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The exploitation of small pelagics fish in Gambia: What valorization policies?

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Abstract
The objective of this article is to present a reflection on the valorisation of small pelagic in the Gambia from a mapping of the sector integrating landings, imports and exports, and local market supply. This mapping made it possible to determine the contribution of small pelagic to national food security, job creation, and finally the country's trade surplus in fishery products. Thus, the method consisted in building a database (production - consumption and foreign trade) over a height-year series (2013 - 2020) of the three most landed pelagic species (Bonga, the round and flat sardinella). These data were obtained from fishing statistics provided by The Gambia Fisheries Department - GFD. In terms of production, 85% of the stocks of small pelagic are landed fresh by artisanal canoes, and the remaining 15% come from the coastal and industrial fleet with almost non-existent imports. In addition, small pelagic are mainly marketed in the State (80% whole fresh and whole frozen), or in various stabilized forms (20% smoking and artisanal drying). The consumption of small pelagic per capita has fluctuated over the period 2009 - 2018 with an average of 14 kg / inhabitant / year and national disparities between urban and rural areas are noted. Economically, small pelagic dominate and contribute significantly to The Gambia's trade surplus in fishery products. In addition, the study highlights the lack of valorisation of small pelagic in the Gambia linked to several constraints and the emergence of new uses including processing into fishmeal which threatens national food security and the livelihoods of thousands of people (Gambians and foreigners). Public policies must be geared towards better valorisation of small pelagic to further boost the sector's contribution to the national economy, to the correct supply of the local market, and finally to the development of players in the fishing sector.

Keywords: value chain, fish, food safety, fishmeal, unsanitary

1. Introduction
Small pelagic fishes have an important role for food security in West Africa (Asiedu *et al*., 2021; FAO, 2019; Bâ *et al*., 2017; Failler, 2014) [3, 21, 5, 19]. They constitute a source of important animal proteins accessible at prices in adequacy with the purchasing power of West African populations (Dème, 2018 ; De Graf *et al*., 2014 ; USAID, 2014) [13, 40]. In The Gambia, the size of the landings of small pelagics makes it possible to maintain the apparent availability at a level well above the African average (28kg in The Gambia against 12kg on average in West Africa) (FAO, 2018a; FAO, 2018b) [22, 23]. Beyond this contribution to food security, small pelagics fisheries generate direct and indirect jobs and constitute a means of subsistence for the West African coastal populations (Dème *et al*., 2019a) [11]. In The Gambia, out of the 4,250 fishermen identified, 60% are involved in purse seine, encircling gillnet and surface driftnet fisheries targeting pelagic fishes (GBoS/UNICEF, 2019; DoF, 2017; Mendy, 2009) [25, 14, 31]. Economically, the quantities of small pelagics exported in recent years justify Gambia's trade surplus in fishery products (UNCTAD, 2014) [37]. Thus, small pelagics constitute an important source of foreign exchange for the Gambian state. This contribution to food security, job creation and currency creation would have been even greater if small pelagics are the subject of sustained valorisation (Baio, 2019) [6]. Thus, most of small pelagics landed in the Gambia are marketed as they are (fresh whole, whole frozen) under various national and foreign markets (DoF, 2017; DoF, 2016; UNEP, 2014) [14, 16, 39]. Various constraints hinder a better valorisation of coastal pelagics.

The large landing centers for Gambian artisanal fisheries are somewhat unsanitary and the conditions for landing pelagics are not optimal. The cold chain is deficient throughout the fish circuit. All these factors cause great physical losses of fresh or processed fish with questionable product quality. The emergence of fishmeal factories in recent years in The Gambia tends to drain large volumes of small pelagics into non-food production (FAO, 2019; Greenpeace, 2019; Gorez B., 2018; Seafish, 2018; Carten A. *et al*., 2017; Failler P., 2015; Tarbiya *et al*., 2011 ; Failler *et al*., 2005) [21, 28, 27, 34, 9, 17] which constitutes a threat to the food security of the Gambian populations. This situation leads to a reflection on the formulation of public policies aimed at sustainably developing and growing the value chain of small pelagic in the Gambia. A better valorisation of pelagics would be a source of opportunities for thousands of young Gambians.

The objective of this article is to provide an analysis of the small pelagics value chain in the Gambia. Thus, in doing so, it aims to understand the production trends of small pelagics for the period 2013 - 2020 and to lead to the formulation of public policy recommendations for the valorisation of the resource for better social and economic performance. The method consisted in collecting quantitative and qualitative information from the fisheries statistical services (Gambia Fisheries Department - GFD and Gambia Bureau of Statistic - GBoS) and in the various landing centers in the country. Thus, data on landings, foreign trade and consumption of small pelagic from 2013 to 2020 are mobilized to establish the marketing of small pelagic in the Gambia and then discuss the lack of valorisation and the shortfall for the state and the actors.

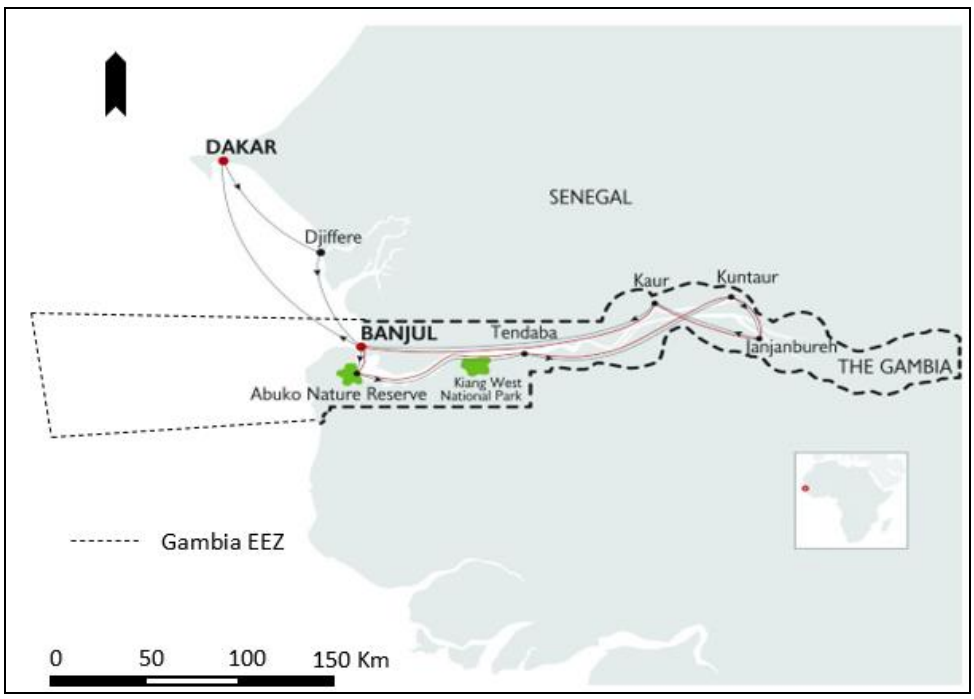
Most of the studies on small pelagics in West Africa focus on the productivity, overexploitation and refraction of the resource in a context of climate change (Bâ *et al*., 2017; Failler *et al*., 2015 ; Freon *et al*., 2014 ; Ecoutin *et al*., 2005) [5, 17, 24, 16]. Thus, they place more emphasis on the quantities than on the quality of the product. In a context of scarcity, the objective should no longer be to produce the maximum but rather to make the most of the landings. The present work thus provides a new analysis on small pelagic in The Gambia by addressing their marketing and a critical approach on valorisation. It contributes too to the formulation of public policy aimed at sustainably managing resources and seriously improving the livelihoods of actors

The article is structured in three parts. In the first part, the research method is explained. In the second part, the results are presented, in particular the state of exploitation of small coastal pelagic between 2013 and 2020 in The Gambia. Finally, the third part provides a discussion on the lack of valorisation of small pelagics and the urgent need to put in place public policies for a more significant increase in the economic and social value of small coastal pelagics. It concludes with recommendations in this direction.

2. Materials and Methods

2.1 Study Area

The Gambia is located in the high productivity Atlantic Ocean upwelling zone of the Canary Current Large Marine Ecosystem – CCLME region (Sidibeh, 2019). Estuaries play an important role in the Gambian ecosystem. They cover a very dense mangrove forest of 67,000 km^2 extending 200 km inland from the mouth of the Gambia River (Sidibeh, 2019; Laë *et al*., 2004) [30]. These estuaries provide breeding and rearing grounds for many species (Laë *et al*., 2004) [30]. Both in the continental zone and in the maritime fringe, the country has abundant pelagic resources. With a continental shelf of around 4000 km2, The Gambia has great biodiversity. Over 500 species of marine fish have been recorded in Gambian waters (Sidibeh, 2019). The coastal small pelagic group includes round sardinella (*Sardinella aurita*), flat sardinella (*Sardinella maderensis*), bonga (*Ethmalosa fimbriata*), horse mackerel (*Trachurus trachurus*) and Atlantic chub mackerel (*Scomber japonicus*).



Source: Sidibeh, 2019

Fig 1: The Gambian EEZ

The most important fishing centers in the Gambia are: Kartong, Gunjur, Sanyang, Tanji, Brufut, Jeshwang, Bakau and Banjul. These centers bring together most of the fishermen and the catches of small pelagics are landed these. Along the Gambian River, the main fishing site are Barra, Albreda, Bintang, Tendaba et Jarreng (Albaret *et al*., 2004) [2]. It is noted a specialization in the fishing activities according to the sites, thus the fishermen on the Atlantic coast mainly target the Bonga (Ethmalosa fimbriata). Gunjur and Tanji record each year the best performances of the catches of Bonga (Ethmalosa fimbriata) (Ecourtin *et al*., 2005) [16]. Overall, the catches of artisanal fishermen are disproportionately landed on the 132 sites identified by the Department of Forestry - DoF (DoF, 2017 ; DoF, 2016) [14, 16].

2.2 Sources of data

2.2.1 Collection of statistical data and field information

The statistics presented in this study were collected over two years in a research project on the small pelagic sector in West Africa carried out in partnership with Gambian administrative and research institutions. In this study, data on catches, landing (according to fishing gear) and foreign trade on pelagic and other species were drawn from the databases of the Gambia Fisheries Department - GFD and Gambia Bureau of Statistics - GBoS. These two institutions have the responsibility for ensuring the daily collection of data on fishing throughout the national territory.

For the marketing of the landings, field surveys were carried out in order to establish a map of the distribution of the catches. These surveys were mainly carried out at the landing site of Grand Banjul, in Serrekunda and Brikama, and finally the sites of Kartung and Mandinaru on the Atlantic Coast. A long Gambian river, interviews were carried out at the Barra market and at Niumi National Park. These interviews mobilized diverse actors (around a hundred) in different formats (individual and collective).

2.2.2 Additional data

To complete the primary data, a document search was carried out at the same time. Thus, the secondary data focused on scientific publications and study reports on fishing and small pelagic sectors in West Africa and particularly in Gambia. Most of these secondary data come from study reports from the Regional Coastal and Marine Zone Conservation Program in West Africa - PRCM, which recently produced national reports on the economic and social value of small pelagic in West Africa (Dème *et al*., 2020; Dème *et al*., 2019b) [12]. Other study achievements commissioned by the European Union, the Management and Resilience of Small pelagic fisheries in West Africa project – GREPPAO were also mobilized within the framework of this article. The Ministry of Fisheries, the fisheries monitoring service, and development projects in the Gambia were also requested to obtain statistical information and grey literature on small pelagic. All documents made available to us thus provided solid information for quality work.

2.2.3 Data analysis

From the data provided by the GFD and the GBoS, a database was set up in Excel by following an established nomenclature comprising production by species, consumption, imports and exports, no-food production (fish meal) and national data on demography (population evolution). The data covered an eight-year period (2013 – 2020), the most caught and landed pelagic species both by artisanal or industrial fishing. These are the round sardinella (*Sardinella aurita*), flat sardinella (*Sardinella maderensis*), Bonga (*Ethmalosa fimbriata*), horse mackerel (*Trachurus trachurus*) and Atlantic chub mackerel (*Scomber japonicus*). The per capita availability of all species and small pelagic was obtained by the following procedures :

- Per capita consumption of small pelagic = (production (small pelagic) + import (small pelagic) – Export (small pelagic) / population
- Per capita availability off all species = (Total production + import - export) / population

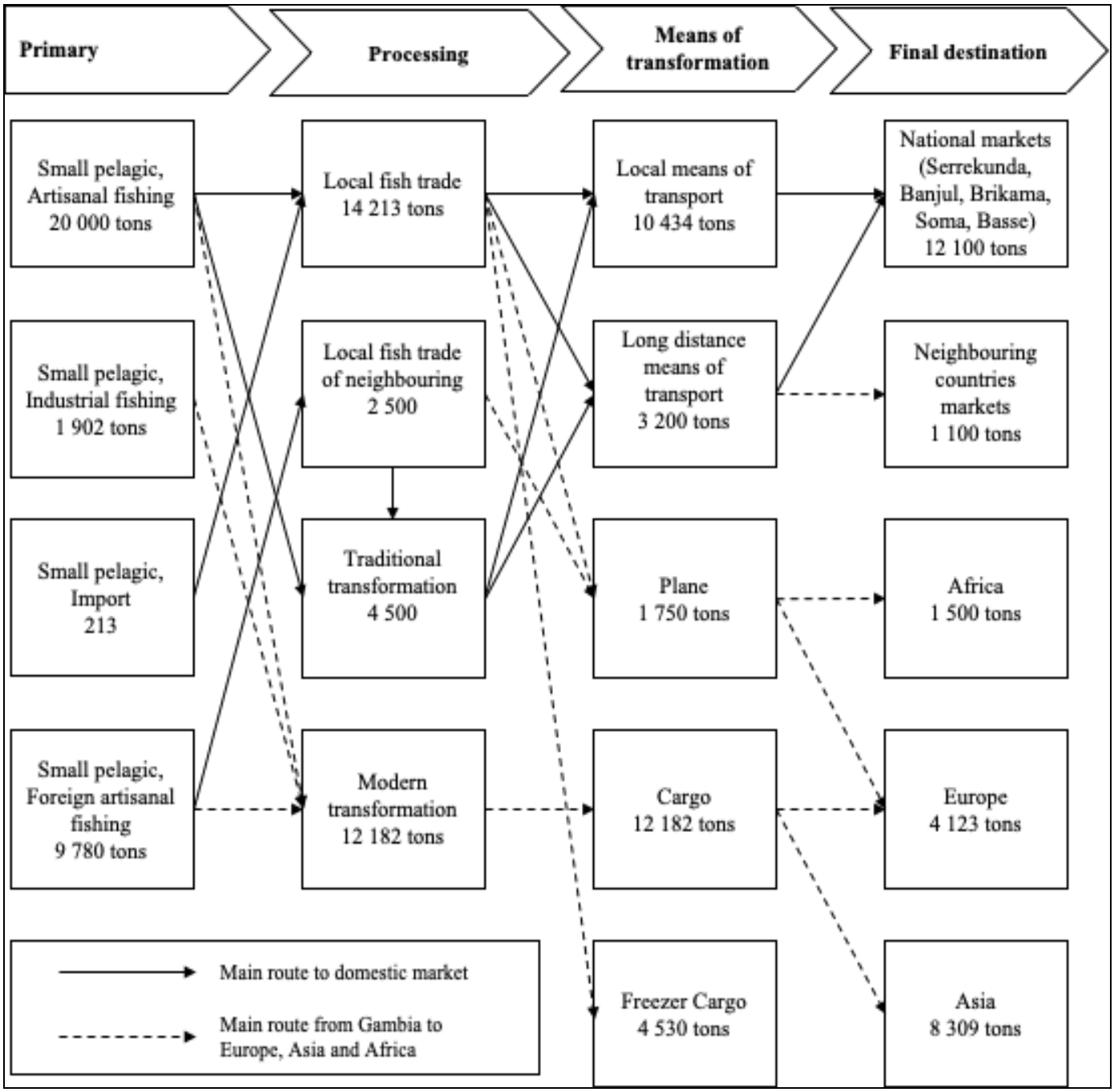
Since the excel base for the different species were in metric tons, it was necessary to convert the production, the import and export in kilograms to have the availability per capita in kilograms per person per year.

Estimates of the quantities of pelagic fish processed by the fishmeal industry in The Gambia were obtained from field surveys with fishermen and DoF agents at the different sites. Indeed, the fishmeal industries have not been collaborative in providing their data. Thus, the calculation of the quantity of fishmeal was made on the basis of the ratio of fish to fishmeal (4.5 kg of pelagic for 1 kg of fishmeal). The estimate of the amount of flour produced is added to the exports because all the flour is exported.

3. Results

3.1 Graphical representation

The flows of small pelagic fish from primary production (landing by the different fisheries) to the final destination are presented in figure 2. In terms of landings, 85% of small pelagic are landed by artisanal fishing and national industrial fishing lands less than 5%. In the context of migrant fishing, Senegalese artisanal fishermen provide 10% of landings of small pelagic. Gambian imports of small pelagic are very marginal. The small pelagics are marketed in fresh form (45%), frozen (25%), artisanal processed (10%), industrial processed (20%).

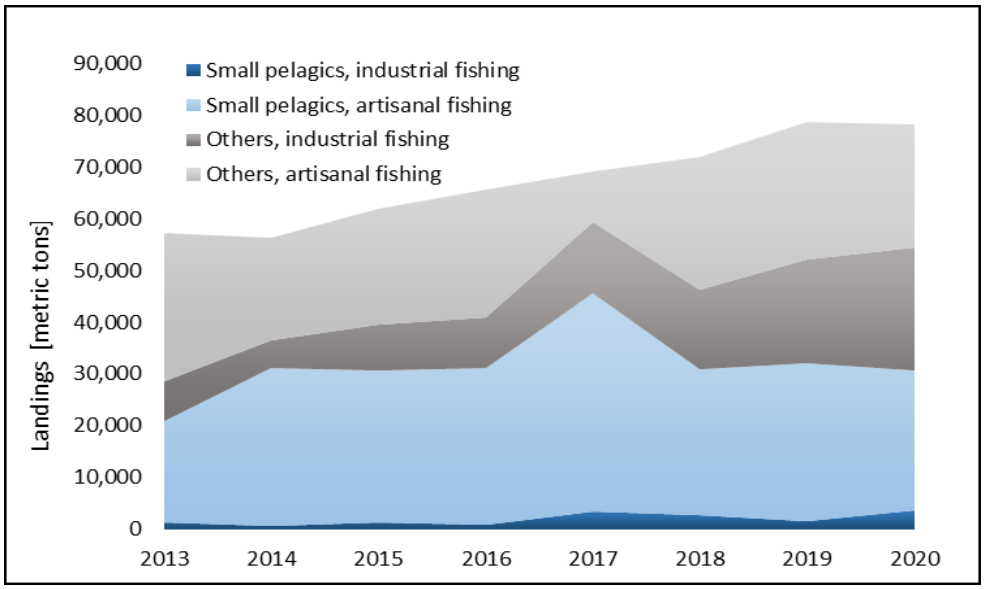


Source: Department of Fisheries - DoF

Fig 2: Graphical representation of the small pelagics fish chain

3.2 Annual landings of pelagic in The Gambia

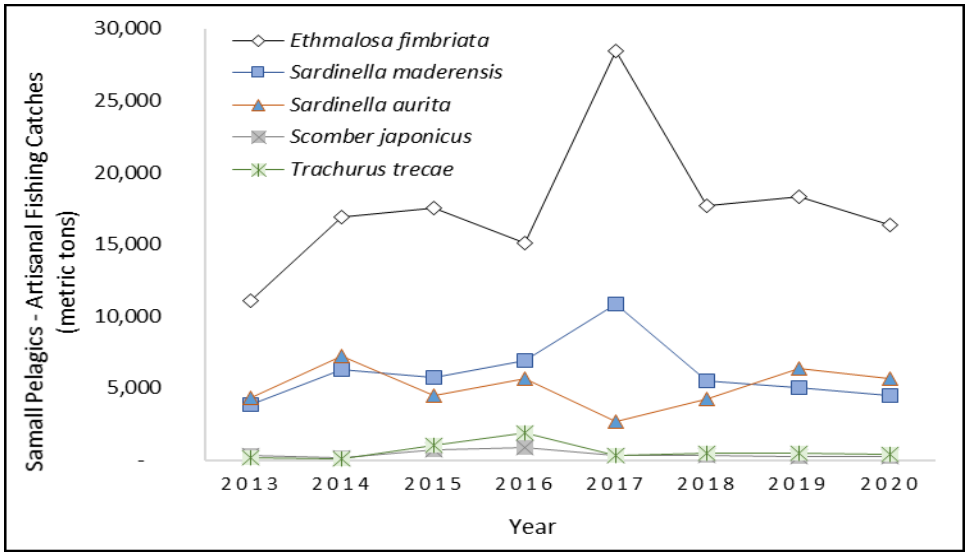
Over the period 2013-2020, total landings recorded an annual average of 67,367 metric tons. The lowest levels of landings were recorded in 2014 with 56,247 metric tons (Fig. 3). The maximum landing record was recorded in 2019 with 78,702 metric tons landed. Fish landings experienced an increasing trend in The Gambia over the period 2013-2018, from 57,223 metric tons in 2013, landings increased to 78,157 metric tons in 2020. Small-scale fishery landings largely dominate those of industrial fishing. Still starting from the 2013-2020 average of total landings, artisanal fishing provides 78% of the products landed, i.e. 52,480 metric tons and landings from industrial fishing are on average 22% of the total (Fig. 3).



Source: Plotted based on data from Gambia Bureau of Statistics GBoS

Fig 3: Total landings of Small pelagics and other species by artisanal and industrial fisheries in The Gambia

The landings of artisanal small pelagic fish are ten times higher than those of industrial fishing. Thus, over the period 2013 - 2020, artisanal fishing landed an average 29,822 metric tons per year, where landings from industrial fishing stood at only 2,724 metric tons. Small pelagic artisanal fishery landings are very largely dominated by the Bonga, *Ethmalosa fimbriata* representing the average of 17,688 metric tons between 2013 and 2020. From 2013 to 2015, small pelagic landings by artisanal fishing experienced an upward trend, going from 11,098 metric tons in 2013 to 17,559 metric tons in 2015, passing by 16,881 metric tons in 2014 (Fig. 4). In 2016 it was noted a decrease landing of Bonga (*Ethmalosa fimbriata*) by artisanal fishing with 15,060 metric tons landed. This drop was be followed by a peak in 2017 with an unprecedented landing of 28,446 metric tons. Since then the statistics of landings of Bonga *Ethmalosa fimbriata* by artisanal fishing have been on a downward trend (Fig. 4). After the Bonga, flat and round sardine come second in the landings of small pelagic fish from artisanal fishing. Landings of flat sardines are slightly higher than those of round sardine. Between 2013 and 2020, the landings of flat sardinella underwent two trends. First from 2013 to 2016 marked an increasing trend with 3,858 metric tons landed in 2013 and 6,929 metric tons in 2016. This period is followed by a peak in 2017 with 10,861 metric tons. Then a downward trend has been displayed since 2018, going from 5,472 metric tons to 4,486 in 2020 (Fig. 4). Compared to sardine (*Sardinella maderensis and Sardinella aurita*) and Bonga (*Ethmalosa fimbriata*) species, Atlantic Chub Mackerel (*Scomber japonicus*) and horse mackerel (*Trachurus trachurus*) are landed in very small quantities by artisanal fishing. Over the period 2013 - 2020, the average landings are 400 metric tons for the Atlantic chub mackerel (*Scomber japonicus*) and 584 metric tons for the horse mackerel (*Trachurus trachurus*) (Fig. 4).

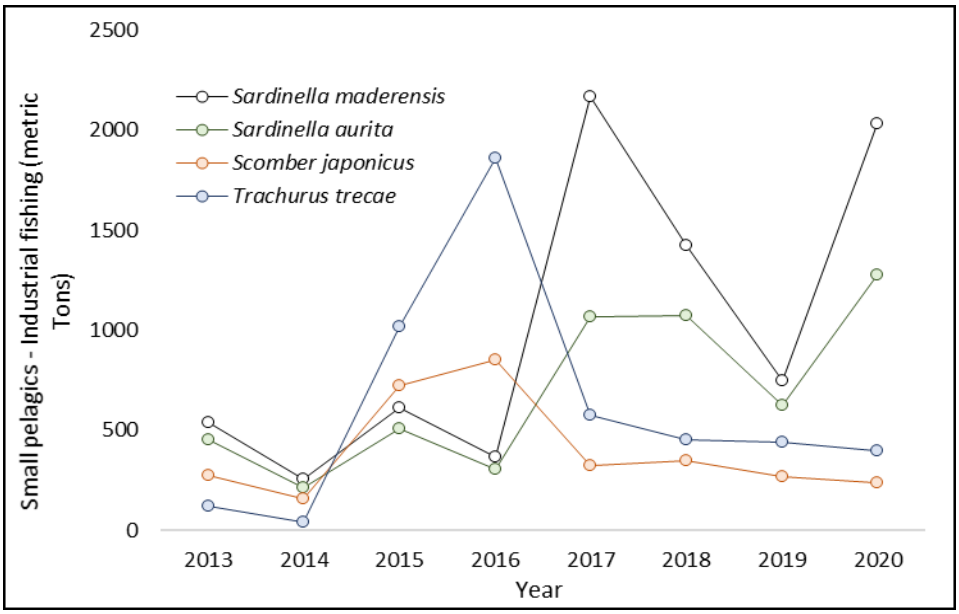


Source: Plotted based on data from Gambia Bureau of Statistics GBoS

Fig 4: Artisanal fishing landings by small pelagics species

Industrial fishing in the Gambia has relatively low landings compared to artisanal fishing. For the small pelagics, industrial fishing mainly lands sardine (*Sardinella maderensis and Sardinella aurita*), Atlantic chub mackerel (*Scomber*

japonicus) and horse mackerel (*Trachurus trachurus*). Unlike artisanal fishing, Gambian industrial fishing does not land Bonga (*Ethmalosa fimbriata*). Small pelagic landings by industrial fishing fluctuate from year to year. The flat sardinella is the most landed species. Between 2013 and 2020, the average landed is 1,019 metric tons. This average is influenced by the record peaks noted in 2017 and 2020 with 2,167 metric tons landed and 2,014 respectively. For the other years, the landings turned on an annual average of 600 tons with the lowest year recorded in 2014 with only 256 metric tons of flat sardinella landed (*Sardinella maderensis*). This same fluctuation characterizes the landings of round sardinella by industrial fishing. With an annual average of 691 metric tons landed annually, the maximum landings were reached in 2020 with 1,974 metric tons in 2020 and the lowest in 2014 with 214 metric tons.



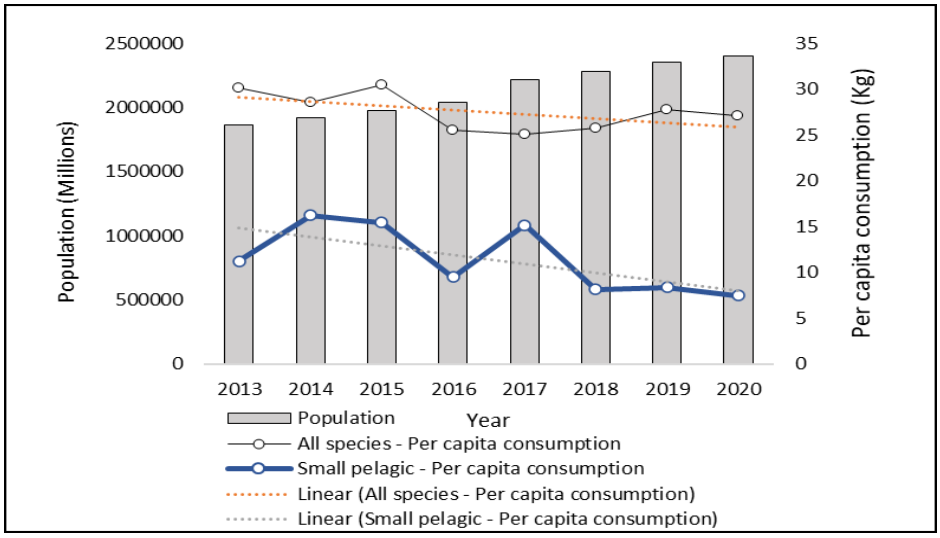
Source: Plotted based on data from Gambia Bureau of Statistics GBoS

Fig 5: Industrial fishing landings by small pelagic species

For the Atlantic chub Mackerel (*Scomber japonicus*) and horse mackerel (*Trachurus trachurus*), 400 metric tons and 600 metric tons average per year have been landed respectively between 2013 to 2020.

3.3 Consumption of small pelagic in Gambia

The following figures illustrates the evolution of the per capita consumption of the Gambia for total fish production and more specifically for small pelagic fish. The per capita consumption has fluctuated both for the whole production and for the small pelagic. For the total production, the highest value is recorded in 2015 with 30 kg and the lowest in 2017 with an availability of 25 kg (Fig. 6). On the average of the apparent availability of 28 kg per year all species between 2013 to 2030, pelagic contribute 11 kg (Fig. 6). The per capita consumption of fish in the Gambia shows an overall declining trend. This downward trend is more confirmed for small pelagic from 2017. Thus from 15 kg of small pelagic consumed in 2017, it fell almost by half in 2018 with 8 kg and 7 kg in 2020 (Fig. 6). The decline in apparent availability is likely related to the significant growth in Gambia exports and population in recent year (Fig. 6).



Source: Plotted based on data from Gambia Bureau of Statistics GBoS

Fig 6: Changes in per capita consumption (Kg) of small pelagics and All species

3.4 Small pelagic imports and exports

The Gambia has a trade surplus with exports of fishery resources 12 times greater than imports. Imports are very low. They are mainly made up of small pelagic from neighboring countries, particularly Senegal. As for exports, they are constantly on the rise for the last eight years. From less than 1324 metric tons exported in 2013, these have reached the 13,000 metric tons mark since 2016 with more than 13,212 tons shipped to various countries in 2020 (Tab. 1). The record number of exports was reached in 2017 with more than 13,733 metric tons of exported fishery products (Tab. 1).

Table 1: Export and Import of pelagic and other fish in the Gambia

Small pelagic	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Total import	218	240	128	153	100	335	220	312
Small pelagic import	66	65	51	66	24	109	118	112
Total export	1324	1555	1737	13684	13733	13335	13427	13212
Small pelagic export	137	158	187	219	202	105	127	136
Non-food product export (Fish meal)	_	_	42	11615	11872	12366	12427	12700

Source: Gambia Bureau of Statistics GBoS

This boom in exports is linked to the emergence of new uses for small pelagic, in particular the processing of fishmeal. In 2016, 11,615 metric tons of non-food production (fishmeal) were exported, and 12,700 metric tons in 2020. The increase has been constant since 2016 (Tab. 1).

4. Discussion

Small coastal pelagics are of strategic importance in Gambia because of their important role in creating opportunities and jobs for thousands of people along the chain. The 2016 frame survey conducted by the Department of Fishery estimates a total of 4 234 fishers throughout the country. More than 75% of these fishermen embark in purse seine and gillnet boats mainly targeting small pelagics (GBoS, 2018; DoF, 2017 ; DoF, 2016 ; WFP, 2016) [14, 15]. In addition, small coastal pelagics constitute the raw material of the artisanal and industrial processing sub-sector. These two sub-sectors also employ a significant number of Gambians (WFP, 2018; UNDP, 2013 ; Njai, 2000) [33]. In total, there are more than 25 420 fish processors in Gambia and about 10 330 individuals who are active in the marketing of fishery product. Our investigations in the field have revealed that a fish processor uses the services of least five people to take care of all operations related to smoking, drying or salting fish. By making the report, it is at least 127 100 individuals who are active in the artisanal transformation (DoF, 2017; DoF,2016) [14, 15]. The 14 industrials processing and export factories employ nearly 1 300 individuals. Globally in The Gambia, it is more than 168 000 people whose direct livelihood depends on the catches of small pelagics (DoF, 2017; DoF, 2016) [14, 15]. In addition to their contribution to employment, the results of this study show that small pelagics play a strategic role for the food security of Gambian population in both urban and rural areas. Thus, as in Senegal, they are the main source of animal proteins with an average annual consumption per individual of 14 kg. The ease of transporting fish in its fresh state or in its various stabilized forms, thus promoting their availability in the most remote and isolated areas (Déme *et al*., 2019a) [11]. Small pelagics are thus presented as multi-use resource in Gambia consumed in several forms (fresh – frozen or artisanal processing). This is how small pelagics present themselves as a major component of state policy for food security and the fight against malnutrition. In Gambia, the consumption of chicken, beef and mutton often requires a fairly high purchasing power, which explains why for a large part of the population, fish is almost the only source of protein of animal origin (Dème *et al*., 2019a) [11]. The incomes of the Gambian populations are relatively low (De Graaf et Garibaldi, 2014) [10]. The results showed that Gambia has a significant trade surplus in fishery products. This export is largely given by small pelagics frozen or processed into fishmeal (unfit for consumption). However, this export trend of industrial processing of small pelagics into fishmeal in Gambia seriously threatens the sustainability of the resource.

If we convert fishmeal into pelagic fish taking into account the ratio (1kg of fishmeal equals 4.5 kg of small pelagics), it is on average 50,000 metric tons of small fresh pelagics are processed annually into fishmeal in Gambia over the past five years (2015 - 2020) (Freon *et al*., 2014) [24]. This production of fishmeal by Chinese in Gambia is exclusively intended for exports to Asian and European countries (Dème *et al*., 2019a ; Corten *et al*., 2017) [11, 9]. Thus the flour is intended to feed their aquaculture and their poultry (Greenpeace, 2019) [28]. This transformation unfit for human consumption has significant consequences on the food security of Gambians, it threatens the sustainability of pelagic stocks and the thousands of job generated by the sector. Indeed, the growth in the quantities of pelagics fish poured into the fishmeal industries rather than the local consumption market is the main source of the drop in the per capita consumption of small pelagics in Gambia in recent year. Thus, the resource becomes more and more inaccessible for local consumption, Chinese industrialists offer artisanal fishermen and fishmongers more remunerative prices than on the local market (Njai, 2000) [33]. Besides this consequence on consumption, the raw material of artisanal processing is seriously threatens the transformation segment given the crucial socio-economic role for the Gambia (Moore *et al*., 2019; Adeyeye *et al*. 2016; Keus *et al*., 2015; Belhabib *et al*., 2013) [32, 1, 29, 8]. Beyond the consequences mentioned above, the question of the sustainability of stocks of small pelagics arises acutely. All the more so as public policies show an aptitude to put in place the adequacy of catching capacities to the halieutic potentialities. Especially in a context where the scientific literature reports an overexploitation of small pelagics in the West African zone (Belhabib *et al*., 2016; Failler *et al*., 2015; Failler *et al*., 2014a ; Failler *et al*., 2014b; Atta-Mills *et al*., 2004) [7, 17, 18, 19]. For all these reasons mentioned (threat to food security, overexploitation of pelagic fish stocks), the study led to the formulation of public policies aimed at improving the supply chains of small pelagics in Gambia (Tacon *et al*., 2018) [35]. Thus, it is no longer a question of favoring volumes over margins, policies should essentially be oriented towards a strong valuation of pelagics to the benefit of the actors of the sector and the state.

Public policies for the management of pelagic fish stocks should, as a priority, focus on valuing and optimizing the profit that can be derived throughout the value chain of

coastal pelagics. It is no longer a question of producing more (by increasing fishing capacity) nor of continuously putting low and added value frozen fish on the African market, but of making the most of the quantities of fish landing. For this, the state and the donors will have to move towards an effective industrialization of the fishing sector in Gambia. In addition to increasing added value, public policies should also prioritize supplying the local market by limiting the quantities of small pelagics processed into fishmeal. The limitation is important because it will enhance the consumption of small pelagics in Gambia and supply the artisanal processing segment with raw material. More modern processing areas must be installed for better quality processed products and less painful working conditions for the actors.

In order for all these recommendations to be implemented effectively, it is essential for the Gambian state and the fisheries technical services to have an integrated information system generating fishery data, product valuation and markets for formulations robust scientific advice based on good fisheries policies.

5. Conclusion

Small pelagic are an important component of the Gambian fisheries economy. Overall, they generate significant social impacts related to job creation, but above all to their significant contribution to the nutritional security of the Gambian populations. Small pelagic are also sources of economic spinoffs by contributing to The Gambia's trade surplus in seafood. However, the process of creating added value remains weakened by a lack of infrastructure and organization which is detrimental to it and hinders its development, in particular the improvement of product quality and safety.

Thus, small pelagic in The Gambia are characterized by the presence of a social and economic shortfall resulting from the lack of development of resources and fishing ports marked by the virtual non-existence of cold rooms and ice factories and the reliable and continuous supply of electricity, especially in rural areas. In addition, Gambian exports favour volumes over margins with a predominance of exports of state products, so the level of added value remains relatively low. Finally, the emergence of fishmeal factories in The Gambia tends to drain the catches of small pelagic towards a processing method whose products are not suitable for human consumption. This risks having a negative impact in the short term on the correct supply of the local market and by ripple effect on national food security.

This article, like much previous work on small pelagic in West Africa, concludes by again raising the urgent need for development of policies for valuing pelagic species. It is no longer a question of producing more, but of making the most of the quantities of fish landed. Four recommendations can therefore be made in order to mark out the field of intervention of public policies within the framework of improving the contribution of small pelagic to the economic and social development of The Gambia. The first concerns improving the quality of fish in order to best enhance current levels of production. The second is to reduce the share of production destined for non-food use (fishmeal) and focus more on the correct supply of the Gambian market so as to increase human consumption of fish. The third aims to rapidly develop a number of initiatives in order to consolidate the employment niche that the fishing sector constitutes for young Gambians. Finally, the last directive must ensure the setting up of local consultation frameworks in order to promote participatory management of small pelagic by involving all stakeholders, especially migrant fishermen.

6. Acknowledgements

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