Senegal fishmeal fact-finding trip, December 15-19 2025

Jo Gascoigne, 16 January 2026

Hosted by Afric Azote

Fish supply chains and the fishmeal industry in Senegal

There are four operational fishmeal factories in Senegal at present: one in Dakar (Afric Azote – Senegalese-owned), one in Saint Louis, one in Joal (both Chinese-owned; the owner of the Joal plant also has a factory in Gambia) and one in Sandira (Moroccan-owned). Of these, only Afric Azote operates year-round. Afric Azote is GMP+ certified, and is applying for membership of IFFO.

For fish landings in Senegal, there are four main supply chains which the product can enter:

- Fresh fish to the local market for local consumption
- Freezer plants and other processing factories, for local consumption or export as frozen or canned
- 'Femmes transformatrices' – women who process fish using traditional methods to make a variety of dried/smoked/salted/fermented products, appreciated as an ingredient in Senegal and across West Africa
- Fishmeal factories

Afric Azote: raw materials

Afric Azote estimates that their source material is split roughly 50/50 between by-products (co-produits / déchets) and whole fish (statistics for 2025, Jan-November: 57% byproducts / 43% whole fish). The byproducts are sourced from processing factories (e.g. Condak – a canning plant specialised in sardinelles; and Scasa – a tuna processing plant), or from local / artisanal processors at landing sites. The whole fish are sourced by mareyeurs (buyers / middlemen) from various pirogue landing sites around Senegal (Joal, Mbour, Saint Louis and several other sites).

Reportedly, how this works is:

- The pirogues land their catch at the landing site (a beach with optionally an open sales hall behind)
- Mareyeurs buy fish from the pirogues at the landing sites. They may buy it on their own account and then resell, or may buy it on behalf of others without taking ownership. They may own or finance certain pirogues and buy their entire catch, or they may buy according to whatever is available. (The system varies by site and person.)
- Good quality fish will be sold on to the local market for human consumption. If it is not desirable for the local market (because of quality, size or species) it will be offered preferentially next to processors or femmes transformatrices. If it is not suitable for that, it will be sold for fishmeal.

Afric Azote require all their purchases of raw material to come with a catch certificate from the Services Sanitaires (health inspection), giving species, quantity, date of purchase and supplying mareyeur – this would allow traceability to a group of pirogues although not necessarily an individual pirogue. It may, however, require some support to the mareyeurs to formalise their

record-keeping a bit. (Reportedly, undersized fish should not be able to obtain such a catch certificate; although enforcement is unclear.)

The fishing is carried out by pirogues (artisanal fishery), with the exception of the Condak and Scasa. Condak has two small fibreglass sardinier vessels, while Scasa buys from Capsen, a fleet of 4 tuna seiners and one pole-and-line vessel, Senegalese-flagged. (The purse seine vessels are MSC certified for skipjack and yellowfin, but not bigeye which will likely be mixed in to the byproducts in small quantities.)

In Joal, a mareyeur noted that the fishmeal factory has contributed to cleaning up the beach a bit, since women (from Guinée apparently) collect the debris left by the fishermen and sell them to the factory – previously the commune had to pay for this to be done. In addition, the fish remaining unsold on the local market might be sold to fishmeal to reduce the mareyeur's loss. He also buys byproducts such as skins, bones, heads and guts, to sell to fishmeal. In Dakar, it was reported that certain fish species which have no local fresh fish market (e.g. khour khour, ngate – Atlantic bumper and similar bycatch species) were formerly discarded at sea, but now may be landed for femmes / fishmeal (depending on quality and size).

The director of Condak noted that his factory generates 10 t of sardinella by-products every day (guts, heads, tails, fins, scales – although he has plans for the scales); fishmeal factories are the only way he can get rid of it. The femmes transformatrices, even if they wanted it, could never deal with sufficient quantities.

Raw material prices

The pricing structure was explained to me by Afric Azote, and subsequently confirmed by the mareyeurs. The order of products in terms of price, and thus preference in terms of finding a buyer is: local market (fresh) > 'poisson afrique' (frozen fish for export around West Africa) > femmes transformatrices > fishmeal plants. Below are some specifics on prices that I noted down; they may be location, time or species-specific and therefore shouldn't be extrapolated.

- Fresh fIsh is for sale to the consumer on the local market in the price range 1000-5000 FCFA (francs) / kg, depending on species
- In Mbour, it was reported that fresh fish for the local market (species unknown) was bought from fishermen at ~440 francs / kg (22,000 francs for a 50 kg caisse)
- Fresh sardinelle for the local market is bought from the fishermen at 500 francs / kg in Saint Louis (25,000 francs / caisse) and 300 francs / kg at Joal (15,000 francs / caisse)
- Condak buys fresh sardinelle in Dakar for canning at 428 francs / kg
- In Mbour the femmes transformatrices reportedly buy fish at 240 francs / kg (12,000 francs / caisse); at Dakar, the femmes buy ngate (which has no fresh consumption market) at 220 francs / kg (11,000 francs / caisse)
- For fishmeal, at Mbour the mareyeur reported paying at most 140 francs / kg (7000 francs / caisse); at Joal and Saint Louis the factories reportedly pay at most 130 francs / kg (6500 francs / caisse); in Dakar it is 120 francs / kg (6000 francs / caisse)

In other words, there appears to be no overlap between what the fishmeal factories will pay and what any of the human consumption supply chains will pay – if there is a human consumption market, it is always preferable in terms of price.

According to Afric Azote, the four fishmeal factories have agreed a pricing structure for raw materials between them (depending on species), with the specific aim of ensuring that they are not competing with the femmes transformatrices. (I did not verify this with the other factories, but none of the women we spoke to mentioned fishmeal factories as a problem for them in terms of competition for product or price inflation.) However, one mareyeur noted that transport costs might be an issue at the margins, in that the fishmeal factories have lorries and pay transportation, while in selling to the women, the fisherman has to pay for the transportation.

According to a mareyeur in Joal, Omega Fishing (the factory in Joal) formerly bought mainly sardinelles, but not any more. This is because the market price for sardinelles has gone up to ~2.5 times the maximum price that the factory is prepared to pay (see above). Instead, it operates largely on by-products, reportedly.

According to the director of Condak, the price of sardinelles has increased by a factor of ~10 on the local market in the last 20 years; this has resulted in investments in quality and value-added – the fish is now better valorised than previously.

Identification of fish species in by-products

Afric Azote has submitted samples of fishmeal for DNA analysis to a laboratory in Nantes (France), in order to verify the species composition. In this specific case, it was aimed at evaluating the fishmeal made from the processing factories, but could also be used to check species composition from the pirogues – e.g. to ensure that no protected or endangered species are involved.

In this particular case, the fishmeal was composed of skipjack tuna (37%), sardinellas (42%) and small amounts of sole, mullet, obo and yellowfin tuna (presumably byproducts from processing), and Atlantic bumper (a bycatch species).

Regarding protected / endangered species: it is strictly forbidden to land turtles or marine mammals and they are reportedly not found on the local market in Senegal. Sharks are landed, with the fin dried and exported to Asia, while reportedly the meat is commonly used by the femmes tranformatrices. It is possible that some shark might end up in fishmeal, but this is likely rare. (It could happen if the quality is too deteriorated even for the women – who I must say did not seem too concerned about food safety.)

Fishery and fishing capacity

The pirogues are variable in size, capacity and fishing techniques, but the largest are highly efficient fishing vessels; reportedly with a capacity of up to 1000 caisses (50 t) per trip, nets up to 1 km long and the ability to operate from the north of Mauritania (vessels from Saint Louis) to Guinea Bissau. There is no regulation of the total number or capacity of the pirogue fleet and new vessels continue to be built. The number of pirogues operating out of a large landing site such as Mbour or Saint Louis must be in the thousands. It seems also there is not much enforcement of the regulations. (Reportedly there was a recent period when outboard motors were subsidised by the government.) It was also emphasised that the fishermen are very skilled, innovative and effective fishermen. If you think that because the pirogues are wooden and nicely painted, they are ‘artisanal’ and therefore benign and low impact on the ecosystem, think again.

Saint Louis is one of the largest landing sites (as I understand) – certainly very impressive in the number of vessels and scale of activity, and we did not see all of it. We were told that as regards small pelagics (sardinelles, mackerel, horse mackerel and mullet; with mulet noir the main species), essentially all their fishing is taking place in Mauritanian waters. The fishing agreement with Mauritania allows for 500 licences, which for small-pelagic seine fishing is 250 pairs of pirogues working together. There is a representative of the Mauritania Coastguard present to enforce this (or try to). Reportedly these vessels will make trips of 2-6 days up as far as Cap Blanc, and will always land back in Saint Louis, not in Mauritania. This fishery operates from November-June. It is clear that the data on these removals is likely to be largely inadequate for the purpose of fisheries management in Mauritanian waters. From the regional perspective, a project focusing on improving statistics could usefully start in Saint Louis.

In addition to the small pelagics, it also seems that 'pirogues glacières' (with ice on board) fish in Mauritanian waters using lines, for dorades, pageots and other higher priced species – these vessels can make trips of up to 15 days, travelling as far as southern Morocco.

The enqueteur (data collector) at Mbour reported landings from vessels based in Mbour, Joal, Saint Louis, Gambia, Casamance and Ghana; with Guinée Bissau being an important fishing zone for many of these vessels.

Data collection and stock assessment

The responsible organisation is the CRODT (Centre des Recherches Océanographiques Dakar-Thiaroye; which seems to relate to where their offices used to be in Thiaroye). The lab facilities at their HQ are quite good, but they seem understaffed, the research vessel is broken, and the system of enquêteurs (fishery data collectors in the field at landing sites) is massively inadequate to the task in hand:

- 4 enqueteurs at Saint Louis and 2 (plus agent de plage) at Mbour – unclear at Joal and Dakar although there are some – this to cover at least several 100 landings per day in the high season.
- Smaller landing sites have no coverage.
- For the enqueteurs, the funding and employment is precarious – they are on annual contracts (prestataires), without security or benefits; reportedly the funding which came previously from fishing agreements has now dried up and CRODT now search around on an annual basis for funds to pay them.
- The system is on paper; completed forms are entered manually into a computer at CRODT.
- The (tiny) sample of landings by the enqueteurs (a few a day; coverage likely <<1%) is scaled up to estimate total catch; this relies on a periodic census of the total number of active pirogues of each type at each landing site, which has reportedly needs updating.
- CRODT has quite impressive lab facilities, and ambitions to acquire more sophisticated equipment (e.g. drones, stable isotope analysis facilities) – which would of course be great. However, the enqueteurs we met complained about a lack of basic equipment; e.g. boots, rulers for measuring fish.

At Joal we did not meet an enqueteur. At Mbour (a larger landing site with >1000 pirogues landing regularly) there are two enqueteurs and one 'agent de plage' (assistant). The agent de plage keeps track of arrivals (census), while the enqueteurs collect data on paper forms (vessel, date and time of departure and arrival, fishing gear, fishing zone, catch species and quantity). They may also measure

some fish. At Saint Louis (even larger than Mbour I think) there are 4 enqueteurs, but they have problems covering all the various landing sites, since they have no transport except feet.

The chef de poste of the Services de Pêche in Saint Louis (M. Fall) had the task of collating the various sources of statistics into monthly reports on landings at Saint Louis. To do this, he took the data collected by the CRODT enqueteurs, plus statistics from the Service Sanitaire (quality control services). Reportedly, all the vehicles leaving Saint Louis with fish on board should pass a control post which should record the quantity of each main species on board. This is a data source in addition to the enqueteurs, but is also not complete, since it doesn't cover any fish sold within Saint Louis and the surrounding area (and may not be complete for the rest), nor does it include minor species.

M. Fall clearly expressed his concerns with the data collection system:

- There are not good statistics on the number of pirogues – the census is too infrequent and is never completely exhaustive. Basically, no-one knows how many pirogues are operating out of Saint Louis at present.
- There is no system for keeping track of comings and goings – no mechanism for reporting when vessels depart and arrive, and multiple different landing sites around Saint Louis.
- Different organisations have partial statistics (e.g. CLPA – Conseil Local de la Pêche Artisanal; the Services de Pêche in local areas, CRODT, Services Sanitaires)
- Poor equipment – everything is on paper not digitised, a lack of measuring boards, balances, PPE, computers … as well as office space and personnel

Femmes transformatrices

We met two small groups of women buying fish to make dried/smoked/salted/fermented fish. The process is very artisanal (laid out in the sun on wooden tables, smoked on the ground using waste cardboard. (In the latter case, some smoking ovens had been provided by a NGO, but for whatever reason they were not being used.) The women agreed that there is a scarcity of fish nowadays, blaming industrial fishing, a lack of control, monofilament nets and oil exploration (but not fishmeal factories).

It is clear that this is an important traditional activity, allowing women to make a living. At the same time, from a food safety perspective it is a nightmare. So (as for the 'artisanal' pirogues) it is probably useful not to romanticise this activity too much.

Legislation / policy / management plans

The key elements of the fisheries management framework in Senegal are:

- Code de la Pêche (loi 2015-18) which provides the basic structure – i.e. definitions, objectives, roles and responsibilities, consultation processes etc. and gives the government the powers to establish regulations for management and sustainable use of fisheries resources
- Décret applying the Code de la Pêche, which establishes more specific provisions under the powers provided by the Code de la Pêche, i.e. for licensing, management measures, controls and sanctions etc.

- Sardinella management plan (plan d'aménagement sardinelles). The Code de la Pêche (article 13) allows for the establishment of fisheries management plans, and reportedly a management plan for the sardinella fishery has been completed and is just awaiting final validation by the Ministry before coming into force. (A copy of the draft is not available until then.)

The main elements in place at present to manage the sardinella fishery in Senegal are: a minimum size of 18 cm for both species; a system of zoning (industrial vessels kept offshore), bans on certain techniques (e.g. monofilament nets) and the possibility of establishing 'repos biologiques' (biological rest periods) in certain zones and/or seasons. There seemed to be, however, some scepticism about how successfully these are applied and enforced. Certainly monofilament nets are visible everywhere, even though theoretically banned.

Most (all?) the stakeholders we talked to agreed that the sardinella stocks are in trouble and need better management. Many, however, were not ready to admit that the pirogue fishery is part of the problem, despite the enormous amount of fishing effort which is apparent. Industrial fishing, and Senegal's licensing of foreign-flagged vessels was often blamed, as well as climate change. (These no doubt play a role.) It was acknowledged by all that the direct reduction of fishing effort (reduction in the number and/or activity of pirogues) is very difficult, and preferred options for additional management included stricter size limits and additional time / area closures, particularly to protect spawning and juveniles.

We visited the offices of CSRP (Commission Sous-Régionale de Pêche). They were helpful and well-informed but did not seem very active – certainly not in a position to take on any management responsibilities at regional level.

Conclusions and next steps

- The system for partitioning raw material from the fishery between different supply chains seems well set up to reduce waste to a minimum (given that hygiene conditions and handling practices on board and at landing sites are generally poor) while ensuring that fishmeal is secondary to human consumption wherever possible.
- Unlike Mauritania (in the past at any rate), the impression is not one of over-capacity or lack of control for the fishmeal sector – on the contrary, the sector seems sustainably integrated into the wider industry.
- Regarding the pirogue fishery, by contrast, it is clear that i) there is massive overcapacity; ii) the sector is not controlled as to fishing effort, nor are existing regulations well enforced; iii) the fishery has a big impact on surrounding ecosystems (Mauritania, Guinea Bissau) as well as Senegalese waters; and iv) the fisheries catch statistics from Senegal can be regarded as highly uncertain, bordering on fictional.
- The problems in the fishery are big and cannot be addressed in their entirety by a FIP, but there are some practical things which could be done which would really improve the situation; some similar to successful actions in Mauritania: e.g. supporting the system of enqueteurs with more resources, better equipment and digitisation; updating the pirogue census using more modern techniques such as drones; using DNA analysis to ensure there are no protected species in the fishmeal; supporting the Ministry to start implementation of the sardinelle management plan etc.

The next steps I suggest are:

1. Preparing the documentation to set up a FIP under the MarinTrust Improver Programme (fishery assessment and workplan), based on data provided by Afric Azote initially
2. Engage with the other three factories in Senegal and other supply chain participants to gauge interest in participation
3. Search for sources of funding to support management of the FIP and implementation of the workplan
4. Work with CRODT and the Mauritania FIP to pilot activities to improve data collection as a first step on the ground – I suggest initially at Saint Louis where the Mauritania FIP (which has some resources) has an interest in supporting improvements
5. Support the participating factories for MarinTrust audits

Step 1 is underway (by Jo, as part of the grant kindly provided by the Global Marine Ingredients Roundtable); Step 2 is to be undertaken by Afric Azote; Steps 3 and 4 will be discussed and as far as possible initiated by the Mauritania FIP team; Step 5 can be initiated by Afric Azote, with participation of other factories down the line, should they choose to do so.