Boely et al. (1982); and the fishing area of different fleets exploiting the species. The Mauritanian artisanal fisheries are conducted mainly by Senegalese canoes that operate from Mauritanian ports. Their catches are predominantly used for fishmeal. The southern limit of the presumed regional stock is not clearly defined, as is indicated by the hatched arrows.

In this respect, the species of the greatest interest is the round sardinella (*S. aurita*). This species is supposed to constitute one regional stock that migrates back and forth between Senegal and Morocco (FAO, 2013). Fig. 1 illustrates the presumed annual migration path of this stock and the sardinella fisheries in the various parts of its distribution area. The FAO Working Group on Small Pelagic Fish in Northwest Africa (hereafter called the FAO working group) assumes that all round sardinella in northwest Africa belong to this regional stock, and it conducts its annual assessment for the whole of the area (FAO, 2013). If this hypothesis of one stock in northwest Africa is correct, a further expansion of sardinella catches in Mauritania would affect this regional stock, and thereby the fisheries in neighbouring countries.

The purpose of this paper is to describe the recent growth of the fishmeal industry in Mauritania and to present biological data collected in 2012-14 on catches used for fishmeal. On the basis of this information, the possible impact of a further growth of the Mauritanian fishmeal industry on the regional stocks of small pelagics will be discussed.

[1] This argument ignored the fact that some stocks of small pelagics, in particular the round sardinella, are shared with neighbouring Senegal, and that sardinella is very important for human consumption in this country (Failler, 2014).