**Provisional title: Female fish processors in West Africa: supporting local and sustainable entrepreneurship among small-scale female fish processors**

Possibly to submit as a short piece (4,000-6,000 w) to *Marine Policy*

**INTRODUCTION**

Processed fish (through smoking, drying and other forms of processing) is a crucial source of food in West Africa. It provides a crucial source of animal proteins that is easily accessed and stored for better and more complete diets (refs). Overall, processed fish in the region has a multifaceted role, such as providing economic opportunities for small-scale actors who are often at the margin of the fisheries value chain such as poor rural women (refs), and fulfilling their social and cultural roles within communities (refs). The networks and trading patterns that these women create have received growing attention by researchers; however, the conditions that enable their operations to sustain themselves and potentially grow, that is, the entrepreneurial aspects of their operations, have been less studied. This article therefore shifts the attention to the entrepreneurial qualities of female fish processors, and analyses things such as skills, organizational capacity within the unit of production, and innovation that together enable these women to continue with their operations.

The processed fish sector across sub-Saharan Africa is today under pressure by current policies in ocean development. These factors are multifaceted and vary depending on the region – while the in Western Indian Ocean region, questions related to maritime security and securitization of the ocean are more compelling and a key factors driving marginalization of small-scale actors (refs), in West Africa, fish processing for the production of fishmeal and fish oil for exports is perhaps the most important threat to the health of the small-scale fisheries sector along the value chain, including fish processing, posing obstacles and often unfair competition to small-scale female fish processors who compete for the same resources, above all, small pelagic fish (refs).

Focusing on the conditions that enable female fish processors to conduct their entrepreneurial operations, and potentially grow within current constraints sheds light on the question of growth that today is hotly debated in ocean governance (refs), that is, the possibility to pursue and achieve alternative and more equitable models of development for sub Saharan African fisheries sectors that are more sustainable and beneficial for the poorest and most vulnerable (refs). Article on gleaners (weeratunge), references on Blue Justice etc..

Through analysis of women female fish processors as rural entrepreneurs, the constraints they face regionally, and the paths through which they mobilize resources, this article intends to support more friendly entrepreneurship policies that can align the growth of the processed fish sector to national and global objectives of growth in the blue economy while providing benefits to those who to date have been left out. With rapid advancement having been made in economic reforms to support entrepreneurship development and self-employment in Africa, a number of conditions from poor access to credit to reliable provision of services (water, power supplies) continue to hamper development in this direction (Allam Ahmed). This article sheds light on the conditions within which women operate with the focus on the two West African countries of Ghana and Senegal; these are both heavily involved in market and trade networks, both regionally in West Africa, and globally, particularly in the fish meal and fish oil industrial sector, but at different degrees. The article analyses some of these trends before moving on the more qualitative analysis of the operations of female fish processors by bringing in some insights from anthropology of entrepreneurship, to delve into the close links between the economic, social, and cultural aspects of entrepreneurship within the fish processed fish sector in the West African region.

1. **BRINGING IN INSIGHTS FROM ANTHROPOLOGY OF ENTREPRENEURSHIP IN AFRICA**

Bringing anthropological insights from entrepreneurship studies into the analysis of women processors and their operations helps delve into the resourcefulness of these small-scale actors of the fisheries value chain, and the context in which they mobilize resources and orient themselves towards growth where conditions allow. Pioneering work by the anthropologist Polly Hill on the agency of cocoa farmers as rural entrepreneurs in West Africa (Dimand and Saffu) have contributed to open a new field in anthropology, that is, the anthropology of entrepreneurship, which has been growing with new niche studies, from family business (Rosa and Caulkins; rutherford) to indigenous sustainable entrepreneurship (Rosa and Calkins).

The most important contribution of an anthropological approach to the study of entrepreneurship is the analysis of how context enables the entrepreneurial orientation of people, families or firms. Verver and Koning refer to context with the word ‘interconnectedness’ as the ‘quintessence’ of entrepreneurship made of socio-cultural ties, interrelationships between micro meso and macro levels, and connections between the past and present; these together contribute to explain how entrepreneurs “do” context by “enacting the sociocultural ties that embody this context”. Nowhere more than in Africa, sociocultural ties are important in different realms of life, including entrepreneurship; entrepreneurial activities based on different sociocultural ties thrive across the continent, including in areas with limited resources, in sectors as diverse as the alcohol economies (Willis), to garments and shoes in Nigeria (Meagher), and the livestock trade, both in West Africa (refs) and East Africa (Allegretti).

Along with ties and networks, other things are equally important for these women to grow their enterprises, such as skills, organizational capacity, that is the capacity to align the operations to the socio-cultural context in which they are enmeshed, and innovation. Anthropological work not directly related to entrepreneurship but useful to analyse the operations of these women processors in West Africa is equally important in this regard. Ingold talks about the practice of ‘enskillment’, that is the human capacity to develop abilities through ‘practicing in context’; this is important as will be seen for women processors who learn the skills needed for fish processing since young age through traditional paths of knowledge passed from mothers to daughter. Connected to skill(s), is growth, enabled by concerted arrangements within a unit (e.g. a family) and the mutual learning of new skills (Gudeman 2001). The questions of skills, organizational capacity and innovation play a fundamental role in the entrepreneurial operations of the women as will be seen below in the case studies.

1. **METHODS**

A mixed methods approach was utilized in this article. Initial quantitative analysis from existing datasets was conducted to analyse some of the global trends …

Quantitative analysis was complemented and triangulated with qualitative research with semi-structured interviews, participant observation, and informal discussions with female fish processors in Ghana and Senegal…. (give more context on how we did this..say also that in Senegal we interviewed local activists..).

The approach utilized for reporting the data on female fish processors is on case studies of selected women from those interviewed focused on the aspects highlighted above, such as skills, organizational capacity, and innovation. Case studies methods is a well-developed approach in social sciences and allows to report crucial information within the single case, and key paths and trends emerging through the sequence of the different cases (find references on case studies approach in social sciences).

Say that qualitative data was collected as part of the FAIRFISH and *NOTRE POISSON* projects.

1. **NATIONAL, REGIONAL AND GLOBAL TRENDS AFFECTING FISH PROCESSING IN WEST AFRICA**
2. **DOING ENTREPRENEURSHIP**

**GHANA**

Below are three accounts from three different female fish processors in Ghana (only smoked fish, not dried). The accounts were ordered according to the size/scale of their enterprise, starting with a processor from a rural (or peri-urban) context (Apam and Mumford towns in between Accra and Cape Coast) with a relative small size and dependent on local networks only, and finishing with a medium-size enterprise of a woman and her mother in Tema market who sell smoked fish, having registered their brand, and packaging fish for sales countrywide.

**Case 1: Joyce in Apam/Mumford (rural/peri-urban)**

Joyce (pseudonym) is an elderly woman in the small town of Apam in coastal Ghana, around halfway between Accra and Cape Coast. Her socio-economic situation is average; she s not wealthy, not even by local standards, but she s doing well and is able to fulfil her basic needs and of her family, thanks to her fish processing business. She has processed fish for all her life, ever since she was a 11-year-old girl, when she started learning the fish smoking skills from her own mother (who in turn had learned from her mother). In fact, Joyce’s situation is quite representative of the socio-economic status of most women involved in the fish processing business in the context of semi-rural or peri-urban coastal Ghana (this is based on discussion with people, my own observations, and what my research assistant (an employee of the local government in Apam) told me).

Joyce’s age means that she has personal experience of technological transformation in fish processing, mostly the transition from the traditional mud oven to the so-called ahotor or ‘chorkor’ oven that is predominant all over coastal Ghana today. Joyce recounted how hard it was to smoke fish with the traditional oven (quote here). The traditional ovens are still around in Apam and the close by town of Mumford, just a 30-minute drive from Apam. Joyce pointed that the two ovens are used for different purposes; the ahotor oven is used by processors who want to sell fish to higher-end markets, because the fish smoked in ahotor oven is better quality than the traditional oven which is used to smoke fish for local markets and for storing (smoking) fish for home consumption; not everybody can afford a ahotor oven because you have to hire labour to build it, and even when you get a modern oven it takes more time to smoke fish with ahotor, so people still use the traditional oven. She retained her traditional mud oven and manages her activity with the use of the two ovens according to her needs, between smoking fish for other markets and fish for local markets or household consumption; people locally don’t mind fish smoked with mud oven, whereas it would be hard to sell fish smoked with mud oven in higher end markets.

Joyce gives priority to local fish for her business if fish is available, even though seasonality in availability of fish significantly affects her operation. When no fish is available locally, she can travel to other markets to gets the fish she processes such as Sekondi in the western region or Elmina in central region (I need to check these names..), even though travelling to supply her business requires some amount of planning including saving up enough cash to make a sizeable purchase, hence cannot be done on a systematic basis. Her market for sales is limited in size and geographical scope, also in part due to her limited skills that are needed for expanding on the business (not the processing skills). The question of ‘skills’ (not smoking) came up because Joyce told me how an important development organization (USAID) went to Apam to train local women in accounting, record keeping, market research, advertising as part of poverty alleviation efforts among local rural women in Ghana. Joyce was very happy to have received the training and she said that helped her a lot as they (the local women) normally would not monitor expenditures, or calculate economic gains etc..

In the end, the type of business that Joyce and other women do in the area is anchored to traditional channels and networks of knowledge passing on from generation to generation, or mutual support among local women who help each other loaning small amount of money that they can return on a long-term basis with very low interest rates. The overall enterprise is not so much oriented towards growth as conditions for expansion are not available locally, given the limited exposure to broader networks, but rather is more akin to an income generating activity for poverty alleviation.

**Case 2: Salma in Chorkor (biggest processing site in Accra and residential neighbourhood)**

Salma (pseudonym) is a 40-year-old woman who lives and works in Chorkor, the biggest processing site in Accra where people also reside. Salma’s operation/enterprise is larger in scale as compared to Joyce’s in the previous case. Just like the previous case, and as most other women who are in the fish processing, Salma has inherited the business from her mother and learned the skills from her since she was 10-11 years old, and through quite strict training that was part and parcel of her mother’s parenting role (quote: “if you do it wrong you get beaten up by your parents”), and she now tries to pass the knowledge and skills on to her own daughters so that “when god calls me, they can take over from me”.

The main advantage that allows Salma to scale up her operation is given by the fact that she can easily access constant fish supplies by living close to some of the main fish markets in Accra (add names of these markets here), and not too far from Tema, the biggest fish market in Ghana. This is a major difference with the previous case from Apam/Mumford where fish supplies are less reliable, but on the other hand, requires adjustments for better efficiency to keep the pace. One of the main constraints to growth is the availability of firewood; you need to dry firewood for six months before you can use it for optimal fire and good quality smoked fish if you want to compete in markets such as Tema, and the rainy season poses quite an important obstacle to that.

The use and management of the oven for smoking also requires coordination for moving the different layers up and down on the oven at the right time of the smoking process (explain the 2 phases here): “you need knowledge, skills and physical strength for this business” she said, as well as the help of others. To be more efficient in her operations Salma has had to organize her time and that of her daughters and husband around shifts for a continuing operation of fish smoking; she arranges shifts up to a week in advance accounting for her other commitments, her husband’s and daughters’; her operation has become a family run business rather than something that she does on her own as other women in rural contexts.

**Case 3: Aisha and the mother-daughter enterprise in Tema (biggest market and fish processing site in Ghana, including industrial processing)**

Aisha (pseudonym), a 40/50-year-old woman fish processor, has established a successful business in the Tema market near Accra in partnership with her mother, a long-term fish processor since her young age. They have rented a site within the Tema market, and own processing equipment with around 20-30 ovens. They have a number of people working under them or in partnership with them on different contractual (informal) basis; some work for them for wages, processing the fish that Aisha and her mother sell locally, nationally, and even to global markets – others rent an oven to process fish that they then sell through their own market channels and networks - others gravitate to the site in search of short-term labour and/or to enhance their skills in fish smoking.

Aisha and her mother mostly process small pelagic fish such as herring (are herring small pelagic?) bought from local fishermen, but also, being in Tema gives them easy access to imported fish from abroad, such as frozen mackerel from Ivory coast (at the time I was doing fieldwork mackerel from Ivory Coast was everywhere..). They have been able to register their own brand, so fish is packaged and shipped to outside markets as well in UK, Germany, Canada but they also sell locally in the Tema market or other markets in coastal Ghana, and to middlemen who make their supplies from them. They also make fish powder with herring and shrimp that they sell internationally.

The mother-daughter association is a central feature of their operation in Tema. The mother has been a fish processor since her young age, inheriting in turn the skills and knowledge form her own mother, following the kind of knowledge generational transfer that we saw in the previous cases. Having been in the business for decades has allowed the two women to gain an in depth understanding of the business, both the technical aspects around smoking, but also the social and political aspects around gaining support and help from stakeholders in the field. Her mother was able to obtain a license from the local authorities to utilize the site in Tema, which is very competitive, and once obtained that they were able to secure initial capital from foreign donors (Canada) to build some facilities (around half of the ovens currently in use).

Rooted in this generational passing on of traditional knowledge and skills around fish processing, theirs is an enterprise oriented towards growth through technological, social and economic innovation (lots to say here around how innovation happens…), but they have taken it to the next level and they now organize trainings to young women (who pay to be trained) who want to break into the business. After years of ‘hard work’ (quote) doing the processing herself, Aisha’s mother’s role has shifted to training, and the money they make from it other goes into the maintenance and possibly expansion of the site adding on the money they obtain from renting out the ovens and sales of fish. In fact, the mother has become a ‘trainer of trainers’ with a team of trainers under her, each trainer with her own students, with herself as their head. The mother-daughter enterprise operates at the crossroad of traditional knowledge and networks which have provided them the foundation for the business, and international ties which allow them to be oriented towards growth.

**SENEGAL**

Interviews with local activists in Senegal pictured a dire situation in which female fish processors operate, owed to the presence in the country of fish processing factories that export fishmeal and fish oil outside the country. These factories pose serious, and unfair, competition to local women, for the same fish that they process, above all, the small pelagic sardinella. Prices have skyrocketed for this fish, given the high demand of fishmeal and fish oil from outside. As one local activist argued: “the price of fish has become a serious obstacle to our women. Price has become higher and higher in the last decade, but after covid the situation has deteriorated even further; before covid no one thought that fish would become this expensive. Senegal depends on fish, and without fish there is no Senegal; our youths are risking their lives crossing the sea and searching for a better life in Europe. If the trend continues, I predict that in 5 to 10 years there will be no more Senegal”. Another activist highlighted how the competition for fish has cased prices to rise with the intervention of fish traders who act as intermediaries between fishermen and factories’ managers: “our local fishermen prefer to sell their fish to the intermediaries because they can make a much bigger profit compared to selling to women processors; factories managers enter in partnership with these intermediaries cutting off women and neutralizing their purchasing power”. A third activist I the community of Kayar provided more details about the deceitful behaviour of factories managers to prevent organized action against the situation: “some factories managers pay some of the local leaders around here to keep their mouths shut so that the community remain unaware about the situation. Local leaders have the capacity to lead opposition and organized action against the factories, but they prefer going to drink tea instead of mobilizing the local population”.

The presence of fishmeal and fish oil factories in the country has posed serious obstacles to some of the factors that enable entrepreneurship at local level among female fish processors, given the unfair competition over price of fish. The traditional channels through which knowledge is passed on from one generation to another is seriously compromised, as are the skills that women have in processing fish, given the unavailability of fish to process. As the two case studies below show, the processed fish sector I the country is experiencing processes of reversed growth, both among individual fish processors and collective enterprises which in Senegal went through substantial expanding prior to the developing of the fish mean and fish oil industry.

**Case 1: Mama Freda in Kayar: an independent fish processor**

Mama Freda is a 50-year-old fish processor born in the community of Kayar. The community is particularly known to have witnessed some organized action against local fish processing industries; yet, the situation in the community is particularly disheartening with the processing sites along the beach being no longer utilized for the processing (drying). Mama Freda ha been processing fish since young age, having learned the skills, like most other women in the sector, from her own mother. When interviewed, mama Freda was under the shade of one of the many shelters on site, and asked how things have developed over the years when it comes to the fish processing business she replied: “you see these mattresses? Before, we didn’t have these mattresses here and no one would be sleeping on them like now. People used to be busy all the time, and there would be no time to sleep like now”.

Asked about how she had entered the business of fish processing, she replied that, like most other women in the community, she had learned from her own mother, who, in turn, had learned from her grandmother. However, she is sceptical about the possibility to passing on her knowledge and skills to her own daughter, and many of her co-workers feel the same: “We no longer bring our daughters here; there is no point. If we brought them here they would be sleeping too on these mattresses and learn nothing without fish to process. I have so much knowledge to pass on, but without fish that has become impossible, and all this knowledge will be wasted”. For her own children, she predicts a life outside of the fishing industry: “when I was young boys would normally become fishermen and girls would become fish processors; that is how it has been for generations. But now, I think its better for our children to learn different skills and make a life in other sectors; maybe they could become tailors or open small businesses”.

**Case 2: Women’s collective**

(Pseudonym) group is a women fish processing collective group well established in the community of Kayar. At the time of the visit to their processing site, the head of the group was present, along with a few other women members (5-6). The head of the group has been with the group for many years, having contributed to the set up of the enterprise and its growth; however, these days, to her regret, the enterprise has been shrinking substantially in terms of number of members active on site: “we used to be over 200 women here, doing our hard work everyday. But now so many have given up; they have spread all over looking for petty work. They do work outside of the fishing industry where their skills are not useful, and they get a lot less in terms of income from this unskilled labour”.

The enterprise had been expanding before the growth of the fishmeal and fish oil industry in the community. They received occasional funding from outside and were able to purchase equipment and build decent facilities, which are now for the most part unutilized because of scarcity of fish to process (picture of the equipment). These equipment and facilities required additional skills and knowledge to be used efficiently, and training was provided to new members. Also, the expansion of the enterprise required more complex organizational structure to support production which enhanced the organizational capacity of the unit; a manager to ensure product quality was selected among the women, and today, as … remarked, the focus is on product quality and hygiene in order to have a final product that can beat the competition and get more customers. However, as Mama .. remarked, the growth of the enterprise in this direction was enabled by the in depth knowledge of fish processing that the women had before joining the enterprise: “all these machines and facilities would not work without our prior skills and knowledge; we knew how to process fish already before these machines came because we learned the hard way from our mothers and grandmothers, so when the machines came we just had to update ourselves, but it wasn’t hard”.

All the progresses made towards the growth of the enterprises have vanished however in conjunction with the stiff competition for fish, and the skills enhancement that has enabled the growth of the enterprises are in jeopardy. Women continue to bring their daughters to learn the business in the hope that the situation can change and something will be done to reduce the negative impact of the fish processing industry in the country; however the future is grim and dependent on help that can come form the outside. Asked about growth (of the enterprise, she said: “yes, I think we can grow; we haven’t lost faith yet, that is why we still bring our daughters here. We have our knowledge and experience, and if god wishes, some help can come from the outside so that we find a way out of this situation”.

1. **POLICY DISCUSSION**

-support entrepreneurship 😊