Towards aquatic food sovereignty? Gendered market relations and the socio-ecological politics of Ghanaian aquatic food systems

Thesis submitted by Sophie Standen

Lancaster Environment Centre

Lancaster University

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Lancaster Environment Centre | Lancaster University

Abstract

Aquatic food systems constitute a vital source of food, nutrition, livelihood, and culture for millions of people globally. Small-scale fisheries (SSF), while at times neglected, play a key role in local and global aquatic food systems. Yet, SSF are under threat due to climate change, blue economy initiatives, and industrial overfishing. My thesis examines the political and socio-ecological power dynamics that mould Ghanaian small-scale fisheries and their aquatic food systems. Employing insights from critical marketization literature, heterodox political economy, food sovereignty, and feminist theories, I empirically explore and theoretically situate the implications of industrial overfishing on Ghanaian small-scale post-harvest fishery. Firstly, I examine the relationship between oceanic capital accumulation in the industrial fishing sector, and the subsequent gendered implications of low fish landings in the Ghanaian small-scale post-harvest sector. Secondly, I investigate how industrial overfishing shapes the dynamic and heterogenous assemblage of aquatic food markets 'in-the-making', and the governmental effects of markets on small-scale post-harvest social relations. Thirdly, I centre how capital accumulation in the industrial fishery unequally develops and transforms Ghanaian small-scale post-harvest market relations, to the detriment of Ghanaian territorial aquatic food markets. Examining the impacts of oceanic capital accumulation on the small-scale fisheries sector can contribute towards building on a tentative but established literature which details food sovereign approaches to fisheries, but currently omits how capital shapes inequities in fisheries systems. Drawing on an ethnographic, qualitative approach to research, I empirically and theoretically deconstruct the social, environmental, and economic processes that dynamically constitute aquatic food markets in Ghana. Understanding how oceanic capital accumulation shapes post-harvest relations and concomitant aquatic food market exchange has been underacknowledged in heterodox political economy, political ecology, and food sovereignty literature. I contribute to explaining the contemporary contradictions and complexities that sculpt inequalities and environmental degradation in fisheries and their respective aquatic food systems.

Of the Empire

We will be known as a culture that feared death
And adored power, that tried to vanquish insecurity
For the few and cared little for the penury of the
Many. We will be known as a culture that taught
And rewarded amassing of things, that spoke
Little if at all about the quality of life for
People (other people), for dogs, for rivers. All
The world, in our eyes, they will say, was a
Commodity. And they will say that this structure
Was held together politically, which it was, and
They will say also that our politics was no more
Than an apparatus to accommodate the feelings of
The heart, and that the heart, in those days,
Was small, and hard, and full of meanness.

---Mary Oliver

"Do not seek too much fame,
but do not seek obscurity.
Be proud.
But do not remind the world of your deeds.
Excel when you must,
but do not excel the world.
Many heroes are not yet born,
many have already died.
To be alive to hear this song is a victory."

---Traditional West African song

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Author's declaration

I declare that this thesis is my own work and has not been submitted in substantially the same form for the award of a higher degree elsewhere.

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Chapter 2 in this PhD informed the following article (in revision):

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Acronyms

Cultural Political Economy -- CPE

Distant Water -- DW

Exclusive Economic Zone -- EEZ

Food and Agricultural Organisation -- FAO

International Monetary Fund -- IMF

Inshore Exclusion Zone -- IEZ

Individual Transferable Quotes -- ITQ

Illegal, Unreported, and Unregulated fishing -- IUU

Maximum Sustainable Yield -- MSY

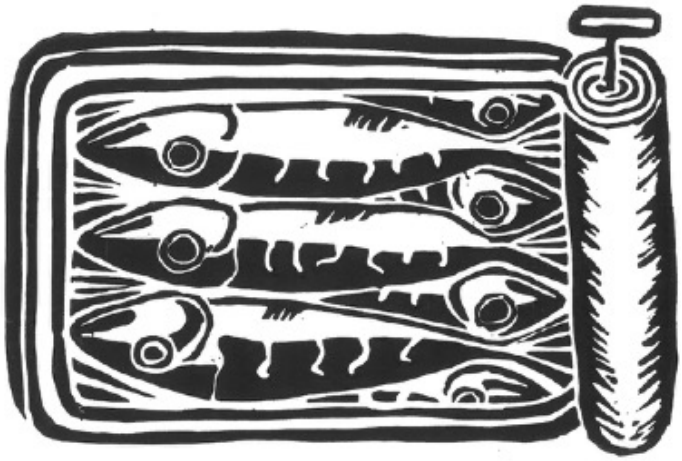
Non-Governmental Organisation -- NGO

Research Assistant -- RA

Safe Fish Certification and Licensing Scheme -- SFCS

Small-scale Fisheries -- SSF

United States Agency for International Development -- USAID



Fish as food. Credit: Nadia Hamilton

Chapters 1- 4: Background literature, theory, and methodological approaches to research

1. Chapter 1 – Introduction

Our global food system is marred by overlapping and interlocking ecological crises, concentrated corporate ownership, and increasing inequities that are produced through and with the production, exchange, and consumption of food (Fairbairn, 2008; Fairbairn, 2012; Patel, 2012; Clapp, 2021; IPES-Food, 2023). In 2023, it was estimated that 28.9% of the global population is moderately or severely food insecure, of which, an estimated 10.7% are severely food insecure (FAO, 2024). Intensified systems of food production, on both land and at sea, are a significant and primary driver of global biodiversity loss (Pauly, 2007; Benton *et al.,* 2021). Ocean acidification due to climatic change negatively affects the reproduction of calcifying organisms such as plankton, bringing disastrous effects to fisheries and aquatic food systems (Longo *et al.,* 2015). Poor diets are also a significant precursor to the global burden of disease (Webb *et al*., 2020), with approximately 3 billion people worldwide suffering from disease-related effects of malnutrition (FAO, 2020a). How, then, have we arrived at this point of profound ecological fragility and polarising food-related inequities in the contemporary world?

One answer is that since the end of the Second World War, many of the world's food systems have undergone transformations through industrialisation (Lang, 2003). In our industrialised food system, priority is given to producing a limited range of food commodities in large volumes, where powerful corporations dominate the food production-consumption nexus (Clapp, 2021). Due to a historical and contemporary focus on food productivity, food has also become both 'cheap' and unaffordable through exploitation, and profit maximization imperatives now significantly structure the processing, exchange, and consumption of food (Lang, 2003; Friedmann, 2005; Patel, 2012; Patel & Moore, 2017; Schutter, 2019). In agriculture, food production has largely been boosted through the increased use of fertilizers and pesticides, the growth of extensive irrigation infrastructures, as well as technological and scientific advances (Gliessman, 2015). For fisheries, trends have largely followed a similar pattern, where improved technology amid the industrialisation of fishing fleets fuelled "the incredible growth in the global catch of fisheries from the 1950s to the 1980s", before fishing catch levelled off (Mansfield, 2010, p. 87). Despite catches levelling off, exports from the aquaculture industry trebled between 1996 to 2019, and capture fisheries exports also grew by 74% (Gephart *et al,* 2024).

The industrialisation of fisheries has meant that dominant fisheries management paradigms have not developed around an understanding of fish as food (Bennett *et al*., 2021). Fisheries have instead been managed for maximum economic gain through implementing private property rights (such as in the form of Individual Transferable Quotas (ITQs) (Cunningham, 2009; Cardwell, 2015) and through encouraging further industrialization as a means of state-led modernisation and economic development (Mansfield, 2010). The mantra of productivity, efficiency, and the ignorance of 'fish as food' also has echoes in modern-day policy through the implementation of 'Blue Growth' or 'Blue Economy' initiatives.

The development of the blue economy has resulted in a surge of interest in mining rare minerals in the deep sea, as well as the continued development of tourism, oil and gas expansion, aquaculture, and conservation through Marine Protected Areas (Barbesgaard, 2018). Despite this, the blue economy is still seen to offer both 'sustainable development' and economic growth (UNECA, 2016). Indeed, expansion of blue economic projects is often justified to mitigate climate change impacts (through for example Blue Carbon), top-down conservation initiatives (to save endangered species), as well as encouraging further industrialisation and aquaculture development to 'feed the world' (Barbesgaard, 2018). As such, in blue economy plans, the "hegemony of capitalism is further embedded into the oceans" (Schutter *et al.,* 2021, p. 2). This political economic project "shapes the sea into a commodity that is inert, without place and history" (Childs & Hicks, 2019, p. 330), with states, corporations, and NGOs leveraging blue economic frameworks as a new means of injecting financial capital into marine areas (Barbesgaard, 2018; Christiansen, 2023).

Blue economic initiatives, amidst the broader industrialization of fishing activities, and increased corporate encroachment of ocean space, have also concentrated control over the ocean and its resources into the hands of few 'keystone actors' (Österblom *et al.*, 2015). In current terms, this means that 65% of flags used by reefer vessels (cargo ships which typically transport perishable cargo), were identified as only belonging to three countries (Russia, Panama, and China) (Bengtsson *et al.,* 2024). Moreover, thirteen corporations control 11-16% of global marine catch and 19-40% of the largest and most valuable stocks. Five companies control 34.8% share of salmon aquaculture production (Österblom *et al.*, 2015).

Marine aquaculture is also seen as an important part of the blue economy (Campbell *et al.,* 2021), The main beneficiaries of the aquaculture industry are four main seafood companies (Mowi, Skretting, Cargill and Biomar), who all source fish oil from North-West Africa (Feedback, 2024). The growth of the salmon farming industry in the global North has had dire and unequal consequences for aquatic food systems in West Africa due to its reliance on small pelagic fish as fish feed or fish oil (Deme *et al.,* 2022). Small pelagic fish, such as herring, anchovy, and sardinella, are a vital forage fish in many aquatic ecosystems, as they are often the prey of larger, predatory oceanic animals and fish (Feedback, 2024). The continued extraction of small pelagic fish due to the Fish Meal and Fish Oil (FMFO) and aquaculture industry has multiple adverse effects for oceanic ecosystems and aquatic food livelihoods in West Africa (Feedback, 2024).

Despite the growth of blue economic initiatives, small-scale fishers and traders continue to form a significant part of fisheries workforce, yet are often undervalued in policy, and face increasing marginalization (Cohen *et al*., 2019). The future-oriented framing of the blue economy portrays the small-scale fishers who rely on the ocean for their food and livelihood as economically inefficient, environmentally damaging, and as such, in need of the intervention of capitalist market development forces to streamline efficiency and maximize returns (UNECA, 2016). A core tension thus exists in contemporary fisheries scientific management paradigms, as well as in blue economic initiatives, which seek to conserve fisheries populations while at the same time striving to develop new knowledge and technologies in which to 'sustainably' exploit such populations to gain 'maximum productivity' (Hubbard, 2014; Barbesgaard, 2018)[1].

Emphasis on attaining maximum productivity in food systems for a growing population is nothing new. Indeed, improving food productivity through technological innovation is still widely understood as the solution to the 'impeding hunger catastrophe' facing global food systems (McVeigh, 2025). Amartya Sen, in his ground-breaking work entitled *Poverty and Famines*: *An essay on Entitlement and Deprivation* (1983), however, discredited the notion that increased food supply and productivity would counter severe cases of hunger, malnutrition, and famine. Through

[1] This tension between the ocean as a source of profit and space of conservation is epitomized through the fisheries management tool, Maximum Sustainable Yield (MSY). Here, a focus on efficient (economic) fishery resource exploitation, through demarcating the maximum biological limits of fisheries populations with mathematical equations, has become a useful tool for state-led appropriation of fisheries resources (Hubbard, 2014). MSY places value on improving the productivity of fish stocks for the maximum production of fish (within biological limits), so that that maximum wealth can be obtained from such efficiently managed fish populations (Hubbard, 2014).

careful analysis, Sen showed how even when food was widely available, famine situations still arose because many people were still not able to access food. Sen explored how people who experienced severe hunger often did not have entitlements to food, due to multiple intersectional reasons, such as whether they owned productive land, or whether they were employed (1983). Sen's (1983) work reinvigorated the politics of hunger and malnutrition through importantly discrediting food productivity theories, by showing how political, economic, cultural, and social factors were intrinsic to who was able to access a nutritious, ample, and healthy diet.

1.1. Fish, food, and industrial fishing in Ghana

Historical, colonial legacies in the development of fisheries science mean that fish is often viewed as a productive, economic, and/or conservation resource instead of food[2] (Hubbard, 2014; Silver *et al*., 2022). These historical factors, combined with a contemporary emphasis on aquatic food productivity to counter hunger and malnutrition, means that attentive research focus regarding the political, ecological, and economic drivers which shape inequalities in aquatic food systems has been insufficiently researched. This is particularly in comparison to the more commonly studied politics of land ownership, 'power-grabs' and agricultural relations (Barbesgaard, 2018). This lack of research engagement with the political economy of fish as food is surprising, as noteworthy evidence exists showing that fish and other aquatic foods[3] form an integral part of the diets of billions of people around the globe (Hicks *et al*., 2019).

Fisheries are vital to globalised and localised aquatic food systems. Within West Africa, approximately 6.7 million people rely directly on fish for their food and livelihoods (Belhabib *et al*., 2015). Moreover, small-scale fisheries supply approximately 2.3 billion people with 20% of their dietary intake for six key micronutrients (Basurto *et al.,* 2025). It is also estimated that 90% of fish workers worldwide are employed by small-scale fisheries (Virdin *et al*., 2023). There is therefore increasing competition over the ocean's limited and threatened resources; a large, unequal, and increasingly intertwined tension between those who rely on fish for food and livelihood, and those who construct the ocean as a new 'economic frontier'. The growing capitalist

2. Or other cultural, spiritual, and medicinal understandings, for example.
3. Here, I take aquatic foods to "include finfish, crustaceans (such as crabs and shrimp), cephalopods (octopus and squids), other molluscs (clams, cockles and sea snails), aquatic plants (water spinach; Ipomoea aquatica), algae (seaweed) and other aquatic animals (mammals, insects and sea cucumbers)" (Golden *et al*., 2021, p. 316).

encroachment of ocean space and resources through the ideal of the blue economy, particularly threatens the food security of the very people who need fish the most, contributing particularly to the marginalisation and dispossession of small-scale fisherfolk (Barbesgaard, 2018).

Within the West African country, Ghana, fish forms approximately 50-80% of consumed animal protein (Sumberg *et al*., 2016). The fisheries sector in Ghana comprises of small-scale, semi-industrial, and industrial sectors. Marine and freshwater fish is available in many differing forms (smoked, dried, fresh, amongst others) throughout the country, with small pelagic fish such as sardines, chub mackerel, anchovy, and horse mackerel comprising most of the marine catch (Hasselberg *et al*., 2020). Small pelagic fish are heavily relied upon for food and livelihood in the Ghanaian small-scale fishery (Asiedu *et al*., 2021). Approximately 55% of small pelagic fish consumed in Ghana are landed fresh by small-scale canoes, while 26% come from the inshore fleet, 15% from imports and 4% from the industrial sector (Asiedu *et al*., 2021).

In Africa, the blue economy is envisioned as a means of developing the oceans into economic productive entities, while fostering conservation and social safeguarding measures (European Investment Bank, 2021). Ghana is not immune to blue economy initiatives (Ayilu *et al.,* 2023), with the blue economy being identified in the Ghanaian government's National Fisheries and Aquaculture Policy as an "integrated approach to economic development and sustainability" (MoFAD, 2022, p. 31). Part of the development of the blue economy in Ghana is the encouragement of further industrialisation of fisheries (Ayilu *et al.,* 2023). This also comes amidst an increasing emphasis on private sector investment for the sustainable management of Ghana's fisheries and conservation projects, implementing value addition policies in the post-harvest sector, supporting the growth of aquaculture and sustainable capture fisheries, promoting ecosystem services which contribute to livelihoods, and combatting Illegal, Unreported, and Unregulated (IUU) fishing (MoFAD, 2022). However, in line with Schutter et al's (2021) observations, the concept of the blue economy in Ghana, as in the other countries in Africa, remains a contested and vague vision with numerous definitions. Only a small section of Ghana's fisheries management plan (MoFAD, 2022) is dedicated to the blue economy, with a notable lack of detail in regard to Ghana's specific blue economic policies.

General policy attention to combatting IUU fishing in Ghana's blue economy generally disregards the high prevalence of IUU fishing which occurs in the industrial bottom-trawl sector (Ayilu *et al*.,

2023). Unequal power dynamics, particularly between the foreign-owned industrial bottom-trawl industry and the small-scale fishery mean that small-scale fishers face increasing marginalisation, particularly, but not only, due to IUU fishing[4], which is particularly common in the industrial fleet in Ghana. The industrial fleet in Ghana often partakes in illegal methods of fishing (i.e., fishing in the Inshore Exclusion Zone (IEZ), and the use of incorrect net sizes) through targeting the small pelagic fish so relied upon by the Ghanaian artisanal fisheries sector (Teye *et al.,* 2020; EJF, 2022). High levels of industrial IUU fishing mean that small pelagic fish landings in the Ghanaian small-scale sector have seen a steady decline and stagnation over the last two decades (Asiedu *et al.,* 2021; EJF, 2022). The tensions between the ocean as a site for economic development through fishing industrialisation, and the importance of fish as food, are therefore particularly stark in for those in rely on fish for food and livelihood in Ghana.

While dominant fisheries management paradigms have not traditionally understood fish as food, it is evident, however, that fish is increasingly recognised by governmental authorities and academics as a key source of food and nutrition, particularly where a Malthusian framing of a growing human population is depicted as a threat to aquatic food security (i.e., Limburg *et al*., 2011; Merino *et al*., 2012; Gordon *et al.,* 2018; Bell, 2019; Norman *et al.,* 2019; WorldFish, 2023). Yet, the conditions of fish production, exchange, and consumption are as much subject to the imperatives of capital as agricultural commodities (De Schutter, 2019). Malthus's oft-critiqued, apolitical framing of the problems presented by human population growth, and its continuation to present-day problematizations in fisheries management policies and literature, obscures the politics of inequity and ecological degradation in fisheries and aquatic food systems worldwide. Evidence from Ghana suggests that a Malthusian explanation of 'crisis' in fisheries and aquatic food systems is fully incapable of explaining the how and why of ecological degradation and inequity in aquatic food production, exchange, and consumption. It thus becomes necessary to undertake a power-sensitive, political analysis of Ghanaian aquatic food systems, to illuminate the power structures inherent to the production, exchange, and consumption of fish. A first step, arguably, would be to take a brief look at the historical development of Ghana's fisheries.

[4] IUU fishing narratives often unfairly marginalise small-scale fisheries. This is due to IUU being an all-inclusive narrative that doesn't recognise the considerable contributions SSF make to aquatic food systems and livelihoods (Song *et al.,* 2020)

1.2. A brief history of Ghana's fisheries

Long before Ghana became the modern nation-state it is today, it consisted of several kingdoms, and many differing languages and groups of peoples (Boahen, 1966). Much of the history written about Ghana has been written regarding "the history of the activity of Europeans" in Ghana (Boahen, 1966, p. 216). However, the Akan, Ga, Ewe, and Gur speaking peoples have had roots in northern Ghana for over 1000 years, with several political institutions and states created prior to European arrival, as well as significant trade routes and conflicts with the Mali Empire (Boahen, 1966). The Asante Empire, which was based in and around Kumasi towards the centre of the country, was formed in 1701 through conflicts and victories over neighbouring groups such as the Fante and the peoples in the north of Ghana (Austin, 2007). Later in the next century, through a series of wars with the British Empire, the Asante kingdom was defeated in 1874 (Austin, 2007). The British then established colonial administration south of the Asante kingdom, which came to be known as the Gold Coast Colony (Austin, 2007).

The contours of modern-day Ghana first emerged in 1919, after the British and the French took control over what was known as German Togoland in 1914. Ghana became independent from Britain in 1957 and became a sovereign state as a part of the Commonwealth, after its Pan-Africanist, socialist leader, Kwame Nkrumah (as seen in figure 1.1.) led the country to assert political sovereignty and independence from British rule (Koram, 2022).

Figure 1-1 The Queen of the United Kingdom and Dr Kwame Nkrumah visiting Makola fish market, Accra in 1961 on her tour of the Commonwealth. Credit: Keystone/ Getty Images

Fishing and human connections with the sea have occurred for millennia in West Africa. In the 'Gold Coast', particularly, people were often understood as being "at home on the sea" (Smith, 1970, p. 516). In West Africa, canoes are normally 'dug out' from a tree, sometimes to the length of 80-feet with a complement of one hundred men or more (Smith, 1970). Fishermen's knowledge of lagoons and waterways also historically enabled increased trade with and through European companies and trading ships. This mostly occurred with goods, such as palm oil, yams, animals, such as cows and goats, and also facilitated the trans-Atlantic slave trade (Smith, 1970).

However, prior to Ghanaian independence, Ghana's national economy did not place much economic value on aquatic foods, or fishing, but rather, the country was (and still is) well-known for the export of gold and cocoa (Hill, 1961; HavardGrwthLab, 2025). When Ghana won independence from Britain in 1957, under Nkrumah's leadership, however, there was a significant effort to industrialise the country to compete with European firms through modernizing the fishing

industry (Osei-Opare, 2024). Part of this industrialisation effort was to improve Ghanaian fisheries through turning away from local fishing ontologies, by creating a state fishing company called the 'Ghana Fishing Corporation' (Osei-Opare, 2024). The corporation was envisioned to embody "Ghana's new post-colonial socialist modernity and modernization dreams and spearhead Ghana's fishing revolution." (Osei-Opare, 2024, p. 216). Accordingly, this move towards a state-owned fishing company meant that small-scale fisherfolk were often demonized as the antithesis of a forward-looking, modern, and industrial nation, which contrasted sharply with the forward-looking nationalism associated with Ghana's cocoa farmers in the Asante region (Osei-Opare, 2024).

The development of the Ghana Fishing Corporation had, interestingly, gendered implications, where women fish processors and traders were seen as the cause of rising fish prices, and Ghana's supposed backwardness, due to their resistance to the Ghanaian state's overtaking of all processes involved in fishing, including processing and trading (Osei-Opare, 2024). Accordingly, there was a determined effort to eliminate women's economic position within the fishing industry through the introduction of state-owned cold stores and markets in key fishing areas such as Tema, Mumford, and Elmina. This was in an effort to reduce fish prices through cutting out the 'middlemen' (Osei-Opare, 2024). Small-scale fisherfolk, in particular, women fish processors and traders, were described as 'archaic' and 'illiterate', and it became up to Ghanaian technocrats to "salvage the fishing industry and educate the local fishing communities, who had been fishing for centuries, about the latest scientific and modern fishing techniques" (Osei-Opare, 2024, p. 222).

To decolonise through national development, Nkrumah set about building an ambitiously large hydroelectric dam project, which created the 250-mile-long Volta Lake, one of the largest at the time in Africa (Miescher, 2022). The Akosombo hydroelectric dam on the Volta River was commissioned in 1966 (Tsikata, 2006), with a view to introduce new forms of fishing (aquaculture), generate electricity for neighbouring countries, establish the Volta Aluminium Company (VALCO), and also establish a clean water supply for the nation (Tsikata, 2006; Miescher, 2021). However, it had a devastating effect on local livelihoods, displacing over 80,000 people (Miescher, 2022), with high rates of poverty still prevalent in the areas downstream from the dam almost 40 years later (Tsikata, 2006). In Nkrumah's government, fish were therefore seen as a means to not only develop the nation, but also as a means to improve good governance of

natural resources, alleviate public health concerns through increased protein and nutritional intake, and improve governmental authority (Osei-Opare, 2014). A few decades earlier, fish were also seen by British colonial authorities as a way to address the nation's protein and nutrient deficiencies (Miescher, 2021).

Eventually, after Nkrumah was overthrown in a Western-backed military coup in 1966, the National Liberation Council (the Western-backed overtaking political party) commissioned a report into the 'Ghana Fishing Corporation', which noted that, for all its intents and purposes in 'modernizing' Ghana's fisheries through the introduction of industrial trawling, the corporation itself still did not outperform Ghana's small-scale fisherfolk in terms of the amount of fish landed (Osei-Opare, 2024). The Ghana Fishing Corporation was privatized in the 1980s due to structural adjustment policies (Acquay, 1992), and since then, private investment in Ghana's fishing industry has been encouraged (Ayilu *et al*., 2023).

Nkrumah's vision of decolonizing Ghana through the development of its fisheries thus failed. However, today Ghana's small-scale fishing industry remains a vibrant and vital source of livelihood and food for approximately 1.9 million people who work in the small-scale fishery sector (Dovlo *et al*., 2016). As Koram explains, Nkrumah was eventually forced to "wrestle with the realization of just how much the power of empire lay not in the hands of sovereignty but within the private realm of capitalism – in property deeds, contracts and trusts" (2022, p. 52). Modern-day channels of foreign-based and privatised investments were carved out in the long, historical, processual arc of British colonialism and its outsourcing of the looting and appropriation of Ghana's resources and peoples to multi-national corporations (Koram, 2022). Thus, problems afflicting fisheries in Ghana are now understood through the lens of market-led, economic, and privatised development objectives, which can only be realized through the encouragement of private sector and foreign-based investment.

As such, almost 50 years after Ghana gained independence from Britain, there is still a dominant and pervasive narrative that Ghanaian fisherfolk need to be 'modernized' through market-led privatized investment (Overå, 2011). Nowadays, this often falls under the neoliberal guise of market-led development (see chapter 5) or as a part of blue economy narratives (MoFAD, 2022). Despite the historical demonisation of women fish processors and traders as antithetical to growth and development, as well as modernizing narratives prevalent in fisheries' development

programmes (USAID, 2022), Ghana's small-scale fisheries, particularly its processors and traders, are still vital for the nation's food and nutritional security, its complex and wide-ranging aquatic food systems, its potential for food sovereignty, as well as the many millions of livelihoods the Ghanaian small-scale fishery supports (Asiedu *et al*., 2021; Overå *et al*., 2022).

This brief overview of the historical development of Ghana's fisheries helped to inform my research aims and questions, to which I will now turn.

1.3. Research aims and questions

Based on my empirical, qualitative approach to data collection, my research aim focused on identifying and analysing the **social, economic, and environmental dynamics** of Ghanaian aquatic food systems. From this research aim, I developed three research questions to aid me in achieving my research objective.

Research questions

1) How does industrial fishing in Ghana affect small-scale fisheries?
2) What is the relationship between the aquatic food market(s) and industrial fishing in Ghana?
3) Can a critical understanding of the market be advanced in analyses of aquatic food systems, and how can this relate to debates regarding food sovereignty in fisheries?

1.4. Thesis contributions

Below are brief summaries of the three key contributions made in answering the above research questions, which are explored in more detail in the rest of the thesis.

1.4.1. Advancing understandings of the gendered implications of industrial fishing in small-scale fisheries

In this thesis, I focus on the role of gender to highlight the evolving, gendered and relational aspects of the complexities of fish harvesting and fish processing livelihoods in Ghana. Understandings of gender vary across disciplines, however, work by feminist theorists such as Judith Butler have advanced notions of gender in society through the concept of performativity. Here, gender is not

understood as a fixed and singular identity, but it is rather performed through certain acts of repetitions, emphasising the dynamic, social, and evolving nature of varying gender identities (Butler, 2007). Gender, in a widely understood sense, is often referred to as not just the role of "women and how those roles are constituted but to the roles of men and of the relations between men and women" (Tuhiwai Smith, 2008, p. 45). Dominant cis-gender heteronormative society often discounts and invalidates non-conforming gender identities, and in this thesis, while I focus on women in post-harvest fisheries in relation to harvesting practices at sea (which are predominantly dominated by men), I also reject any notion that gender is a fixed and binary identity. I focus here on the relational and gendered aspects of fishing in Ghana to highlight how women's role in post-harvest fisheries (and therefore aquatic food systems) are intrinsically shaped by men's harvesting and social practices at sea, as well as the marine environment (and vice-versa). As such, the term gendered is used in this thesis to highlight the evolving performative dialogue of gendered roles and the marine environment in fisheries and aquatic food systems in Ghana.

Social science research in fisheries systems often solely focus on fish harvesting production relations, which are often, but not always, dominated by men (Basurto *et al.,* 2020). Despite increasing acknowledgement in research, women's contributions to fisheries are still often overlooked and undervalued, particularly when it comes to policymaking and their inclusion in official fisheries statistics (Gopal *et al*., 2020). In Ghana, much of the labour in the pre- and post-harvest sectors is carried out by women (Britwum, 2009) (although, this gendered pattern is also seen worldwide (Swathi Lekshmi, 2022)). The pre- and post-harvest sectors are vital for ensuring the 'informal' cross-border trading and processing of fish to neighbouring countries in West African aquatic food systems (Ayilu & Nyiawung, 2022).

Low levels of fish landings due to industrial overfishing have, however, not only had profound implications for the Ghanaian small-scale fish harvesting sector. Low levels of fish landings have also had specific gendered implications for women in the small-scale pre- and post-harvest sectors (EJF, 2022; Ayilu *et al*., 2023). Despite this, there remains limited research regarding how the dynamics of capital accumulation in the industrial fishery shape gendered relations in small-scale fisheries (excluding Hapke, 2001). This is compounded by the limited research which takes a political economic approach to understanding fisheries primarily as food systems, rather than as a

marine resource (De Schutter, 2019). This thesis therefore takes a broader view of fisheries relations through focusing on the labour and market exchange processes in the pre- and post-harvest sectors, and how social relations in the pre- and post-harvest sectors are shaped by the dynamics of capital accumulation in the industrial fishery. It contributes to a call for a feminist political economic approach to women's labour in fisheries, which broadly means understanding the positions of women in fisheries as embedded and shaped by the dynamics of global political economy (Williams, 2019). This thesis contributes to better illuminating the complexities and contradictions which shape socio-ecological relations in fisheries systems and therefore, how to work towards lasting and more gender-equal fisheries (Williams, 2019).

1.4.2. Towards a food sovereign approach to fisheries?

The food sovereignty movement argues for justice and equality through advocating for small holders to be able to democratically control their own means of production (La Via Campesina, 2021). There is a substantial amount of literature which explores the relevance and political potentials of the food sovereignty movement in food systems (McMichael, 2009; Patel, 2012; Bernstein, 2014; Akram-Lodhi, 2015; Jansen, 2015; Li, 2015; Wach, 2021; Tilzey, 2024). However, once again, the relevance and political potentials of food sovereignty in aquatic food systems remain side-lined in academic and activist attention due to a heavy focus on agricultural issues[5]. Persistent ecological and economic 'crises' in fisheries systems mean that the question of food sovereignty is of critical concern for the future of fisheries and aquatic foods (Campling & Havice, 2014).

The food sovereignty movement brings attention to how capitalist and neoliberal power structures dominate the unequal organisation of food and capital in the globalised food system. As such, while a food sovereign approach to fisheries has been explored in academic research (Levkoe *et al*., 2017; Quimby *et al.,* 2023), there remains a lack of critical engagement with how capitalism and neoliberalism shape fisheries systems[6] (particularly in the pre- and post-harvest sectors) *and*

[5] This is not to say that aquatic foods have been completely ignored in food sovereignty discourse, as the below chapters will explore in greater detail.

[6] However, valuable research has detailed how capitalism and neoliberalism shape fisheries production, albeit with less research attention than is paid to agriculture and land (Cardwell, 2015; Pinkerton & Davis, 2015; McCall-Howard, 2017; Campling & Havice, 2018; Campling & Colás, 2018).

what this means for building upon a food sovereign approach to aquatic food systems. This means that a food sovereign approach to fisheries could be bettered if, in research, it centred an analysis of how the industrial fisheries sector affects small-scale fisheries and their aquatic food systems.

While fish is often understood as food through its securitised sense, a food sovereign framing may better illuminate *why* inequity and environmental degradation occur in fisheries. The question of food looms large in fisheries management debates, and the directions which can be taken in understanding 'fish as food' are multiple. This thesis primarily explores how to understand 'fish as food' through heterodox political economic, political ecological, and feminist approaches. This is to (re)politicise inequity, environmental degradation, and hunger in aquatic food systems, to expand upon securitised notions of 'fish as food', and to debunk Malthusian understandings of fisheries and food crises.

Despite centring the question of power in fisheries systems, existing literature which details the relationship between food sovereignty and fisheries has surprisingly omitted the power structures perpetuated by capitalism, such as those which shape the industrial fisheries sector. In this thesis I have therefore enhanced critical understandings of the relationship between food sovereignty and aquatic food systems, through exploring how capitalist dynamics in the industrial fishery intersect with social, gendered relations in the Ghanaian small-scale fishery.

1.4.3. (Re)politicising the role of the market in aquatic food systems

Markets have existed for millennia but their characteristics under capitalism are specific (Wood 2002a; 2002b). This is because the 'market' has become central to the functioning of capitalism (Spies-Butcher *et al.,* 2012). A growing literature in marine social science recognises the role that markets, and market actors have in shaping the potential for sustainability and equity in aquatic food systems (i.e., Terra Nuova, 2016). In Ghana, women are significant market actors through being responsible for the processing and trading of fish. As such there are notable overlaps between gendered relations in fisheries production and aquatic food market systems. To build on a food sovereign approach to fisheries, I argue that the aquatic food market should be centred in critical empirical and theoretical enquiry to illuminate power dynamics in fisheries systems and their aquatic food markets. Specifically, I have taken a step towards understanding how industrial

fishing relations shape aquatic food exchange and not just production. In chapter 7, for example, I show how women fish processors and traders are increasingly relying on bycatch from the industrial sector as well as imported fish to sustain their livelihoods. I contribute to showing how market exchange and fisheries production are in fact mutually dependent, and how both of these integral parts of fisheries systems continually shape their respective modes of production and exchange.

This thesis therefore theoretically and empirically contributes to understanding how central the 'market' is to organising fisheries productive and exchange systems in capitalism. In line with Christophers (2014), I again do not suggest that market exchange should be understood as separate to the realm of production. I instead suggest that our scope of understanding regarding how capitalism shapes social relations in small-scale fisheries must expand beyond the productive sphere to encapsulate how exchange and consumption (demand) also shape food system production relations and inequities.

As such, while scholars in critical marketization studies have empirically analysed *how* markets are engineered by corporations in agro-export food systems (Ouma *et al.,* 2013; Ouma, 2015), there is a lack of attentive theoretical and empirical research to *how* aquatic food markets are engineered and moulded by certain powerful interests (in this case the industrial fisheries sector), and *why* this may be the case. I contribute to understanding how new market formations are made by governance and industrial actors and how these market formations interact with already existing important, complex, and 'informal' aquatic food markets[7] (Terra Nuova, 2016; Ayilu & Nyiawung, 2022). This thesis contributes to moving towards tackling the lack of research attention to gendered relations in fisheries market exchange through taking the 'market' in aquatic food systems as a serious theoretical and empirical object of enquiry. This, I suggest, is a key step towards centring power dynamics as a means of understanding the complexities, inequities, and contradictions of aquatic food systems.

[7] Otherwise understood as territorial markets (Terra Nuova, 2016).

1.5. Thesis structure

After this introductory section, **chapter 2** then overviews how fish has been understood 'as food' in food security and food sovereignty framings. Both **chapters 2 and 3** are literature reviews. They are separate in this thesis because chapter 2 is a separate paper which has been partially accepted and will be submitted to a food systems special issue in the RGS journal, *Geo Geography and Environment.* **Chapter 2** argues that a political economic approach to fish as food needs to be centred in fish as food literature to enable a better and clearer understanding regarding why inequities occur in aquatic food systems. **Chapter 3** overviews how the market has been understood in different theoretical stances, and how a cultural political economy approach may help to bridge differences in theoretical positions regarding the question of markets in capitalism.

Chapter 3 delves into theoretical considerations regarding the market, particularly with regards to how the market has been understood as fundamental to the development of capitalism (Polanyi, 1957), and how differing scholars from neoclassical economists to orthodox Marxists have approached the question of the market. Approaching markets through the tools of performativity approaches (i.e., Callon, 1998; Mackenzie *et al,* 2007; Mitchell, 2008) combined with insights from political economy (Harvey, 2014; Fraser, 2023) is well encapsulated in cultural political economic theory (Sum & Jessop, 2013), which I draw from particularly in chapter 6 of this thesis. Insights from cultural political economy enable a political understanding of fisheries production and its relation to market exchange, and the cultural market contingencies that are formed in response to capitalist contradictory crisis tendencies.

Chapter 4 details my methodological approach, and my ethical considerations throughout this PhD. Through explaining how I followed a critical realist and critical grounded theory in my research methodology, and how I analysed data, I then go on to grapple with my own positionality in my fieldwork in Ghana, with regards to my racial and gender identity. I call for more care for researchers in the 'field' as well as question how we may dismantle hegemonic power structures for those who are 'researched' in the field within the confines of the neoliberal university.

Chapter 5 is my first empirical chapter. This chapter details how the market is understood as a tool of development for Ghanaian small-scale fisheries by development agencies such as USAID.

Here, I critique the notion that market-led development, through the implementation of hygiene and quality standards, can bring about increased revenue for women fish processors and traders. I show that the burden of increased fish prices, due to better hygienic fish handling, will fall upon lower-income Ghanaian fish consumers and fish processors. I show how post-harvest associations are key to the development of neoliberal, market-led development in Ghanaian fisheries. I argue that market-led development risks embedding further inequality in the small-scale fisheries sector if the broader industrial overexploitation of fisheries in Ghana is not dealt with.

Chapter 6 critiques the notion of financial inclusion through analysing how a heterogenous assemblage of financial practices is integral to the functioning of the Ghanaian small-scale fishery. Here, I use the example of susu, a traditional economic practice commonly found in Ghana, where money is collectively saved and then taken out on a rotating, periodic basis. I show how the non-market and market divide in small-scale fisheries is porous and mutually dependent and argue that 'informal' financial practices should not be seen as predatory, as is often depicted in fisheries policy literature (Pomeroy *et al.,* 2020). I show how capitalist crisis tendencies in the industrial fisheries sector enable market-led solutions to be imagined and then implemented as tools of development in the Ghanaian pre- and post-harvest sectors.

Chapter 7 addresses the role of industrial overfishing in Ghanaian waters and how this has impacted and shaped post-harvest relations in the port city of Tema. Here, women fish processors and traders increasingly rely on imported fish and by-catch from industrial trawlers to sustain their livelihoods. Using the heterodox political economic notion of market dependency (Wood, 2002a; 2002b), I show how industrial overfishing changes fish processing relations, and how this means that cold stores and imported fish are increasingly relied upon by some women fish processors and traders to access fish. I question how a food sovereign approach to fisheries may be built upon through centring the capitalist processes (i.e., industrial degradation of the marine environment) that facilitate market dependency in aquatic food systems.

In **chapter 8**, I conclude and bring together my key findings from all the papers in this PhD. I show how I have made empirical, theoretical, and methodological contributions to knowledge regarding the power and politics of aquatic food systems in this doctoral thesis. I also detail

limitations to my approach and highlight potential future research avenues for those interested in the intersections of power and politics in fisheries and aquatic food systems.

The following chapter (chapter 2) in this PhD will give an overview of how fish has been understood ‘as food’ primarily through the lenses of food security and food sovereignty. Chapter 3 then builds on chapter 2 to explore how a food sovereign approach to fisheries may be better engaged with and built upon through centring and denaturalising aquatic food market relations in capitalism.

Chapter 2: Resituating fish as food: food security and food sovereignty as approaches to conceptualizing fish within food systems

2.1. Introduction

The way we relate to food has markedly changed over the last few hundred years. This is partially due to the deepening commodification, appropriation, and dispossession from the means of food production by powerful actors (Clapp, 2021). Food in contemporary capitalism is not seen as a common good, but rather as a privatised and alienable commodity (Vivero-Pol, 2017). This tension between food as a common good and as commodity is well encapsulated in Bill Clinton's efforts to atone for the food price hikes, deficits, and food riots in 2008. Here, he said:

"*food is not a commodity like others... it is crazy for us to think we can develop a lot of these countries [by] treating food like it was a colour television set*" (Bill Clinton, quoted in Patel, 2010).

Despite Bill Clinton's perhaps ironic statement, food continues to be treated as a commodity, instead of integral to the survival and flourishing of all life on Earth. This means that food continues to be valued at its market price, rather than for the multiple cultural, laborious, environmental, and social processes that went into making the food commodity. The central tensions between food's use-value and exchange value (Marx, 2000; Vivero-Pol, 2017) bear manifold consequences for humanity's health and societies, and contribute to perpetuating inequalities in the production, exchange, and consumption of food. The deepening commodification of food in the contemporary global food system thus presents a stark tension between the necessity of eating to live, and the compulsion of food commoditisation in "the political economy of neoliberalism" (McMichael, 2014, p. 947). This tension between food and its commodification is particularly evident in the aquatic environment. Fish[8][9] are some of the most traded food commodities worldwide (Gephart & Pace, 2015) *and* are also a crucial source of food,

[8] Throughout this thesis, I refer to 'fish as food' while acknowledging its deeply anthropocentric leanings. Arguably, food justice and inequalities emphasise human agency and singularities, particularly in how injustice occurs to humans (Goodman, 2001), which enforces the binary between 'nature' and 'society'. Approaching fish as food through a different ontological perspective, would for example, entail a different and important type of analysis, however it is beyond the scope of this PhD to do so.

[9] Throughout this thesis I refer to fish and aquatic foods often interchangeably. Fish if referred to can be understood as aquatic foods, and I acknowledge that not all aquatic foods are fish.

nutrition, livelihood, and culture for many millions of people around the world (Todd, 2017; Hicks *et al.,* 2019; Ganseforth, 2022).

Yet, despite the vital and acknowledged links between fish, food, and nutrition, food policies and dominant fisheries management paradigms have not historically developed around an understanding of fish as food (Bennett *et al*., 2021; Silver *et al*., 2022). Rather, there remains a longstanding emphasis on fish as a commoditised natural resource to be managed for the betterment of economic development and conservation, and a prevalent assumption that fishing is a livelihood of 'last resort' (Onyango, 2011). As such, the tensions between fish as an economically commoditised natural resource, as a marine resource for conservation, as a culturally valuable livelihood, and as food, present significant challenges in moving towards equitable and sustainable fisheries and aquatic food systems.

However, in the last decade or so, there has been a marked increase in scholarly and policy attention to approaching fish as food (HLPE, 2014). Here, it is shown that appreciating fish as an integral part of food systems brings about more holistic understandings of the interconnected nature of the social, economic, environmental, and health aspects of fish production and consumption (Levkoe *et al.,* 2017; Bennett *et al.,* 2021; Simmance *et al*., 2022), which ultimately aids global food and nutrition security objectives (McClanahan *et al.,* 2015; Béné *et al*., 2015; Thilsted *et al.,* 2016). Yet, despite this uptick in 'fish as food' literature, there remains a lack of critical attention to the political economy of aquatic foods[10], and how power dynamics and inequities shape access to aquatic foods in the globalised food system. This paper therefore questions what is next for the fish as food turn, through questioning if solely understanding fish as a part of food systems is enough to ensure healthy environments and equitable diets for all. It suggests that as long as the growing fish as food consensus (Bennett *et al.,* 2021) remains inattentive to how capital shapes the commodification of aquatic food production and consumption, the fish as food debates will remain unable to tackle the broader, thornier power relations which are imbued within inequitable modern, capitalist food systems.

[10] There is, once again a crossover between aquatic foods and fish. These two terms are again used interchangeably.

This paper therefore examines and carries out a mapping exercise of the relatively recent consensus on situating fish as food, which it shows, has most notably occurred through the paradigms of food and nutrition security. It then asks how power analyses can be centred in this fish as food turn, through questioning what role there is for a combined understanding of political economy and food sovereignty in advocating for fish as food in both food policy, research, and fisheries governance. It therefore contributes to a critical and growing literature (i.e., Clapp *et al*., 2017; Barbesgaard, 2018; Campling & Havice, 2018) which seeks to develop understandings of the role of power and specific interests in shaping the governance of fisheries and aquatic food systems, and how these in turn, reinforce inequalities and ecological degradation in fisheries systems.

I turn to food security first, which is often considered an anchor concept and central to food sovereignty. I then overview the extent to which these two concepts have been taken up in research on fish and in particular, small-scale fisheries, and how small-scale fishers, traders, and processors relate to the food sovereignty social movement. Because there are some gaps and limitations to securitized approaches to food, particularly with regards to political economic power dynamics, I then discuss key debates and contestations regarding food sovereignty. I propose that a food sovereign approach to fisheries may better illuminate the power dynamics which shape access to nutritious fish within the contemporary, globalised aquatic food system.

2.2. What is food security?

Food security is a dominant contemporary frame for analysing how, or if, people can access and consume food in today's global food system. Food security emerged at an international level during the 1974 world food price crisis at the World Food Conference (Jarosz, 2014), due to post-Second World War reconstruction efforts in food system productivity (Maye & Kirwan, 2013). The concept was initially conceived of at a state level, so that international food prices could be stabilized (Jarosz, 2014). At this time, the cause of hunger globally was conceived of as due to a decline in the availability of food and subsequent food price hikes on the global market (Clapp *et al.,* 2022). Technological innovations which focused on expanding food production were seen as a solution to such food crises (Clapp *et al.,* 2022).

Since 1974, food security discourses have developed under "the influence of neoliberal globalization policies" which have centred around framings of developmentalism and economic growth (Jarosz, 2014., p. 170). In the 1980s, the concept of food insecurity was introduced, which notably shifted food security discourse away from local, regional, national, and global levels, to instead measuring food insecurity at individual or household levels (Borras & Mohamed, 2020).

The most widely used and authoritative definition of food security was developed through an (approximately 50 year) iterative process by the Food and Agriculture Organization (FAO). In 1996, food security was said to exist when:

> *'All people, at all times, have physical [social] and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life'* (FAO, 1996).

This definition is underpinned by four pillars, namely: 'availability',' access', 'utilization', and 'stability'. Each of these pillars is multi-faceted, their definitions and indices are contested, and are mutually dependent (Webb *et al.,* 2006). Availability is understood as necessary but not necessarily sufficient for access; utilization refers to who is able to utilize food and its nutrients. Food utilization depends on access, but access does not guarantee utilization (i.e., you may be able to access nutritious food but cannot utilize it because you are ill). Stability is a necessary and continuous (across time and seasons) condition for availability, access, and utilization (Clapp *et al.,* 2022). These metrics have been influential in shaping food related policy, particularly since food price inflation in 2007-2008 (Maye & Kirwan, 2013).

The concept of food security reached its global zenith in 2008, where it came to prominence in the World Food Security summit organized by the FAO. This summit symbolized food security's "renewed geopolitical status" (Maye & Kirwan, 2013., p.1) through shining a light on how the food price hikes and riots experienced in 2008 posed a threat to global food security. After 2008, policymakers and politicians became increasingly aware of the interdependence of agri-food systems due to food price inflation in oil and basic food staples on international commodity markets (Maye & Kirwan, 2013). The two main responses to the food crises experienced in 2008

were firstly that food production needed to increase by 50% by 2030, and this number needed to double by 2050 to feed a world population of 9 billion (Maye & Kirwan, 2013). Thus, the productivity mantra as a solution to world food crises rose to the fore again, becoming central to global food security discourse (Maye & Kirwan, 2013).

A historical and present-day focus on food productivity levels, however, comes amidst increasing and persistent global hunger and malnutrition due to widening food inequalities and climate change. This has provoked questions regarding if the four-pillared approach to food security can best counter the challenges facing food systems today (Clapp *et al.,*2022). As such, there have been recent suggestions to add the metrics of 'sustainability' and 'agency' as central pillars to the definition of food security (HLPE, 2020; Clapp *et al.,* 2022). Here, agency is understood as the "capacity of individuals and groups to exercise a degree of control over their own circumstances and to provide meaningful input into governance processes" (Clapp *et al*., 2022, p. 3). Agency in food systems is important, particularly when it comes to marginalized peoples actively participating in food systems decisions, rather than being a passive consumer (Vivero-Pol, 2017). Furthermore, the pillar of stability in the definition of food security was borne out of accounting for shorter-term disruptions, such as those created by natural disasters. However, in Clapp et al's (2022) view, sustainability allows for "the connections between ecosystems, livelihoods, society, and political economy to maintain food systems and support food security into the distant future" (p. 5). Adding these two metrics to the definition of food security, it is argued, would allow for more nuanced depictions of power, as well as incorporating longer-term visions for healthy and equitable food systems (Clapp *et al*., 2022; Termine, 2024).

2.3. Food (in)security & fish: from neglect to productivism?

As previously mentioned, global hunger and malnutrition are increasing worldwide (FAO, 2024). In 2023, it was estimated that nearly 2.33 billion people did not have access to adequate food (FAO, 2024). Analyses of contemporary issues within global food-related literature have mostly focused on land-based agricultural systems and have not fully considered the role of fisheries and aquaculture in their relation to the issues presented by the contemporary food system (Simmance *et al.,* 2022). This is even though global consumption of aquatic foods is increasing, with the global average consumption of fish and other seafood reaching a record high of 20.5kg per person in 2019

(Richter, 2022). Over the last three decades, there has been a rise in the production of fish from aquaculture, while the amount of fish caught from capture fisheries has plateaued (FAO, 2022). In 2018, approximately 22 million tonnes of wild-caught fish were destined for non-food uses, mainly to produce fishmeal and fish oil, which is vital for the aquaculture and petfood industries (Feedback, 2024). Aquaculture now accounts for over half of global fish production (FAO, 2024), signifying a significant shift in who controls the production of fisheries and their respective value chains.

Despite this increase in global production of fish from aquaculture and a plateauing of catch from capture fisheries, seafood products have historically been overlooked in data regarding food production and global trade networks (Gephart & Pace, 2015). This exclusion has meant that fish and other seafood are often under-addressed or even left out of food-related policies (Bennett *et al.,* 2018). Consequently, the role of fisheries within food systems has not received a great deal of attention, despite the importance of fish as food for millions of people globally. Dominant fisheries management paradigms have historically developed around the cornerstones of privatization, marketization, and profit (Mansfield, 2004) and have not traditionally recognised fish as food. Dominant paradigms within fisheries science have also developed alongside, and often in the service of, orthodox economic models and colonial interests and logics (Silver *et al.,* 2022). Hence, an understanding of fish as food within mainstream fisheries governance has often been neglected.

However, it is worth noting that there has been an uptick in recognising fish as food in academic and policy circles, particularly over the last decade. The FAO first recognized the importance of capture fisheries to alleviating hunger in 1945 (Bennett *et al*., 2018). In 2015, it published *The Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication*. These voluntary guidelines emphasised the importance of the connection between small-scale fisheries and food security. They were the first internationally agreed upon guidelines dedicated to small-scale fisheries, so were a step towards recognising fish as food. These guidelines also emphasised the importance of the post-harvest sector, something which is generally overlooked in fisheries management. The post-harvest sector is vital to ensuring aquatic food security and is made up of the processes that predominantly occur after fish is landed right up to consumption (including market exchange). Labour in the post-harvest sector is often

gendered, with women undertaking much post-harvest fisheries work (Harper *et al.,* 2013). It is estimated that approximately 130 million women worldwide work in the fisheries sector, yet despite increasing acknowledgement in literature, their contributions are often undervalued (Harper *et al.,* 2013).

The connection between food security and fisheries has also been the subject of increased academic research and literature over the last few decades. Research has spanned from the importance of capture fisheries for global food security (Pauly *et al*., 2005), to emphasising how small-scale fisheries are vital to ensuring aquatic food security (Loring *et al*., 2019), and to highlighting the important links between nutritional dietary intakes and fish consumption (Hicks *et al*., 2019; Omukoto *et al*., 2024). The complicated relationship between aquaculture and food security has also been explored (Garlock *et al*., 2022). Aquaculture risks undermining aquatic food security for small-scale fisheries due to its reliance on small pelagic fish as fish meal and fish oil (FMFO) (Willer *et al*., 2024). Additionally, the role of trade, markets, infrastructure, post-harvest losses, and food quality and safety has been increasingly noted in literature as vital to ensuring aquatic food security (Akintola & Fakoya, 2017; Overå *et al*., 2022). Other links to food security have been made with regards to inland fisheries (Funge-Smith & Bennett, 2019), as well as the relationship between marine biodiversity and nutrient intakes from fish (Hamilton *et al*., 2024).

A wide-ranging, rich, and broad literature has thus spanned out from conceptualising fish as key to food security (i.e., fish as food). However, consensus regarding operationalising food security is often 'fractured' (Maye & Kirwan, 2013). Methods for ensuring food security have long been tied to a productivist ideology, whereby quantity of food produced has been prioritised over quality and access (Maye & Kirwan, 2013; Rosin, 2013). This has historical echoes in the relationship between fish and fisheries management, whereby the quantity of fish caught within maximum sustainable yields (MSY) was often prioritized for maximum wealth creation (Hubbard, 2014). Food security policies and programs still overall tend to be designed with an emphasis on food productivity and supply, and are often understood as an exclusively technical problem, rather than a political one (Hopma & Woods, 2014).

2.4. The politics of food security & fish

There is significant debate with regards to how food security can be operationalised in a political food system which is controlled by the agri-food complex, corporate power, and the state (McMichael, 2009; Kass, 2023). These concerns are particularly relevant for fisheries. Although often under-addressed in food analysis and policy, fish and other seafood are subjected to international market dynamics. A relatively limited number of large transnational actors exercise power and ownership over fisheries production. For example, 13 'keystone' corporations control approximately 11-16% of global marine catch and own 19-40% of the most valuable stocks (Österblom *et al.,* 2015). This follows the same worrying footsteps for levels of corporate ownership in terrestrial food production, where it is estimated that only 4 firms control over 60% of the global seed market (Clapp *et al.,* 2021).

This trajectory of ownership and access concentration, combined with economic development policies, and globalised markets in fish, has gone hand-in-hand with the increased industrialization of the global fishing fleet (Arthur *et al.,* 2022). Additionally, in 2018, over 80% of global fisheries subsidies went to the large-scale industrial fisheries sector, including roughly $7.2 billion in fuel subsidies (Schuhbauer *et al*., 2020). This means that a fisher involved in the large-scale industrial sector receives 3.5 times more in subsidies than a fisher involved in the small-scale sector (Schuhbauer *et al*., 2020). Highly entrenched systems of power are thus at play in fisheries management systems and seafood value chains, meaning that access to nutritious fish for those who work in the fisheries sector is increasingly limited.

Despite the concentration of wealth and power in fisheries, small-scale fisheries are still estimated to land approximately 40% of the world's fishery catch (FAO, 2023a). However, interestingly, in recent fish as food debates, there has been a growing emphasis on ensuring fish food and nutrition security through aquaculture (FAO, 2020), potentially failing to recognise the multiple welfare benefits small-scale fisheries provide (Béné *et al.,* 2007). A dominant theme in international food organisations policy papers is that there should be simply *enough* fish for a growing human population, no matter where it is from, or the conditions in which fish is produced (FAO, 2024). Here, the FAO (2020) suggests that in order to meet "the ever-growing demand for fish and seafood for human consumption, aquaculture systems must become more efficient by increasing

production and profitability" (p. 92). Industry has capitalised on this narrative. For example, the European Fishmeal and Fish Oil Producers (2024) note that "aquatic food systems are a promising solution for enhancing global food security and nutrition" however "more efforts are needed to adequately feed a growing and more urbanized population". As such, expanding aquaculture initiatives to reinforce the critical role of aquatic foods is seen as paramount to ensuring food and nutrition security by governance and corporate actors.

Again, this emphasis on aquaculture for ensuring food and nutrition security also bears inherent contradictions, due to aquaculture's reliance on wild-caught (often small pelagic fish) for feeding a few species of carnivorous fish such as salmon (Willer *et al.,* 2024). As such, large aquaculture or Fishmeal and fish oil corporations may further appropriate fish from small-scale fisheries, while laying claim to ensuring food and nutritional security for a rising population. The growing consensus around fish as food (i.e., FAO, 2024) fails to centre an analysis of power, particularly regarding the development of aquaculture as a solution to hunger and malnutrition, how connected developments (such as industrialised fishing) impact small-scale fisheries and their aquatic food systems. This failure to acknowledge inequities in fish production and value chains risks perpetuating the same levels of corporate concentration and ownership in aquatic food systems as in agricultural food systems.

It is thus evident that true food security and insecurity cannot be dealt with until the power dynamics and politics which perpetuate hunger, malnutrition, and inequity in global food systems are challenged. As Patel notes, "it is entirely possible for people to be food secure in prison or under a dictatorship" (2009, p.665). Calls for attention to how food security can be achieved, and the social, economic, and political contexts which shape the conditions of food production, mean a more sustained focus on the power dynamics which perpetuate inequality, dispossession, and marine ecological degradation in aquatic food systems.

2.5. What is food sovereignty?

One approach that foregrounds power and the production of inequality through food systems in contemporary capitalism is food sovereignty. Since its inception in the 1990s by La Via Campesina, the peasant-led food sovereignty social movement has grown to represent more than

200 million small-scale food producers worldwide (La Via Campesina, 2021). The food sovereignty movement speaks to issues of power and justice within the globalized food system, representing those who are marginalized and dispossessed by dominant, global agri-food corporations. Definitions of food sovereignty within the social movement have changed over the last few decades. Most recently, it has been defined as:

> "*The right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods and their right to defend their food and agriculture systems*" (La Via Campesina, 2021, p. 1).

Much like food security, food sovereignty is a framing through which access to food can be understood. However, it differs from food security because food sovereignty expresses the right for people to define and shape how food is produced, not just consumed. The food sovereignty movement articulates the principle that all people have the right to food, and that democratic principles regarding how food policy and trade rules are made are integral to this right (Fairbairn, 2008). Questions regarding hunger, according to the food sovereignty movement, should thus be attentive to "the social and political configurations around *power* over food." (Patel, 2012). Sovereignty in this case does not mean self-sufficiency, rather it means the power to decide over how, where, and who produces food, and the power to decide what a food system should look like. Long-term food security, it is argued, can only be achieved through food sovereignty (Patel, 2012). The importance of women within food systems, and the way that gender inequality is created and perpetuated through food systems, is also crucially recognized as key in moving towards food sovereignty (Patel, 2012).

The food sovereignty movement speaks to issues of environmental justice and allows for an expansion of a (oft-criticised) Eurocentric account of what constitutes both environmentalism and environmental justice. Eurocentric notions of environmentalism have often focused on the cult of wilderness and the gospel of eco-efficiency, and have often been borne out of a colonial and binary split between nature and society (Roy and Hanaček, 2023). In developing a critical environmental justice scholarship, Pellow (2016) highlights that this should include intersectionality (Crenshaw, 1991), "multi-scalarity, anti-authoritarianism, and indispensability" (Roy & Hanaček, 2023, p.

307), and that critical environmental justice movements should not only address environmental or climate injustices, but also should stand up against the violence of the patriarchy and colonial ways of knowing and being (such as supporting the resistance of marginalised Dalit communities built upon internal colonialism in India) (Martinez-Alier & Roy, 2019). Critical environmental justice argues against the coloniality of the subjugation of lands, humans, and non-humans to maintain power hierarchies funnelled and controlled through Western ideas and institutions (Roy and Hanaček, 2023). This approach aligns well with the food sovereignty movement, which is led by a group of peoples (often from the global South), who reject the colonial and violent reordering and control over our food systems and who highlight that food sovereignty is more than about food, but is interconnected with our relations to environmental, gendered, social, and racialised hierarchies, to name a few.

In sum, the food sovereignty movement articulates that food is a basic human right, argues for democratic control over food trade and markets, and emphasises the importance of producing and maintaining a healthy food ecosystem (La Via Campesina, 1996).

2.6. Key debates within food sovereignty

Food sovereignty represents a "newly flourishing research agenda" (Gürcan, 2018, p.321), and there have been significant efforts to build upon and expand the concept of food sovereignty in research praxis (i.e., Akram-Lodhi, 2015; Jansen, 2015; Li, 2015; Bernstein, 2014; Edelman, 2014). While the food sovereignty movement has drawn significant attention to the ways in which inequality is produced through the global food system, some have expressed doubt over the usefulness of the concept as an academic analytic framing, and questioned its analytical and explanatory potential (Bernstein, 2014; Edelman, 2014; Hospes, 2014). Some of the main doubts and debates regarding food sovereignty lie in clarifying its conceptual ambiguities and contested aims (Agarwal, 2014), the relationship between the state and food sovereignty (Tilzey, 2017a; Gürcan, 2018), as well as the role of class, and other social and political differentiation amongst smallholder groups such as farmers or fisherfolk (Jansen, 2015; Bernstein, 2016; Gürcan, 2018). As Edelman surmises, "food sovereignty tends to hinge on a broad – but not always ideologically coherent – belief in democratic land control" together with advocating for food systems which are both ecologically sustainable and productive (2014, p. 921). How to achieve food sovereignty is thus dependent on how or if differing outcomes of food sovereign aims can be engaged with and

enacted, and by whom. This section therefore explores in more detail some of the key debates within food sovereignty, with the following section reflecting on how a food sovereign approach to fisheries may be understood and built upon.

2.6.1. Food regimes and the 'peasant' question

Food sovereignty is theoretically embedded as a key dialectical feature of the oft-debated 'corporate' food regime and can be understood as a response to increasing corporate control over the modern-day global food system (McMichael, 2009). The food sovereignty movement emerged as a direct reaction to increasing corporate control over food (Fairbairn, 2008). The concept of food regimes was consolidated in theorisation of the role of agriculture in the development of the capitalist world economy (Friedmann & McMichael, 1989). Basing its theoretical stance on world systems analysis, food regimes have become a prominent approach to studying global dynamics of food and agriculture within global capitalism (Jakobsen, 2020). At its core, food regime analysis consists of the study of "food's contribution to capital accumulation" (McMichael, 2013b, p.41).

In food regime literature, Friedmann identified two core, historical food regimes, as well as positing that a corporate food regime began in 1973 and continues until the present-day (2009). Friedmann (2009) first describes the colonial food regime, which existed between 1870-1914. The first food regime was intrinsically connected to the movement of food commodities from periphery to imperial core, mostly organised for the enrichment of the British Empire (Jakobsen, 2021). This time period was also the first instance that the price of food within colonial agricultural systems was organised around and for the global market, most notably and primarily through the setting of the global price of wheat (Jakobsen, 2021).

The second food regime, otherwise known as the mercantilist food regime, occurred roughly between 1947-1973 (Friedmann, 2009). This food regime heavily centred around U.S. hegemony, whereby trade and the export of surplus food conditioned global food prices. This meant that many of the colonial subject countries during this time became primary importers of food, creating a dependence on surplus exporting nations, such as the U.S, and also some countries within Europe. This food regime also sowed the seeds for the emergence of the large multinational agro-food

corporations that exist today (Friedmann, 2009).

Finally, described as a "new round of accumulation" entering the agri-food sector, (Friedmann, 2005, p. 228), the third, corporate food regime is a regime led by private capitals, due to a convergence of environmental politics and "a retail-led reorganisation of food supply chains" (Friedmann, 2009, p. 251). The corporate food regime embodies "a central contradiction between a "world agriculture" (food from nowhere) and a place-based form of agroecology (food from somewhere)" (McMichael, 2009, p.147). The corporate-environmental food regime is, in other words, a private transformation of the agri-food supply chain.

The significant literature laying out the relevance of food regimes and food sovereignty to understanding issues in the global food system has also highlighted the conceptual ambiguities present in both concepts. One conceptual ambiguity of the food sovereignty movement, and thus food regime literature, is the articulation of the political subject of the 'peasant' food producer, who has been ecologically and socially dispossessed from their own means of production by corporations. Within this movement, the picture of the peasant within agricultural production is that of "a cautious figure who balances food with cash-crop production, guided by a strong aversion to ecological and market risk" (Li, 2015, p. 205). As Li explains:

"*much of the mobilization around food sovereignty is directed against the global corporate food regime, and presents a maximally inclusive, hence generic, picture of the kind of non-global, non-corporate (i.e., national, local, small farm-based) food regime that needs to be defended*" (2014, p.206).

Articulated by scholars such as Van der Ploeg, peasant farming can be understood as different to entrepreneurial and capitalist farming. Here, peasant farming is said to have "a different internal logic", whereby "commodities are produced for downstream markets, but grounded on low levels of the commoditization of the main resources" (Van der Ploeg, 2013, p. 1004). Entrepreneurial farming on the other hand is where resources, but not labour, is fully commoditized. Capitalist farming is where all resources and labour are commoditized (Van der Ploeg, 2013). The peasant way is seen to encapsulate a pathway to food sovereignty, due to its incomplete commoditization

of productive resources, which is so characteristic of capitalist and entrepreneurial farming (Van der Ploeg, 2013).

More orthodox Marxist scholars, however, are critics of the conception of the peasant, or the peasant way, within food sovereignty. They suggest that the food sovereignty movement enforces too strict of a binary between the all-encompassing corporate food regime and a romanticised idea of the peasantry (Bernstein, 2016). This persistent binary can ignore the complications that many small-scale food producers often wish to be "incorporated into larger commodity networks" (Jansen, 2015, p.213) and can obscure the class dynamics of peasant producers (Bernstein, 2010). Bernstein goes further to argue that the peasant figure does not exist in the contemporary world, due to peasant modes of food production having been superseded by capitalist social relations of production and reproduction (Bernstein, 2006). Critics of food sovereignty also further question the potential for food sovereign and agroecological models of food production to be able to sustain or improve upon current capitalist levels of food production in agriculture (Bernstein; 2014; Jansen, 2015).

The more orthodox Marxist critique of food sovereignty, however, arguably negates the need for radical transformation of food systems in the face of increasing social, economic inequity and ecological degradation. Modes of capitalist and industrialised food production cannot be sustained due to intensifying ecological and social exploitation. Food sovereignty offers a pathway to counter prevailing tendencies of increasing inequality and environmental degradation in food systems, yet its contested and converging aims represent another key debate within food sovereignty and broader food activist movements.

2.6.2. Progressive and radical trends in food sovereignty

Despite increasing academic interest, food sovereignty remains a contested concept, and its evolving definitions and aims can be contradictory (Agarwal, 2014). Food sovereignty and other food movements' articulation of resistance to the increasing corporate control of food systems (Clapp, 2021) however differs. Holt Giménez & Shattuck (2011) have broadly defined the aims of food movements as belonging to four disparate groupings: namely, neoliberal, reformist, progressive, and radical trends. The food sovereignty movement can be understood as falling into

the two latter camps: the progressive and radical trends. The progressive trend opposes the industrial agri-food complex through practicing alternatives such as organic agriculture, or localised food networks. It generally focuses on a 'greening' of food production and consumption (Tilzey, 2024). Progressive aspects of food sovereignty can exist comfortably "within the economic and political frameworks of existing capitalist food systems" (Holt Giménez & Shattuck, 2011, p. 115). Contrastingly, the radical trend in food sovereignty is explicitly anti-capitalist, anti-corporatist, and anti-imperialist. It calls for "structural reforms to markets and property regimes, and class-based, redistributive demands for land, water and resources" (Holt Giménez & Shattuck, p.115).

Part of the radical approach to achieving food sovereignty, and to achieving structural reforms to markets and property regimes, can be understood as "addressing capitalist social property relations upheld by the state-capital nexus" (Tilzey, 2024, p. 2). The role of the state in facilitating capital accumulation, and how this may impede visions of radical food sovereignty, is thus another conceptual ambiguity prevalent within food sovereignty discourse.

2.6.3 The state and food sovereignty

The relationship between state, market, and capital have been the subject of complex long-ranging debates (Gramsci, 1971; Poulantzas, 2000; Lenin and Chretien, 2014). It is beyond the scope of this thesis to delve into these debates, however, in this section, I explore how questions and doubts remain over the relationship between the food sovereignty movement and the nation-state. This is particularly with regards to the ways in which the state can facilitate or impede democratic control over land, food, water, and other key resources (Alonso-Fradejas *et al.,* 2015). In food sovereignty, a general focus on the role of the 'local' and the 'global' has neglected the role of the nation-state (Clark, 2016), despite food sovereignty legislation being passed in multiple countries such as Mali, Senegal, Nepal, and Bolivia (Holt-Giménez & Shattuck, 2011; Alonso-Fradejas *et al*., 2015).

Consequently, the nation-state can have a facilitative or impeding role in creating radical visions of food sovereignty. However, neoliberal states, which often facilitate agribusiness interests, "are generally seen as a constraining rather than enabling force" for food sovereignty (Clark, 2016, p.185). This generally contrasts with food regime literature, whereby the move from the second to

the third food regime, is characterized as the state being displaced by the 'market' (McMichael, 2009). Instead, it is argued that "the state continues to play a central role" through facilitation of corporate-led contemporary food production and distribution (Otero, 2012, p. 284). Moreover, the market in this sense does not exist in a monolithic way, rather "it is constructed in large part by states" that establish "international agreements and national legislation that impose the neoliberal agenda" (Otero, 2012, p. 284). Thus, the state is key to perpetuating capitalist social property relations. However, the role of the state has often been under-addressed within some food sovereignty and food regime literature, due to a pervasive "strong and simple binary between trans-nationalized and essentially stateless capital" and a "'multitude' of potentially counter-hegemonic citizens" (Tilzey, 2024, p. 7).

State property relations and regulations are therefore as much key to capital accumulation and resource access in fisheries as in agriculture, because states are "the primary arbiter of property relations in most inland and marine capture fisheries" (Campling *et al.,* 2012, p.179). Yet, mainstream fisheries social science in general has been inattentive to the ways in which fisheries are shaped by global capitalism (Havice & Campling, 2021), as much as the state remains a conceptual ambiguity within food sovereignty discourse. The following section will explore in more detail how the concept of food sovereignty in fisheries has been taken up in research, which is the followed by a discussion regarding how a food sovereign approach to fisheries could be engaged with.

2.7. Food sovereignty & fish

Many of the aforementioned debates surrounding food sovereignty have focused on land-based, agricultural dynamics, meaning that there has been an "almost total absence of fish" in critical food systems understandings such as food regime theory (Foley & Mather, 2017, p.239). Despite this, food sovereignty activists have paid some attention to the struggles of fisherfolk globally. The locus of struggles for food sovereignty in fisheries has often been centred around issues affecting small-scale fisheries (SSF). Two-thirds of the fish caught by SSF is destined for direct human consumption (FAO, 2020). Moreover, approximately 90% of those employed in fisheries work in small-scale fisheries (Virdin *et al*., 2023). Despite SSF's importance to food and livelihood, SSF

have often been neglected in fisheries policy in favour of industrial fishing activities (Smith & Basurto, 2019).

The prioritization of the industrial fishery in contemporary policymaking contributes to the marginalization of SSF, something which is evident in blue economic discourses (Cohen *et al.,* 2019). Blue economy initiatives tend to see the ocean as a new economic frontier (Cohen *et al*., 2019). Within blue economic discourse, conservation of ocean resources and economic growth are not seen as contradictory premises. Furthermore, SSF are not perceived of as a part of the blue growth vision and are often squeezed out of policymaking and seafood trade conversation in favour of larger conservation and economic pressures (Cohen *et al*., 2019).

In 1997, due to increased marginalization and dispossession, small-scale fisheries globally banded together to establish the World Forum of Fish Workers and Fish Harvesters, from which the World Forum of Fisher Peoples was established in 2001 (Ertör *et al*., 2020). The World Forum of Fisher Peoples adopted food sovereignty as a guiding principle in 2007 (KNTI & WFFP, 2017) and is part of a larger movement of small-scale fish worker groups around the world which advocate for food sovereignty in fisheries. Stressing the vulnerability of many fishing communities to climate change, as well as emphasising how fishing communities are dispossessed of resources through the implementation of blue growth initiatives, fisher peoples joined voices with La Via Campesina and others in the food sovereignty movement (KNTI & WFFP, 2017).

Building upon earlier conceptualizations of food sovereignty agreed at the Nyéléni forum in Mali in 2007, the WFFP and Indonesian Traditional Fisherfolk Union (KNTI) published a document in 2017 defining six pillars of food sovereignty which are specifically relevant to small-scale fisheries. These pillars are: *1. Focuses on food for people; 2. Values food providers; 3. Localizes food systems; 4. Puts control locally; 5. Builds knowledge and skills; 6. Works with nature* (WFFP, 2017). The WFFP argues that the dominant framing of food security, which is often used as a means of understanding issues facing SSF, "ignores the root causes of hunger" in so far as it does not "address people's rights to access and control of territories" (2017, p. 6). Put another way, the reasons for food insecurity in small-scale fisheries lie not in inadequacy of fish supply, but are

rather due to inequity of access to and distribution of food, water, land, and other productive resources.

Despite movement towards recognition of food sovereignty in fisheries, fish has still often been neglected in favour of a focus on small-scale and agroecological farming. Still, there exists limited but growing academic sources which explicitly engage with food sovereignty and small-scale fisheries (Levkoe *et al*., 2017). Some of the academic literature relating food sovereignty and fisheries has focused on indigenous self-determination in fisheries governance (Lowitt *et al*., 2020), the relationship between equitable fisheries co-management and food sovereignty (Quimby *et al*., 2023), the role of small pelagic fish in achieving food sovereignty (Katikiro & Mahenge, 2022), and the convergence of fisheries resource justice movements and food sovereignty (Mills, 2018).

There has also been a broader academic fisheries literature which encompasses some of the key themes addressed by the food sovereignty movement, without explicitly mentioning food sovereignty. Themes range from rights-based approaches to fisheries governance (Allison *et al.,* 2012), justice for small-scale fish workers in the blue economy (Cohen *et al*., 2019), centring small-scale fish workers voices and needs in decision-making over fisheries governance (Chuenpagdee & Jentoft, 2018), and how direct sales of SSF products benefit fisherfolk (Stoll *et al*., 2015), amongst many other relevant themes. Supporting the aims of food sovereignty, such as gender equality and democratic control over aquatic food systems, allows for fisheries to be seen as a site of social struggle and distributional justice, rather than a site of governmental managerial concern (Bavinck *et al*., 2018).

Small-scale fisheries globally are integral to the struggle for food sovereignty in aquatic food systems, despite fisheries not being traditionally centred as part of food sovereignty discourse. Framing access to fish through food sovereignty arguably allows for a questioning of who gets to access fish, why, and under what conditions this fish is produced, and consumed.

2.8. A food sovereign approach to fisheries?

While the holistic focus on the relational conditions of production and consumption of fish within a food sovereignty framing is a useful means of understanding the complexities and inequities of aquatic food systems, it remains unclear how a food sovereign approach to fisheries which is critical of dominant power hierarchies may be engaged with. Formulating a broad food sovereign approach through which to understand the interconnectedness of the political, socio-economic, and ecological underpinnings of the production and consumption of fish around the world, could help to illuminate pathways to the equitable and ecologically- sensitive transformations of aquatic food systems, which the food sovereignty movement calls for. As such, a food sovereign approach to fisheries could encourage research that "questions the commodification of food and prioritizes the study of power dimensions in agri-food relations, driven by a deep concern with socio-environmental justice and bottom-up democracy" (Gürcan, 2018, p.324).

Drawing on the theory of food sovereignty, Levkoe et al suggest that a food sovereign approach to fisheries "builds on the ongoing work of those seeking to re-envision how we understand small-scale fisheries and their contributions to health, nutrition, and livelihoods" (2017, p.69). Levkoe et al propose that a deeper engagement between food sovereignty and fisheries is needed, as "a growing body of research on small-scale fisheries seeks to address socio-ecological relationships and issues of power" (2017, p.65).

Understanding issues of power in small-scale fisheries must take into account the role of capitalism in shaping environmental, social, and political relations of fish production and consumption. Yet, prevailing research of fisheries in social science obscures how capitalist relations shape fisheries systems through being "biologically and economically reductionist" (Campling *et al*., 2012, p.178). Existing research into the political economy and ecology of fisheries has explored the relationship between oceanic capital accumulation and the industrial marine capture fishery sector (Campling *et al*., 2012; Havice & Campling, 2021). However, research into pre-harvesting, harvesting, and post-harvesting in small-scale aquatic food systems and their relationship to processes of oceanic capital accumulation (for example, industrial fishing) has been much less engaged with.

As mentioned previously, the radical trend within food sovereignty calls for a structural reform of social-property relations, resource access, and market regimes that contribute to the dispossession and marginalization of small-scale food producers globally. It also calls attention to the interrelationship between food production and consumption relations. However, within fisheries only a few studies investigate consumption in relation to culture, market dynamics, and production systems (Campling *et al*., 2012). Much fisheries literature has instead focused on harvesting (Basurto *et al.,* 2020), obscuring broader trends in food-related political economy which shape both production, market exchange, and consumption patterns.

Future research which seeks to utilise a radical food sovereign approach to fisheries, namely, how social, and economic inequity, and marine environmental degradation in fisheries systems is produced and shaped by capital, could thus address some of the following research areas.

2.8.1. A feminist political ecology of aquatic food value chains?

Political ecology can be broadly understood as an analytical framework that emphasises that ecological issues must be conceptualised in relation to political economy (Sundberg, 2017). As a part of this, feminist political ecologists suggest that gender (as well as class, race, and other relevant factors) is a crucial aspect in mediating access to and control over natural resources (Sundberg, 2017). Drawing on insights from feminist political ecology, one way in which to approach building on an aquatic food sovereign approach would be to broadly analyse how racial and gendered labour relations are shaped by capital accumulation across the aquatic food value chain. This is because the contemporary, globalised aquatic food system reproduces labour regimes which perpetuate and reproduce systemic racial inequality (Clark, 2022). Such fisheries labour regimes exploit often vulnerable migrant workers in industrial and distant waters (DW) fisheries (Marschke & Vandergeest, 2023; Yea & Stringer, 2023). Moreover, the colonial history of fisheries science and management (Silver *et al.,* 2022) props up and reproduces certain logics which perpetuate inequality in aquatic food systems (i.e., a reverence for maximum wealth creation within sustainable limits in fisheries, to the detriment of aquatic food systems and their nutritional qualities.) This has led to some to call for nutrition-sensitive governance in fisheries (Robinson *et al*., 2022; Allegretti & Hicks, 2022).

One of the key demands of the food sovereignty movement is women's rights (Patel, 2012). Harvesting within fisheries has received the most attention within research, policy, and governance (Basurto *et al*., 2020). Yet, how capitalism shapes *all* sectors of aquatic food systems has also received relatively little attention. Policy attention has generally neglected the significant role of pre- and post-harvest sectors in fisheries (Basurto *et al*., 2020). Much of the labour carried out in pre- and post-harvest sectors in fisheries is done by women, most notably in small-scale fisheries. The processes of processing, trading, and selling fish, as is characteristic of the post-harvest fisheries sectors, are vital for aquatic food systems, yet are often side-lined in dominant analyses of the way in which capital accumulation may shape fisheries, and thus aquatic food trade and consumption patterns. Williams argues for understanding fisheries through a gender lens, which enables us to:

"*see the full productive fisheries economy, including pre-and post-harvest activities, and the reproductive economy that supports the narrowly defined fisheries production segment consisting mainly of harvesting and large-scale fish trade*" (2019, p.402).

As such, despite growing attention to the role of women in fisheries, women fishers' labour is frequently overlooked in common understandings of small-scale fisheries and their respective food systems (Kleiber *et al*., 2015). For example, "the FAO only collects statistics on the primary fish production sector", where "women make up only 14% of workers", leading to most global and national fisheries policies being gender-blind (Gopal *et al.,* 2020, p. 1). Oftentimes, women's work in fisheries is seen as an extension of household responsibilities, and is therefore often given little recognition, meaning that women are often not involved in decision-making processes in the formation of fisheries policies (FAO, 2023b). Taking the importance of gender as a *starting* point to holistically understanding aquatic food systems, and fisheries, is therefore key to exploring how inequality in fish production, market exchange, and consumption is produced through and with capitalism. Understanding and analysing how capitalism shapes the pre- or post-harvest sectors could therefore contribute to building upon a food sovereign approach to fisheries.

2.8.2. Aquatic food markets: production and consumption patterns

Capitalist expansion is often "dubbed the growth of markets" (Clark, 2022, p. 650). However, "markets do not emerge magically" (Campling *et al.,* 2012, p. 186). They are instead continuously

and deliberately made through varying forms of labour, as well as political, economic, and social processes (Ouma, 2015).

Indeed, many food systems and their constitutive markets are dominated by corporations, which bear significant consequences for both terrestrial and marine environments, including biodiversity loss, increased carbon emissions, and a tendency for overfishing to occur in the industrial fisheries sector (Mansfield, 2010; Clapp *et al*., 2018). Corporate control over markets has come hand in hand with oligopolistic and monopolistic control over the food production-consumption nexus, thus influencing how markets in commodities controlled by corporations are made (Khan & Vaheesan, 2017). This means that the size and structure of corporations have "considerable power to shape both their internal production process and their external environment" (Spies-Butcher *et al*., 2012, p.1).

Markets can therefore be engineered by dominant agribusinesses in their efforts to pursue the central tenets of capitalism, which are namely, maximizing profit, remaining competitive, and intensifying production (Wood 2002a; Clapp, 2021). Concentrated corporate ownership over the marketplace can influence food production methods, through for example, shaping what types of crops are grown, the labour conditions of land workers and fisherfolk, and what breeds of livestock are raised (Clapp, 2021).

Food is a political matter, and "implicates matters of production, reproduction, distribution, consumption – and the interlinkages between these across global, national and local scales" (Leach *et al*., 2020, p.2). There is growing recognition in marine social science that market actors shape the sustainability and equity of aquatic food systems (Terra Nuova, 2016). Yet, despite the constitutive role of markets to shaping conditions of food production and consumption, much reference to the concept of the market in food systems analyses is "taken for granted", where "it is rarely explained what markets are or how they came into existence" (Ouma *et al*., 2013, p.227). Markets enable the exchange, distribution, and consumption of food. I suggest that markets are engineered by powerful actors and specific interests in food systems and are not a neutral mediator of supply and demand. For example, the production of need (in a certain type of fish, for example) can be manufactured through advertising (Harvey, 2010), disproving the common implication in

neoclassical economics and in fisheries governance circles (i.e., FAO, 2024) that a 'naturalised' demand is the sole reason for fish commodity production.

Quality and standards-making in food markets, as well as the influence of world market prices, hold significant sway over "power relations in fisheries production systems" (Campling *et al*., 2012, p. 184). Within food sovereignty discourse and food systems analyses, the globalised, corporate-controlled nature of food production, markets, and consumption are often spotlighted as the main causes of environmental degradation and inequities prevalent within contemporary food systems (McMichael, 2009; Clapp, 2021; La Via Campesina, 2021). Here, an opposition to global, corporate-controlled markets is expressed through a reassertion of the importance of the 'local' market, where "relocalizing and regenerating autonomous food systems" is seen as a key means in which to achieve food sovereignty (Pimbert, 2015, p.37). An interrogation into the processes which go into making such local and global food markets, particularly with regards to aquatic food, is therefore lacking.

Centring analyses of how capitalist market dynamics influence food production and consumption could be one way in which to build on the aforementioned call for a food sovereign approach to fisheries (Levkoe *et al*., 2017). Examining how aquatic food markets are made *and* how these relate to aquatic food production and consumption becomes pertinent if we wish to move towards more equitable and sustainable aquatic food systems.

Future research which takes market (s) in aquatic foods as a principal object of critical analysis, combined with how markets shape conditions of fisheries production, could be a fruitful avenue in which to build upon a food sovereign approach to fisheries. Dissecting what the market is, how consumption patterns and/or demand can be engineered by powerful actors, and how these market dynamics are interrelated with modes of production in all sectors of the fishery (not just harvesting), could be a way in which to centre power dynamics in fisheries systems.

2.9. Conclusions

Food is vital for human existence and weaves together many dimensions of social and cultural life. It is, in other words, "a system of systems, spanning phases from production to consumption (and

waste)" (MacRae, 2016, p. 229). Varying disciplines have studied the role of food to highlight wider societal processes at work, such as "political-economic value-creation, symbolic value-creation, and the social construction of memory" (Mintz & Du Bois, 2002, p. 99). Fish, as a fundamental part of many food systems across the globe is embedded in cultural, political, and social patterns existent in many societies today. Fish are also a key source of food, livelihood, and culture for many millions of people around the world. Yet, fish has not traditionally been acknowledged as food in fisheries management, policy, and science.

A relatively recent turn towards understanding fish in terms of food and nutrition security, means that the importance of aquatic foods to nutrition and health is back on the policy agenda (Bennett *et al.,* 2021; FAO, 2024). However, there remains a critical lack of power analyses in such a turn. This paper has therefore focused on two possible and dominant ways of understanding fish as food, namely through the framings of food security and food sovereignty. Scholars, activists, and governmental institutions have reiterated the importance of fisheries to food security, particularly for fish dependent communities in the global South who are more vulnerable to the effects of overfishing and climate change (Maire *et al*., 2021). However, there appears to be a divergence in the fish as food turn, where a previous emphasis on the importance of fish to small-scale fisheries' food systems and livelihoods, appears to be turning towards highlighting the role of aquaculture in ensuring global food security amid a growing human population (FAO, 2020; FAO, 2024). Situating aquatic foods as vital to food security is important. However, through overlooking the political, social, and economic drivers which create and sustain inequities in the aquatic food production-consumption nexus, the fish as food turn may not be enough to counter prevailing power and access concentration tendencies in aquatic food systems (Mansfield, 2010; Österblom *et al*., 2015; Cohen *et al.,* 2019).

Fish are food, and the politics over inequality and marginalization in fisheries is as important as questions over equity, democratic control, and ecological degradation in terrestrial food systems. The politics of aquatic food systems, which small-scale fisherfolk involved in the food sovereignty movement call attention to, is a vital yet little explored research topic. Future academic research could seek to explore the politics of fish within food systems through a power-sensitive approach to fish as food, like food sovereignty. A food sovereign approach could illuminate the power-laden

relationships between capital accumulation and exploitative modes of aquatic food production, unhealthy and inequitable patterns of food consumption, and how western-based ontological relations with the oceans and seas fundamentally drive marine ecological degradation (i.e., Steinberg, 2001). Research into dispossession, the political economic drivers of social inequities and ecological degradation could further illuminate both aquatic food sovereignty and food security debates in this regard. A power-sensitive food sovereign approach which challenges existing power structures that perpetuate inequity may assist in resolving the inherent contradiction between fish and food and fish as commodity. In the face of blue economy initiatives, climate change, and concentration of corporate wealth and control in fisheries, a renewed focus on the politics of fish as food is vital for the many millions of people who rely on aquatic foods globally.

The following chapter will explore the role of markets as institutions within capitalism. To build on a food sovereign approach to fisheries, a focus on *why* and *how* markets are made in aquatic food systems enables a clearer insight into how inequities are produced in the production, consumption, and exchange of aquatic foods.

Chapter 3: How are aquatic food markets made? Centring cultural political economy & 'market-making' to expand on a food sovereign approach to fisheries

3.1. Introduction: markets behaving badly?

Markets seem to have been brought alive in the contemporary world. Often given personal attributes, such as 'market fear' (Deev & Plíhal, 2022), the ability to 'defeat' politicians (Marr, 2025), as well as, perhaps most famously, having the ability to 'fail' or 'succeed' (Stiglitz, 1989), they are a fundamental but often naturalized entity through which the buying, exchange, and sale of goods and services occur. But is there more to markets than just their appearance of benign resource distribution?

In much food systems literature regarding the global South, a pervasive, often normalised, and invisible ideology of market-led food governance is seen as a means of alleviating poverty, boosting income, and providing development opportunities for smallholders (Borras, 2003; Akram-Lodhi, 2007; Corson *et al*., 2013). This is also the same for the governance of environmental resources, where 'nature' is commodified into ecosystem services (for example) for market-led environmental governance to enhance conservation objectives and economic growth (McAfee, 2012; Corson *et al*., 2013). In all these cases, the market does not directly control the economy, like states, but rather, markets, and their prices create "incentives that 'regulate' and influence our behaviour" (Spies-Butcher *et al*., 2012).

Markets have become much more central to capitalism than in other previous ways of organising economies and societies (Wood, 2002a; Spies-Butcher *et al.*, 2012). The commodification of food, labour, and land (amongst others) in capitalism means that "much of life becomes subject to the competitive pressures of markets" (Spies-Butcher *et al*., 2012, p. 116). Consequently, markets play a vital role in food and environmental governance (this is explored more in chapter 5 regarding fisheries post-harvest governance specifically). However, despite the centrality of markets to food and environmental governance, the social, environmental, and economic processes that make up aquatic food markets have been significantly understudied. What this means is that the laborious social processes, calculations, and materialities that fabricate demand and consumption in aquatic

food markets need to be taken seriously as objects of research enquiry, to understand how inequities and ecological degradation occur in aquatic food systems. As such, despite the omnipotence of markets, there is still a need to conceptualise how aquatic food markets really function, what social processes lie beneath the surface of the 'naturalised' market, and what governmental effects markets produce for fisheries.

This PhD chapter will firstly highlight the importance of theoretically and empirically analysing how aquatic food markets are made. In doing so, I argue that deconstructing how markets are made in aquatic food systems is a useful means of building on a food sovereign approach to fisheries. The chapter then goes on to outline the work of Karl Polanyi (1957) in his theorisation of the market in the development of capitalism. After this, key debates within critical marketization literature are highlighted, through focusing on performativity approaches to market literature as well as the understanding of markets from a Marxian political economic perspective. It will then explore how a Marxian political economic perspective can be read with performativity approaches to markets through cultural political economic theory (Sum & Jessop, 2013), and how this may be useful in moving towards understanding issues of inequity, environmental degradation, and therefore food sovereignty, in fisheries.

3.2. Aquatic food markets and food sovereignty

The engineering of markets has received increased scholarly attention within environmental governance literature, particularly with regards to how the incorporation of market logics into conservation and environmental policy has led to a reconceptualization of 'nature' (Corson *et al*., 2013; Asinayabi, 2018; Christiansen, 2021). In the marine sphere, finance mechanisms such as marine biodiversity offsetting (Jacob *et al*., 2018), marketized transferable rights in fisheries through fish quotas (Holm & Nielsen, 2007; Høst, 2015; Cardwell & Gear, 2013), and 'debt-for-nature' swaps, where states are relieved of debts through committing to managing oceans for conservation (Silver & Campbell, 2018) (amongst others)[11], are becoming an increasing means of incentivizing environmental management through private investment (Christiansen, 2023). Markets are understood to shape the social relations inherent within fisheries production and

[11] As an example, Blue Carbon trading and accounting, where companies who wish to offset their greenhouse gas emissions buy carbon credits for mangrove, seagrass, and tidal marsh restoration projects (Friess *et al.,* 2022).

processing (Campling *et al.,* 2012). However, social scientific fisheries literature has either generally focused on the politics of fisheries management or improving the sustainability of seafood value chains through markets (Campling & Havice, 2018). In this case, 'sustainable seafood' is used a tool of fisheries market-led governance, where fish and other aquatic foods are certified as sustainable by non-state actors such as the Marine Stewardship Council (Ponte, 2012). Yet within *aquatic food* literature, there remains a lack of critical attention regarding how aquatic food markets are engineered by specific interests, the power and social relations that underpin capital accumulative strategies in such markets, and how, in turn, these capitalist market social relations shape fisheries production.

Focusing on how markets are made in aquatic food systems is a worthy object of research enquiry for a number of reasons. Firstly, the corporate food regime is characterized by food justice-oriented scholars as dominated by "monopoly market power and mega-profits of agrifood corporations" (Holt Giménez, 2010). As previously mentioned, within the aquatic food sphere, corporations have appropriated increasingly scarce fisheries resources which has funnelled power into the hands of few corporate actors (Mansfield, 2010; Österblom *et al*., 2015). How do fishing and processing corporations attain such market power, and what does market power mean in this context? If fish is understood as embedded in a politicised and unequal food system, then this must also come with interrogating the politics of the aquatic food production-consumption nexus (which includes the sphere of market exchange) within contemporary capitalism. Interrogating how market power becomes monopolized to propel inequity and mega-profit in aquatic food systems is vital to clarifying the role of markets in sustain the accumulative capitalist system. As Peck neatly surmises, "merely tilting at the satanic mill of the market cannot be enough; the ever-more pressing need is to make sense of the satanic malls of globalizing, deeply networked, neoliberal capitalism," and what role the supposed 'free market' revolution has in such a system (2012, p. 125).

Secondly, wide-ranging fisheries and economic geography literature explores the role of markets within fisheries systems (Ponte, 2012; Cardwell, 2015; Høst, 2015; Penca *et al*., 2021). However, while this valuable literature situates the market as a fisheries governance tool, there has, again, been a lack of research regarding how markets are made in relation to aquatic *food* systems. Within food sovereignty, despite the centrality of opposition to globalized, corporate-controlled food

systems (La Via Campesina, 2021), as well as an anti-imperialist and anti-capitalist stance (Holt Giménez & Shattuck, 2011), an explicit centring of *how* and *why* markets are made is limited. Valuable literature in fisheries social science has centred on how capitalist development shapes production relations within the fisheries harvesting sector (Campling *et al*., 2012; Pinkerton & Davis, 2015; Howard, 2017). However, how capitalist markets shape social-property relations in all sectors of the fishery in relation to their aquatic food markets, has been much less examined. A critical interrogation into the social, economic, and environmental workings that make up market institutions in capitalism is therefore needed to understand inequities and power dynamics in contemporary food relations.

As is explored in chapters 5 and 6, the 'market' is not simply a neutral organising principle for naturalised supply and demand in aquatic food systems. It is rather used as an organisational tool by development agencies to 'develop' and manufacture relations in small-scale fisheries. In chapter 7, I situate the market in relation to the effects of industrial overfishing, where women fish processors and traders increasingly rely on capitalist inputs to the small-scale fishery, such as imported fish or industrial bycatch, primarily due to low levels of small-scale fish landings. All of these thesis chapters show how the market works to the effect of further embedding capitalist and/or neoliberal social relations in Ghanaian small-scale fisheries. I importantly suggest here that 'denaturalizing' the market in aquatic food systems is important if we wish to build upon a critical food sovereign approach to fisheries, because we are then able to understand in a clearer manner how processes of inequity occur in the interrelationships between the production, exchange, and consumption of aquatic foods. However, before expanding upon the importance of deconstructing the market to build on a critical food sovereign approach to fisheries, I first to turn to how the market has been conceived of as vital to the development of capitalism through the work of the economic anthropologist, Karl Polanyi.

3.2. Polanyian insights into the 'market' in capitalism

Debates regarding the interrelationship between capital, markets, and the state have a long and complex history (Polanyi, 1957; Gramsci, 1971; Marx, 2000). For example, the Austro-Hungarian economic anthropologist, Karl Polanyi, strongly critiqued the neoclassical economic notion that the market was a self-regulating entity, which assumed that all participants in the market were

rational and self-maximizing actors (1957). He acknowledges that no society can exist without a means of the organisation and distribution of goods. However, what makes a capitalist market economy unique, in Polanyi's understanding, is that it separates "society into an economic and a political sphere" (1957, p. 74). This means that in a capitalist market society, economics becomes "isolated and imputed to a distinctive economic motive" (1957, p. 74), and is seen as separate to society.

The branching off of economics from society in capitalism means all parts of human life become subject to the whims of the market (Polanyi, 1957). Here, the forces of the market go too far in subsuming all of life itself, creating what Polanyi (1957) describes as 'fictitious commodities', such as such as labour, capital, and land[12].

Polanyi highlights that capitalist production itself is reliant on 'external' factors such as land and labour, that are not in themselves produced by the market but appropriated by it. Polanyi suggests that labour is only another word for life itself, and that land is nature (1957, p. 77). As such, Polanyi argues that the market plays a coordinating and allocative role in land, labour, and capital, and can therefore shape the productive realm of fictitious commodities. The market in capitalism does so through facilitating and ensuring the capitalist subordination of society (and life itself) to the separate realm of market economics. Previously considered part of 'society', land and labour becoming subject to the laws of the market was understood by Polanyi as the market realm extending too far into previously uncommodifiable aspects of human life (i.e., labour, land). This he noted, would inevitably lead to a double movement, or countermovement "to resist the pernicious effects of a market-controlled society" and to "check the action of the market relative to labour, land, and money" (1957, p. 79).

Polanyi is often referred to in heterodox economic literature due to his emphasis on the social relational nature of market systems, and his strong critique of neoclassical understandings of markets (i.e., Peck, 2012; Cahill, 2020). While Polanyi's theory is subject to some critique (Tilzey, 2017a), it is still a useful springboard into understanding how the market became integral to the

[12] Whether land is truly fictitious has been taken up in more recent geographical debates (I.e., Christophers, 2016).

historical and contemporary development of capitalism, and speaks to why capitalism continues to perpetuate itself, to the detriment of 'nature' and 'society'.

The next sections of the thesis will focus on how the market as an object of study has been understood, predominantly through three theoretical stances.

Firstly, it will examine how markets are understood through performativity approaches, using literature from critical marketization studies. Here, markets are recognised as made up of social relational processes (Berndt & Boeckler, 2009) and are broadly seen as economically performative social constructs (Çalişkan & Callon, 2009).

Secondly, it will then examine how markets have been understood (but arguably deprioritised (Christophers, 2014; Braun, 2016)) in Marxian political economic approaches. I respond to a call by Christophers (2014) for a more constructive dialogue between performativity and Marxist approaches to markets.

Thirdly, despite being alluded to, but not fully explored in Sum & Jessop's (2013) theory of cultural political economy, I make theoretical and empirical research contributions, through advancing understandings of the dynamic, performative, *and* structural tendencies of aquatic food markets in capitalism. I suggest that cultural political economy (Sum & Jessop, 2013) can help clarify *how* and *why* aquatic food markets are made through helping us to understand a combination of the performative and structural tendencies of markets, as well as their governmental effects in capitalism. Overall, I contribute to an understudied but vital research topic, where I advance understandings of why critically studying markets matters to advancing political economic approaches (Christophers, 2014), and how this approach is particularly useful in understanding complex power dynamics in aquatic food systems.

3.3. Performativity approaches to the market

The concept of performativity in relation to markets and the economy arose out of earlier studies of Science and Technology, most notably Actor Network Theory (ANT). Here, it was argued that scientific knowledge was not generated because of a 'world out there', but rather that scientific

practices were made up of social aggregates and actor-networks, and that knowledge is a social product (Law, 1992; Braun, 2016). A understanding of the 'social' by ANT theorists is that it is "nothing other than patterned networks of heterogenous materials" (Law, 1992, p. 381). For ANT social relations, between people for example, are always mediated through materials or objects, which shape relationality and are part of the social (Law, 1992).

Taking inspiration from ANT, and more broadly Science and Technology Studies, scholars in the field of economic performativity argue that markets are economic facts, "which are outcomes of historically variegated processes of economization" (Ouma, 2015, p.9). The concept of economic performativity has close parallels with queer informed and gendered performativity approaches, which argue that gender is repeatedly performed to construct gendered identities (Butler, 2007). In this case, the economy is not an object of study but rather is a performance of economics. This means that expert statements about the economy contribute to creating what economics is, rather than describing it as a separate and finalised set of occurrences (Cardwell, 2015). Thus, economic ideas do not act on the economy as external variables but constitute the economy through performing practical and theoretical economic ideas (Braun, 2016).

Economic performativity counteracts a dominant assumption in neoclassical economics that there is something inherently natural about markets; that markets are somewhere 'out there' to simply and neutrally mediate supply and demand relations (Ouma, 2015). Economic performativity scholars instead examine how markets are complex realities which "can be configured differently, as each configuration can be designed to respond to particular organisations and requirements" (Callon, 2010, p. 163). Markets are therefore made, contested, and remade according to different political and economic ideologies (Callon, 2010).

The performativity-based notions of 'calculativeness' and market devices are most relevant to furthering understandings of how the market is constructed in regard to aquatic food systems. Calculativeness, according to Callon, cannot exist without calculating tools, or market devices, such as accounting and the "tools it elaborates" (1998, p. 23). Market devices, allow for supposedly 'economic behaviour' to coalesce in markets, and have an integral role to play in "configuring economic calculative capacities and in qualifying objects" (Muniesa *et al*., 2007, p. 5). In a

Foucauldian sense, such devices can also contribute to the disciplining of behaviour (Callon, 1998).

Calculativeness in market exchange can involve imbuing goods with certain qualities. In a second-hand car market, for example, the advertised qualities of a car for sale must "stabilize and singularise its properties as a good (e.g., placing a newspaper advertisement specifying the age, mileage condition and so forth, of the car)" (Aruajo, 2007, p. 214). The act of placing a newspaper advert with desirable car qualities contributes to creating a market (in second-hand cars). In this micro example, the market devices in this second-hand car advert would be the advert itself, as well as the desirable car qualities the advert details, as the advert and advertised car qualities allow for economic behaviour to coalesce in and around the car market.

Yet, while market devices have been outlined by some as enabling abstraction to allow for an analysis of capitalistic social forms (Muniesa *et al*., 2007, p. 20) (i.e., through an analysis of standards and quality-making in markets), economic performativity (including ANT) approaches to markets have been critiqued due to an underrepresentation of power dynamics and the dominance of capitalism (Roberts, 2012; Cardwell, 2015; Cahill, 2020).). This is as, performativity approaches tend to give "economic ideas casual priority in the analysis of markets" (Cahill, 2020, p.29), thus equating the logics, power, and dominance of capitalism as comparable to other existing economic ideas and logics. Poststructuralist approaches such as ANT have also been critiqued for overidentifying with how concrete and contingent actor-networks are performed, at the risk of ignoring how such networks are mediated through capitalist processes such as the extraction of surplus-value (Roberts, 2012). Performativity approaches to markets thus tend to downplay any sort of structural basis to markets, through seeing them as more contingent upon agents, networks, and qualifications.

The impasse between these two lines of thought, i.e., between the micro school of thought that embodies the performativity approach to markets, and the tendency for abstraction in the Marxian school of thought, however, "are too inextricably linked for their analysis to be compartmentalised along disciplinary lines" (Braun, 2016, p. 258). Braun outlines that the empirical challenge of the study of markets therefore is to outline how "market devices, market structures and forms of

capitalism are interwoven" (2016, p. 258). As Christophers further explains, performativity approaches have "illuminated the nature and dynamics of numerous market forms and have illustrated the embedding of such markets both in social networks and in various calculative practices" (2014, p. 19). He goes on to explain that performativity approaches have also "typically resisted generalization about markets and about the accumulative capitalist system they sustain" (2014, p.19).

Can we therefore ask what economic things become calculable in the making of aquatic food markets, and how, or if, these economic things relate to capital accumulation? If, as Muniesa *et al* (2007) suggest, market devices can help with abstraction, then how can the study of market devices and calculative agencies in aquatic food markets speak to *how* markets satisfy or constrain capital's expansion imperative? (Christophers, 2014).

3.4. Do markets matter to Marxian political economy?

Capitalism can be defined as "a set of social relations whereby exclusive ownership and control of the means of production is concentrated in the hands of a small group, or class" (Cahill, 2020, p. 34). Political economy can be understood as "the endeavour to create defensible generalizations about capitalism as a system of accumulation" (Christophers, 2014, p. 13). Marx (2000) noted, in his theory of surplus-value that capital accumulation depended on extracting "more value from the labourers than they needed to produce themselves" (Harvey, 2012, p. 7). Due to competitive relations within the capitalist class, members of this class strive to exploit workers to maximize surplus value. As such, those who do not own productive property are compelled to sell their labour power through markets to those who do own productive property, and to "purchase what they collectively produce through consumer markets" (Cahill, 2020, p. 34). Capitalist value production also always relies on an expanded reproductive circuit of (cheap) nature, care, and (free) labour (Moore, 2015; Fraser, 2023).

Marxian political economic approaches illuminate the social (and often exploitative) processes that go into making a commodity through a focus how value is created, most notably in the productive realm. A Marxian political economic approach delves beneath the appearance of the market price to ask what social, economic, environmental, and political processes go into making

a commodity (which is then, in theory, sold at 'market') (Marx, 2000). Marxism has a strong historical relation to national liberation and anti-colonial movements in Africa, particularly in relation to the Pan-Africanist movement, of which Kwame Nkrumah was a key leader (Ochieng Okoth, 2023). However, despite a multitude of black radical politicians and politics emerging from Africa with thinkers and leaders such as Amilcar Cabral, Patrice Lumumba, and Andreé Blouin profoundly shaping the political discourse around anti-imperialism and decolonisation, a decided split has occurred that has separated the relevance of Marxist debates to current decolonisation struggles in Africa (Ochieng Okoth, 2023). It is however argued by Ochieng Okoth that Marxism is deeply relevant to the political, social, and economic struggles for liberation in contemporary Africa.

Marxian political economy contrasts with neoclassical economics, which suggests that value is made through exchange processes and consumer preferences, and that "the value of a commodity is fully reflected in its market price" (Spies-Butcher *et al*., 2012, p. 21). The object of analysis for neoclassical economists is often solely the relationship between commodities and their prices, which forms the appearance of a commodity, rather than the social (class) processes that have gone into making it (Marx, 2000; Cahill, 2020). The dominance of neoclassical economics as an organizing principle in neoliberal capitalism contributes to the invisible and naturalised hegemony of the 'market' and its social-property relations in food systems.

However, while Marxian political economy is a useful means of identifying and analysing the complex social and economic processes that go into the making of food systems, it has faced some critique. This is because it is argued that orthodox Marxian political economy tends to "focus analytically on relations of production, largely to the exclusion of the market-based realm of exchange" (Christophers, 2014, p. 12). As Harvey (2012, p.10) even notes, Marx's critique of political economy follows ''as closely as he can to the bourgeois conception of a law-like level of generality – of production – and excludes the 'accidental' and social particularities of distribution and exchange and even more so the chaotic singularities of consumption.''

Despite this apparent neglect of the social particularities and singularities of exchange and consumption, some have argued that markets are fundamental to capital accumulation because

they shape social property relations through capitalist laws of motion, such as increasing competitive relations, the driving down of productivity costs, and profit maximization imperatives (Wood 2002a; 2002b).

In essence, without markets, the circuit of capital would not be able to flow. This is because the transformation of a commodity into money through market exchange is vital to the renewal of the production process in capitalism. This means that the profit made from market exchange enables the surplus value (profit) to be reinvested in the means of production (McLellan, 1980). Market-based competitive relations compel the capitalist to reinvest this surplus profit (Christophers, 2014). However, importantly, in order to accumulate profit, there must be a growing market which can absorb the growing quantities of commodities produced (Harvey, 1975). If an effective demand (or ability to pay) for a commodity in a market cannot be materialised "then the conditions for capitalist accumulation disappear" (Harvey, 1975, p. 9).

Markets therefore matter to our understanding of societal relations within contemporary capitalism, and "their dynamics are significant not only in and of themselves but also in so far as they impact materially *on* the productive realm" (Christophers, 2014, p. 15). Christophers posits that a better understanding of capitalist markets and how they shape production relations and surplus value extraction would be enhanced by blending performativity market approaches with a Marxian political economic approach (2014). He notes that while these two approaches have often been seen as the polar opposite of one another, performativity approaches to markets can enrich political economy (2014). Here he suggests that using the tools of economic performativity approaches, such as calculative market devices, can assist "to generalize about market configuration *in relation to* value and the value form" (2014, p. 19).

Christophers argues that empirical and theoretical work regarding performativity approaches to markets are dominated by "discrete, disconnected, local historical examples" which do not factor in the power relations which are needed to perform such markets (2014, p. 14). An analysis of the market devices that go into the making of markets should be systematized and abstracted to factor in the dominance of capitalism and power relations in current performativity market approaches (Christophers, 2014).

It therefore becomes pertinent to ask two questions. Firstly, what would it mean to combine a political economic approach which also seriously problematizes markets, "in all their hybrid, variegated, and heterogeneous forms"? (Peck, 2012, p. 118) Secondly, how can this be done?

As markets are often the site of food distribution and exchange, analysing food market exchange and food production in separate siloes can only give a partial understanding of what constitutes contemporary food relations in market capitalism. The tools and market devices that go into making aquatic food markets, and their relation to the effects of industrial overfishing on Ghanaian small-scale fisheries, are explored in the first two empirical chapters of this PhD thesis. A cultural political economic approach is well-suited to examining both the structural tendencies (Marxian) and cultural contingencies (performative natures) of aquatic food markets, which the next section of this chapter will examine.

3.5. Illuminating power dynamics in aquatic food market systems through cultural political economy

The theories outlined in cultural political economy by Sum & Jessop (2013), are well placed to respond to the call by Christophers (2014) for a melded Marxian political economy and performativity approach to markets in capitalism. Cultural political economy blends political economy, anthropology, and critical discourse analysis, amongst others, to create a schema for studying the production of hegemony (Sum & Jessop, 2013). Cultural political economy, in a sense, then offers a middle ground between:

"*'soft economic sociology', which one-sidedly emphasizes the constructivist features of economic activities and their greater or lesser social embedding in wider sets of social relations, and 'hard political economy', which one-sidedly naturalizes and reifies the basic economic categories and 'laws of motion' of the profit-oriented, market-mediated economy*" (Sum & Jessop, 2013, p. 468).

One of the ways in which Sum & Jessop outline that a cultural political economic approach can be advanced is through "applying the insights of social studies of science to issues in political economy" (2013, p. 19). In doing so, cultural political economy incorporates the basic materiality of capitalism, its inherent crises and contradictions, and different accumulation strategies, while

also centring semiosis (or meaning making) as a core tenet of the approach, in what Sum & Jessop call the "continuing dialectic of path-dependent path-shaping" (2013, p. 475).

Advocates of cultural political economy suggest that performativity approaches to markets can risk "losing sight of the specificity of the 'economic' by subsuming the 'economic' under a general analysis of semiosis, meaning-making, identity formation and performativity" (Sum & Jessop, 2013, p.233). Orthodox political economy on the other hand, can risk losing sight of how subjects and subjectivities are formed, "how modes of calculation emerge, come to be institutionalized, and get modified" (Sum & Jessop, 2013, p. 176).

In exploring the how and why of market making, Sum & Jessop (2013) explain that economic imaginaries are vital to the making of markets. Here, economic imaginaries "frame *and contain* debates, policy discussions and conflicts over particular ideal and material interests" which also "guides collective calculations" about the economic world (2013, p. 165). Economic imaginaries can be developed through social forces, which seek to establish a particular imaginary as a hegemonic or dominant frame. As such, economic imaginaries "identify, privilege and seek to stabilize some economic activities from the totality of economic relations and transform them into objects of observation, calculation and governance" (2013, p. 166).

Cultural political economy enables us to understand both the cultural contingencies and structural tendencies in aquatic food markets (Sum & Jessop, 2013). A focus on the market devices and calculative agencies *and* their relation to structural crisis tendencies in industrial fisheries in the making of aquatic food markets is important if we wish to understand issues of inequity and environmental degradation in fisheries. Focusing on market-making, or 'actually existing markets' in aquatic food systems, and how they sustain or constrain capital accumulation and inequities, could expand on a food sovereign approach to fisheries, which primarily advocates for justice, equity, and sustainability for small-scale fisherfolk through questioning underlying structural social-property relations in capitalism.

As is explored in chapters 5 and 6, development-based economic imaginaries, such as the market as a tool of development, are spawned to soften the adverse consequences of industrial overfishing

for small-scale fisherfolk. Cultural political economy allows us to attend to what kinds of economic imaginaries are generated and retained in fisheries *due to* the structural crisis tendencies of capital's contradictory relationship with 'nature' and the oceans. As such, cultural political economy avoids overt relativism and a lack of power analysis, while also allowing for structural tendencies in capitalism to be considered 'real' without being deterministic.

Development-based economic imaginaries promise to "fix" the crises and contradictions created by and inherent to industrial fisheries through market-based interventions in small-scale fisheries. As Harvey notes, economic growth in capitalism "is a process of internal contradictions which frequently erupt as crises" (1975, p. 9). The economic imaginary of the 'market' as a benevolent and equalizing actor is reinforced through continual crises in industrial fishing, which has caused low levels of small-scale fish landings, and contributes to marginalizing Ghanaian small-scale fisherfolk. The effects of the crises of industrial overfishing allows for development actors to problematize certain aspects of the Ghanaian small-scale fishery (i.e., chapter 5 - a loss of income, but problematized as due poor fish handling and hygiene), while also presenting the 'market' as a solution (or economic imaginary which is then implemented) to a loss of income in the small-scale fishery.

Why do industrial bottom-trawlers in West African waters overfish or fish illegally? I argue that part of the answer, in amidst all the complex social labour processes that constitute industrial fisheries, lies in how the realization of surplus value *through* aquatic food market exchange must be assured by fishing related firms. If the firms who own the trawling vessels in Ghanaian waters cannot realise their profit through the sale or exchange of their catch in the market, then there is no suitable avenue through which they can compete and accumulate capital. As such, the assurance of exchange or sale must be made, arguably (and partially) through the engineering of demand in aquatic food markets (i.e., through advertising).

This argument is perhaps more relevant for some aquatic food consumers in the global North. Unfortunately, it is beyond the scope of this thesis to analyse aquatic food production in relation to consumption and demand dynamics in the global North (or indeed China), as well as to delve deeper into how markets are made through the state apparatus. What I explore in this thesis

specifically, is how a combination of the increased (and potentially engineered) aquatic food demand *and* the profit accumulation strategies of industrial trawling firms have driven overfishing in West African waters. Particularly, this in the sense of how industrial fishing has changed social-property relations through the medium of the 'market' in the Ghanaian small-scale fishery, and how this has further propelled the creation of market devices in small-scale fisheries in order to alleviate the crises and contradictions of industrial fisheries.

Focusing on the complex role and constitution of the market in aquatic food systems is a means of building on a food sovereign approach to fisheries. This is because taking a broader view of markets, and how they mediate the production-consumption nexus in aquatic food systems, can enable clarity over how fish in production, exchange, and consumption enables or constrains capital accumulation.

3.6. Conclusions

Markets are a pervasive feature of contemporary life, and permeate every sphere of society (Ouma, 2015). It is thus "important to take markets, their making, and their governmental effects seriously" (Ouma, 2015, p. 213-214). This chapter has given a brief overview of dominant approaches to understanding markets and their social embeddedness. It has also highlighted how Marxian political economy has tended to ignore how markets may be engineered in lieu of a focus on the productive realm (Harvey, 2012; Christophers, 2014). In doing so it has set up the theoretical underpinnings of this PhD, which has namely been to problematize the existence of aquatic food markets in Ghana and their relationship to the effects of industrial overfishing on small-scale fisheries. While markets have been key to progressing understandings of the financialisation of marine resources (Christiansen, 2023), and the development of environmental governance (Corson *et al.,* 2013), markets and their making in aquatic food systems have been relatively ignored.

The following three empirical chapters in this PhD take the Ghanaian aquatic food market as an object of study in its relation to capitalist dynamics in the industrial fisheries sector. Using a blend of Marxian political economic approaches, as well as a performativity focus on market devices (inspired by cultural political economy (Sum & Jessop, 2013)), I explore the power and politics of aquatic food systems through the window of the market, with a view to understanding what social,

environmental, and economic processes and relations constitute the dynamic making of Ghanaian aquatic food markets. The empirical case studies in this thesis offer only a tiny slice of processes of marketization *in relation to* industrial fishing in aquatic food systems. Throughout, I reiterate that understanding *how* and *why* markets are made in relation to capital accumulation can enable a better comprehension of issues of justice, equity, and therefore food sovereignty, in aquatic food systems. In sum, environmental crises caused by the contradictory relationship between capital and oceanic 'nature' are key to the heterogenous assemblage of market making in aquatic food systems. Before these three empirical chapters, however, I first turn to outlining my methodological approach. In the following chapter, I also consider the complexities and politics of my fieldwork.

4. Chapter 4: "You will go to your hometown to make money and I am following you in the sun": Reflections on being in the 'field', methodology, and knowledge production

4.1. Introduction

Methods and methodology are often confused (Harvey *et al*., 2023). Methods can be understood as the research tools and techniques used to obtain data (I.e., participant observation). Methodology on the other hand, "refers to the overall approach to research, includes a justification for this approach, and links to research philosophy" (Harvey *et al*., 2023, p. 94). As such, the beginning of this chapter will firstly discuss the research philosophy which underpins this PhD thesis. This research philosophy is critical realism, and combined with a methodology based in grounded theory, these philosophical and methodological positions have buttressed (or 'underlaboured' (Bhaskar, 2014)) the meta-research objective of the PhD, which were to identify and analyse the **environmental, economic, and social power dynamics** that make up aquatic food systems in Ghana.

However, while critical realism offers a rich way of understanding empirical performative contingencies whilst also paying heed to structural mechanisms, it is still not a social theory, in so far as "it can only provide a general idea of the relations that it is concerned with" (Belfrage & Hauf, 2017, p. 255). After discussing critical realism and grounded theory in more depth, this chapter will then highlight how critical grounded theory has informed the approaches taken throughout this thesis (Oliver, 2012; Sum & Jessop, 2013; Belfrage & Hauf, 2017). After this, the methods employed to obtain empirical data, will be discussed in greater detail. Towards the end of the chapter, based in reflexive feminist literature (Haraway, 1988; Sundberg, 2003; Berry *et al*., 2017), I will reflect upon my positionality, and the broader underlying ethical questions that were interwoven throughout the research process, and in particular, fieldwork in Ghana. I will then explore how knowledge was produced (and still is being produced) after the field.

4.2. Research questions

This study used an ethnographic, qualitative approach to explore the social, economic, and environmental dynamics of aquatic food systems in the Ghanaian post-harvest fishery. The main

premise of this PhD was to understand fish as a vital part of food systems (rather than as resource or commodity) and to explore which environmental, social, and economic dynamics shaped Ghanaian aquatic food systems. As such, the post-harvest sector was my focus, due to the sector's intrinsic role in the processing, marketing, and trading of fish. During desk-based research, a series of 'proto-theories' were developed based on literature which described the ocean as a new frontier for capitalist economic development in the blue economy (Barbesgaard, 2018; Childs & Hicks, 2019; Cohen *et al*., 2019), literature which described a severe reduction in small-scale fish landings in Ghana (Nolan, 2019; Asiedu *et al*., 2021; EJF, 2022), and literature detailing how those who work in the Ghanaian post-harvest sector may be responding to such challenges (Smith, 2022).

Due to the marginalisation of small-scale fisherfolk in blue economic initiatives (Cohen *et al*., 2019), and due to the pre-condition of the PhD that fish had to be understood as food; food sovereignty became a framing through which to understand aquatic food systems in Ghana. This was primarily because of the political positionality of the food sovereignty movement, which argues that hunger and malnutrition is inherently a political problem. It also allowed for movement away from a focus on supply and consumption of fish (as is more common in food security literature), to understanding the Ghanaian aquatic food supply chain in a more holistic manner (i.e., from production to consumption). A loose theory that collective organising by women fish processors and traders exists as a response to industrial overexploitation of Ghanaian fisheries was firstly explored during the pilot study in January 2022. In line with critical grounded methodology, theories that centred around a lack of fish and the existence of collective organisation were considered throughout the fieldwork process (Belfrage & Hauf, 2017). However, retroduction also includes inductive thought, where theories are in constant dialogue with emergent empirical data (Sum & Jessop, 2013). Throughout fieldwork, research was conducted in multiple coastal locations due to the exploratory manner of a broad set of themes regarding the organisation of post-harvest associations (Smith, 2022), their connection to social, environmental, and economic processes inherent within aquatic food systems, and the impact of capitalist overexploitation and the industrial trawling sector in Ghanaian waters (Nolan, 2019; Teye *et al*., 2020).

Based on my empirical, qualitative approach to data collection, my research aim focused on identifying and analysing the **social, economic, and environmental dynamics** of Ghanaian

aquatic food systems. From this research aim, I then sought to answer these further research questions, which were formulated out of a mix of deductive theoretical reasoning and inductive empirical data analysis:

Research questions

1) How does industrial fishing in Ghana affect small-scale fisheries?
2) What is the relationship between the aquatic food market(s) and industrial fishing in Ghana?
3) Can a critical understanding of the market be advanced in analyses of aquatic food systems, and how can this relate to debates regarding food sovereignty in fisheries?

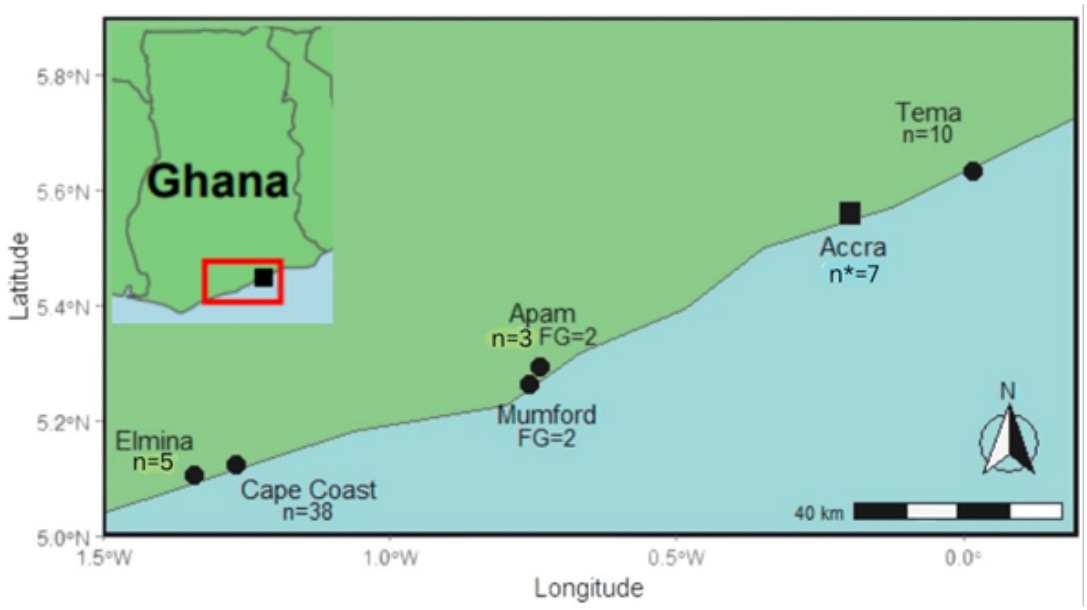


Figure 4-1 A map of the six sites where interviews and focus groups were conducte

4.3. Research philosophy

4.3.1. Critical realism

How does a researcher deal with central issues such as truth and evidence in methodology and theory? (Oliver, 2012). Answers to this question lie in different research epistemologies and ontologies, which can span from positivist, constructivist to structuralist paradigms, to name a few.

One way in which this thesis answers this question is through taking inspiration from the theoretical and empirical assertions which underpin critical realist philosophy (Bhaskar, 2014). Critical realism has been described as a "significant meta-theory for the social sciences" (Hoddy, 2019, p.111). Meta-theory generally includes questions of ontology, epistemology, methodology, and the philosophy of knowledge production. Critical realism emerged in the 1970s as an alternative to social constructivist and positivist lines of thought in the social sciences (Bhaskar, 2014; Hoddy, 2019). While the 'battle' between the viability of qualitative research over quantitative seems to have lessened due to a recognition that both are valuable (Arnd-Carddigan & Pozzuto, 2006), there still appears to be a disconnect between "the value of various epistemological positions" within qualitative and quantitative research (Oliver, 2012, p. 372). Critical realism has therefore been touted as a philosophy which can bridge such epistemological divides between constructivism and positivism (Oliver, 2012).

One of the core tenets of critical realism is that it emphasises the reality of social structures and biophysical processes; while also granting that empirical, historical contingencies, and differential experiences and understandings of social reality exist (Christiansen, 2023). As such, critical realism "marries the positivist's search for evidence of a reality external to human consciousness with the insistence that all meaning to be made of that reality is socially constructed" (Oliver, 2012, p. 372). What this means is that critical realists are "profoundly interested in the social construction of meaning through discourse or semiosis" (Belfrage & Hauf, 2017, p. 254). Critical realism looks at how meaning is made, and which discourse or meaning is rendered actualized and performed (or not) due to underlying structures. Critical realism can therefore be understood as a 'third-way' between positivist research and much postmodern or poststructuralist thought, rejecting the disciplinary boundaries which often culminate in binaries such as agency/structure or nature/culture (Fairclough, 2005), while still acknowledging that structural tendencies still exist in social reality.

Critical realists also tend to distinguish among real mechanisms, actual events, and empirical observations (Bhaskar *et al*., 2010; Sum & Jessop, 2013). 'Real' structures or mechanisms are differentiated from 'actual' things or events, as well as 'empirical' observations or experiences (Belfrage & Hauf, 2017). In the context of this doctoral research, this means that at the 'empirical'

level, observations and experiences throughout the PhD were gathered through ethnographic methods such as semi-structured interviews, focus groups, and participant observation, which form the empirical data presented throughout the following three empirical chapters. However, the empirical level of this doctoral research cannot represent the entirety of the 'actual' multitudes of complexities, contradictions, and contingencies that are imbued within Ghanaian aquatic food systems. The level of the 'real' then looks below these complexities to understand the structural 'generative mechanisms' or 'causal powers' which shape and sustain inequities (i.e., industrial overfishing and capitalist crises tendencies) in Ghanaian aquatic food systems.

Critical realism's basic ontology, or belief, therefore, is that there are deeper underlying structures in the world that are not always apparent. It "seeks to uncover 'generative mechanisms', often veiled from perception" which are "capable of causing observable phenomena" (Belfrage & Hauf, 2017, p. 254). To understand this 'real world', critical realists rely on a method called retroduction (Sum & Jessop, 2013). This means that in order to identify generative mechanisms, critical realists ask what must be true for events to be possible. Or, in the context of this research, what must be true for inequity to exist in Ghanaian aquatic food systems? In this research, this generative mechanism is namely the crises of industrial fisheries, and the effects of industrial overfishing on the ocean environment and on Ghanaian small-scale fisheries. Thus, "from observable phenomena, we go back to possible explanations" (Belfrage & Hauf, 2017, p. 254), to go deeper than a description of a phenomena (or on pre-existing theories) to what produces it (or in this case what produces the aquatic food market). This means that the general trajectory for critical realism methodologically speaking is that it involves "a continuing spiral movement from knowledge of manifest (empirical) phenomena to knowledge of the underlying structures and causal mechanisms that generate them" (Sum & Jessop, 2013, p. 9).

4.3.2. Critical Grounded Theory

Critical realism has also been described as a philosophy in search of a method (Yeung, 1997). Some have suggested that a method appropriate for critical realism is grounded theory (Oliver, 2012; Belfrage & Hauf, 2017). Grounded theory is one of the most widely used methodologies in social sciences (Oliver, 2012). It is a methodology which enables theoretical concepts to be produced through drawing from systematically collected data (Glaser, 1999). Grounded theory is

built around an inductive logic, which suggests that the researcher should not go into the field with any preconceived theories or hypotheses (whilst acknowledging that this may not always be possible) (Noble & Mitchell, 2016). As such, it is an inductive research process, which relies on subjecting data to close scrutiny through analytic coding, while also emphasising concurrent data collection and analysis in order to construct theories (Charmaz, 2006). This approach emerged as a critique of quantitative social sciences through legitimising the power of conducting inductive qualitative research (Charmaz, 2006). Critics of grounded theory however suggest that its emphasis on induction and paradigmatic neutrality means that it still has positivist residuals derived from its earlier writings (Charmaz, 2006).

However, since grounded theory was first developed in the 1960s (Glaser & Strauss, 1967), it has moved away from its assertion that pure induction is "the only road to scientific knowledge" (Belfrage & Hauf, 2017, p. 258). In developing grounded theory away from its claims to neutrality, some have suggested that grounded theory can be used "without endorsing mid-century assumptions of an objective external reality, a passive, neutral observer, or a detached, narrow empiricism" (Charmaz, 2006, p. 469). This is through primarily taking a constructivist view of knowledge production, whereby it is understood that the researcher is implicated within multiple, processual, and constructed social realities, which allows for better researcher reflexivity (Charmaz, 2006). Charmaz then distinguishes between a so-called 'constructivist' grounded theory as contrasted to 'objectivist' grounded theory, which embodies the more positivist aspects of older grounded theory literature (2006). However, some have suggested that a third epistemological position is missing in this assertion and develop a way in which grounded theory can move between the "naïve realism of Glaser and the radical constructivism of these recent contributions" (Belfrage & Hauf, 2017, p. 259). Here it is suggested that a critical grounded theory, based in critical realism can marry positivist-tinged, inductive methods with more generative takes in research and knowledge production (Belfrage & Hauf, 2017). In essence, it can acknowledge that knowledge is constructed and performed, while not belying the fact that structural tendencies exist and can shape such knowledge and its performative effects. Critical grounded theory is therefore a way in which to operationalize theories which are "underpinned by critical realism" (Belfrage & Hauf, 2017, p. 258), and also draws on analytical tools originally developed in grounded theory (Glaser, 1992). The following subsections will detail how this thesis has broadly followed a critical grounded

theory approach in the development of its research objectives, ethical encounters, fieldwork, and research outcomes.

4.3.3. Reflexivity in defining the 'research problem': complexities and contradictions in industrial fishing relations and the effects on small-scale fisheries

Retroduction is a key method in critical grounded theory (CGT). As opposed to more traditional assertions in grounded theory (Glaser, 1999), as well as more positivistic scientific paradigms, in CGT, the researcher recognises themselves "not as a disinterested observer but as an active member of society ridden with social antagonisms and relations of exploitation, domination and exclusion" (Belfrage & Hauf, 2017, p. 259). As such, Belfrage & Hauf state that the research problem in CGT is often "driven by moral and/or social concerns in an ambition to produce critical knowledge to enable social emancipation" (2017, p. 259). This section briefly reflects on how the research objectives, or the 'problem' which this PhD set out to tackle, was developed.

In defining a 'case' to conceptualize and enact research, Lund notes that "our choice of concepts – just as our choice of historical and geographical contextualization – partly defines a case" where "the choice of an appropriate lens falls to the researcher" (2014, p. 228). Consequently, in reflecting on how the case or the research problem was defined in this PhD, it is important to note that the development of this PhD was firstly borne out of a European Research Council starting grant, which was won by my primary supervisor, Christina Hicks. This starting grant, and the advert for the PhD outlined the main problems and objectives which should be targeted by the PhD studentship. The research problem here was based on the premise that inequity exists in access to nutritious types of fish in lower-income countries. The task of the PhD was therefore broadly to 'uncover' the power dynamics and social factors that shape access to nutritious fish, to highlight the hidden hunger caused by malnutrition and how forgotten food (fish) may alleviate such malnutrition. As such, before I embarked on this PhD, I was already implicated in a web of moral, scientific, and theoretical assumptions and research, which highlighted the ways in which I could tackle the broader question of nutritional and social inequities in aquatic food systems. Previous research with small-scale fishers in Tanzania had also allowed me to gain a broader understanding and experience of some of the inequities and injustices that small-scale fishers face, and as such,

my assumptions, politics, and previous experiences have aligned with the premise of this PhD from the very start.

Reflexivity regarding how the 'problem' came to be defined in this doctoral research arguably implies asking questions about the "ontological, epistemological and axiological components of the self" (Berger, 2015, p. 220). This is because the use of 'the self' is gaining increased prominence in research methods, where researchers seek to "better understand the role of the self in the creation of knowledge" and to "take responsibility for one's own situatedness within the research and the effect that it may have on the setting and the people being studied" (Berger, 2015, p. 220).

In the initial stages of CGT, Belfrage & Hauf suggest that "there is no claim to neutrality of choice of theory here as the researcher inclines towards theories she is already familiar with or finds convincing" (2017, p. 259). This recognition in CGT that the researcher is not an impartial and distant observer has also enabled a greater level of reflexivity regarding my own role in defining the research problem and production of knowledge throughout this PhD. I came to this PhD from a societal, economic, and cultural context which has shaped my own research interests, positions, and thoughts. I grew up in Cardiff, South Wales (Caerdydd, De Cymru), which is a city that was profoundly shaped by the extractive legacies of the coal industry. I grew up on a housing estate that was built upon the site of an old ironworks, where coal was ferried down from the South Wales coal mining valleys through the adjacent river Taff and Glamorganshire canal. In the distance, the Gwaelod-y-Garth Mountain loomed over Cardiff, known as the hollow mountain because of intensive mining, the site of a deadly colliery disaster, and in my adult life, the site of a large quarry. I grew up surrounded by a large volume of extractive legacies, ranging from disused factories and railway lines, to high levels of industrial river pollution, and to noticing that, despite the rapid expansion and extent of the coal industry in South Wales, the areas which were home to the coal pits in South Wales were contrastingly some of the poorest in Wales, and indeed the UK (Crew, 2020).

As such, at the beginning stage of the PhD, I was drawn to research which discussed the social and environmental inequities caused by industrial overfishing in Ghanaian waters (EJF, 2022), as well

as a broader interest in whether collective action within the post-harvest sector specifically existed, which I surmised could potentially exist as a response to colonial extractive legacies and contemporary low levels of fish stock (Smith, 2022). My interest in how capitalist industry produced inequalities and environmental degradation was therefore shaped by witnessing the post-industrial landscape and legacies that still shape South Wales today. These historical legacies of extractive capitalism in South Wales, and my lived experiences on the 'Celtic fringe' (Hechter, 1998), have shaped my broad interest in how capitalism shapes both social relations, produces inequalities, and brutalises the natural environment for the benefit of the few, at the cost of the many. These experiences have shaped the social concerns and questions woven throughout this PhD, which the next part of this chapter will now explore.

4.4. Research participants

A qualitative, ethnographic approach to research was employed during fieldwork. Here, 63 semi-structured interviews and 4 focus groups were conducted in 5 coastal communities between October and December 2022, with the support of two research assistants. A three-week exploratory pilot study was conducted in January 2022 in collaboration with students at the University of Ghana. The details of the locations, number of interviews and focus groups conducted, as well as who participated in this research can be seen in tables 4.1 and 4.2 below (as well visualised in figure 4.1 above). Interviews and focus groups were recorded where permission was given. All interviewees were given informed consent. Interviews were conducted in Asante Twi, Fante, or English and then translated into English (if necessary) in real time or translated through transcription at a later date. Interview length lasted between 20 minutes to three hours.

Location	**Focus Group**	**Semi-structured Interview**
Tema	0	10
Apam	2	3
Mumford	2	0
Cape Coast	0	38

Elmina	0	5
Accra*	0	7

Table 4-1 An overview of the locations and the number of focus groups and semi-structured interviews conducted during fieldwork.

With whom?	**How many focus groups?**	**How many interviews?**
Women fish processors and/ or traders	4	33
Small-scale fishermen	0	4
Cold store employees	0	3
Ex-trawler fishermen	0	1
Trawler license owner	0	1
Fish mothers	0	9
Governmental/NGO organisations	0	7
Financial institutions	0	5

Table 4-2 An overview of the number of participants interviewed and their characteristics.

Participants were recruited primarily through snowball methodological sampling, which means that I used one contact to help recruit another contact, who in turn put me in touch with someone else (Browne, 2005). The study was highly dependent on the assistance of the project's research assistants (RA). Governmental or non-governmental employees were reached out to via email, telephone, or in-person prior to the interview with a description of the aims of the project and our contact details. In Cape Coast, in line with customary tradition, permission was sought from the Chief Fisherman to speak to fish processors and traders who worked on the beach or in the local market. After this permission was attained, we were able to freely speak to the fish processors and traders, many of whom were one of the RA's neighbours or family. This was also the same in

Elmina, where we sought the permission of the Chief Fisherman to be able to conduct research in the area, where I was also able to speak to a number of one RA's neighbours who worked in Elmina. In Apam and Mumford, another RA had previously worked with a well-respected governmental district officer who connected us with the heads of two fish processing and trading associations in Apam, and two in Mumford, as well as individual fish processors and traders who worked in the area. In Tema, we were given permission to conduct research by a Fish Queen, who then connected us to other fish processors and traders in the area. Due to language issues, we were not able to interview fish processors and traders in the Ewe area of Tema, who are a people who originate from the east of the country, in the Volta area.

4.5. Ethics and informed consent

Ethics approval for this research was granted in April 2022 by the Faculty of Science and Technology at Lancaster University, which formed part of a larger ethics submission as part of the Fairfish project. One of the main ethical tenets of my research is that, in so far as it is humanely possible "no participants of the study will ever be harmed by their participation or by the publication of the results of the study" (Fife, 2005, p. 12). Before the field, during, and after, I have always endeavoured to enact this ethical tenet throughout. This sub-section will give an overview of the ethical considerations taken throughout the doctoral research process.

Fife describes how one of the key ethical issues in anthropological fieldwork is that of informed consent, which broadly means that each participant should have an understanding of the goals and implications of the study they are participating in (2005). A standard practice to ensure informed consent is to share with participants a sheet of paper (a 'participant information sheet') outlining the rationale behind the project, what is expected of participants, how data will be handled and used, etc., accompanied by a consent form they sign to confirm they are willing to freely participate and have received thorough information (Fife, 2005). However, for this research, this was not possible as many of the fish processors and traders I spoke to were illiterate. Aware of the legacy of colonialism, in which those asking for signatures were often acting on behalf of governing authorities (Fife, 2005), I deemed that ensuring signatures and providing forms to participants would not also be a straightforward way in which to elicit trust. This lack of trust was also evident in the 'field' where before interviews commenced, many people would ask if what they said would

be relayed to the government. Therefore, I ensured that fully informed consent was obtained verbally. This is where I introduced myself and the RAs, the reason the research was being carried out, and also what we hope to gain from the project (see appendix D for the statement I prepared). This was also a similar statement for NGOs/government officials whom I contacted by email or by telephone[13], where I described wishing to understand the relationship between women's post-harvest associations and food security, and also gained verbal consent. I also made clear that there was a withdrawal policy for all participants and that participation was entirely voluntary (Dowling, *et al.,* 2016). I assured anonymity to all participants. Throughout interviews, I informed participants that they did not have to answer all questions asked, and that they could withdraw at any time (Wiles, 2012). Data was managed according to my ethics application and Faculty of Science and Technology (FST)guidelines. Here, I ensured that interview audio files were uploaded to a secure Lancaster University OneDrive server, and then transcribed, where access was only given to one RA, myself, and my supervisors. Files will be stored in a secure location for a maximum of ten years, according to university policy (see appendix C for more details concerning ethics).

4.6. Qualitative & Ethnographic methods

I chose qualitative methods specifically in this research to uncover women fish processors and traders' lived (and complex) experiences of reductions in fish landings and the impact on their livelihoods, which cannot be uncovered in as much depth with quantitative research methods (Winchester & Rofe, 2016). While reliability and validity are often the concerns of quantitative research, it is also argued that reliability and validity should be the concerns of qualitative researchers to ensure that their research is transparent and credible (Flewitt, 2006). To ensure credibility and reliability in my research, I chose to use different qualitative methods to triangulate my data into coherent themes. Triangulating my data has an advantage to overcome each method's individual limitations (Shenton, 2004). As such, as part of ethnographic research, I also sought to triangulate my data through semi-structured interviews, focus groups, participant

[13] And if possible (via email), I sent participants the Participant Information Sheet in advance. However, some interviews with government agencies or NGOs were organised over the phone. If this occurred, I would send the participants the Participant Information Sheet after the interview and gained verbal consent beforehand.

observation and field notes to ensure that my research process was as transparent and credible as possible.

The goal of ethnographic research is to "formulate a pattern of analysis that makes reasonable sense out of human actions within the given context of a specific time and place" (Fife, 2005, p.1). Critical grounded theory allows for both deductive and inductive moments, which help to firstly guide the researcher into understanding observations and conversations with participants, while also allowing for an 'immersion' in the 'field', while relating empirical data to theory. As such, while I theorised that there were social implications due to lack of fish, I still employed critical grounded methodology through ethnography to induct if empirical data correlated to such a theory. As such, the empirical data throughout the three empirical chapters in this thesis are related to this initial 'proto theory' but have also been strongly informed the evidence obtained through ethnographic qualitative data collection in the field. The following sections will details the varying qualitative methods employed throughout fieldwork.

4.6.1. Semi-structured interviews & focus groups

Interviews and focus groups are probably the most common qualitative research methods in the social sciences (Dowling *et al.*, 2016). These qualitative methods allow for an exploration of complex questions where researchers observe, talk with, and listen carefully to research participants (Rubin & Rubin, 2005). Qualitative interviews are situated, contextual, and unique to each person being interviewed, and are often categorised as structured, semi-structured, informal, and retrospective interviews, respectively. The primary research method used throughout my time in Ghana was semi-structured or open-ended interviews, although in fieldwork varying types of interviews are often blended (Fetterman, 2020). This is as it is common for the researcher to match "their questions to what each interviewee knows and is willing to share" (Rubin & Rubin, 2005, p. 13). Qualitative interviews can thus be understood as directed conversations (Rubin & Rubin, 2005). Semi-structured interviews are informed by a set of predetermined questions but also allow for interviews to "unfold in a conversational manner offering participants the chance to explore issues they feel are important" (Longhurst, 2009, p. 143). Semi-structured interviews allowed for me to follow a critical grounded theoretical framework in the field, where I broadly sought to test out my 'proto-theories' that there was a reduction in fish landings and that this had adversely impacted small-scale fish processors and traders.

Focus groups are also a popular method of applied social research (Agar & MacDonald, 1995). Throughout fieldwork I conducted four focus groups with one RA's assistance. This was with members of women's fish processing and trading associations in Apam and Mumford. Focus groups allowed for a complementary research method alongside semi-structured interviews, where I also sought to understand how associations worked in terms of leadership and organisation.

4.6.2. Participant Observation

Described as one of the most basic research methods in ethnography (Fife, 2005), participant observation can be understood as combining "participation in the lives of the people under study with maintenance of a professional distance that allows adequate observation and recording of data" (Fetterman, 2020, p. 48). Participant observation in the field allowed me to gain a greater understanding of everyday lives in Cape Coast. Here, I asked a fish processor if it would be possible if an RA and I could follow her from when she bought fish to when she processed and sold it. This occurred for an entire day, where the RA and I were also welcomed into the fish processor's home. Participant observation allowed for a keener awareness of the difficulties that are experienced by fish processors due to a lack of fish, and the consequent social implications on the post-harvest sector.

4.6.3. Field notes

One way in which to practise reflexivity with regards to the relationship between the researcher and the field is through writing field notes (Eriksson *et al*., 2012). Reflexivity can be understood as a way in relate oneself to making sense of the world (Eriksson *et al*., 2012). Throughout fieldwork in Ghana, I wrote extensive fieldnotes at the end of most days (however some days I was too tired). Fieldnotes were split into observational data, where I recorded what I had observed or understood from the day. I also wrote a fieldwork diary, and other notes that I deemed relevant. I also wrote notes when interviewing, in cases where participants did not want to be recorded, as well as writing general descriptions about what happened around the interviews or days spent conducting participant observation. As an example, an excerpt from my observational field notes written at the end of the day allowed for me to understand later on in the research process how the

lack of fish on the beach in Cape Coast shaped gendered and traditional dynamics in the small-scale fishery.

"*I sat on a disused canoe boat, while people crowded around the recently landed fish. The women were fighting over the buckets of fish, throwing different pieces of cloth over the fish to claim ownership. I was not noticed. In fact, it's the first time that I have felt completely invisible here. One of the women who was fighting over the fish bowls began fighting with one of the fishermen. He slapped her hard across the face and she fell to the floor. Suddenly, people were pulling her up, and the men pulled the fisherman to the side. The RA later told me that he was her husband."* (Cape Coast, November 2022).

This excerpt from my notes correlated to a broad theme which was simultaneously uncovered in data analysis as well as deducted from existing theories and research, which is that of a lack of fish or business troubles is detrimentally affecting small-scale fisherfolk's livelihoods. Here, the captain of the boat had promised the fish caught to another customer, while his wife had also promised the fish caught to another of her customers. There simply wasn't enough fish for both customers, which led to the above-described fight between husband and wife.

4.6.4. Coding & research outcomes

In critical grounded theory, the result of research is not "objective grounded theory discovered in data, but a critical grounded theory reconstructed through a retroductive research process" (Belfrage & Hauf, 2017, p. 260). Belfrage & Hauf suggest that for critical grounded realists, this means that the inductive moment(s) in the field combined with deductive theoretical reasoning enables a "deepening or broadening of substantive knowledge; establishment of new conceptual connections; refinement or reconstruction of theory; and more profound challenges of existing theories." (2017, p. 260). They suggest that this is improves a "critical realist's ability to explain how and why social relations of capitalism are being reproduced, how they become reified or naturalized and thus expelled from the realm of what appears to be discursively negotiable" (2017, p. 260).

After interviews were translated and/or transcribed, they were uploaded to NVivo 14 for thematic analysis through coding. Here I followed Braun & Clarke's (2021) six steps to thematic analysis in qualitative data. The first phase to thematic analysis is through transcription, and building up an idea of overall impressions, ideas, and issues that appear throughout the interviews (Braun & Clarke, 2021). I began transcription during fieldwork, often with the aid of an RA in Cape Coast, who was also able to explain in better detail certain mistranslations that occurred at the time of the interview. This allowed for me to refine and test out the 'proto-theories' (as suggested in critical grounded theory) that collective action in the post-harvest sector existed, and also how this action related to fish as a part of food systems.

Braun & Clarke (2021) suggest that the next step in coding is to identify patterns within the data. To do so I read through the interviews and coded the data using a mix of inductive approaches (where interview transcripts were read line-by-line and then coded). I then coded for implicit meanings which could inform my theoretical stance or framework ('researcher-derived' codes) (Braun & Clarke, 2021). The next three phases according to Braun & Clarke (2021) centre around organising the codes into themes. I reviewed the codes to make sure that they were coherent, and then re-read the entire interview transcripts along with other similar codes in other interviews to make a master theme. This helped me to gain an overall narrative regarding how, or if, the codes and the themes presented in relation to my overarching research aim and my research questions. The themes from this dataset thus form the basis for the next three empirical chapters.

As such, throughout the empirical chapters in this thesis, quotes, or vignettes are used which are coded in NVivo as significant for an inductive 'master' theme that became apparent through both inductive coding for themes and ideas, and 'researcher-derived' deductive coding which could inform my pre-existing theoretical ideas and framework. Braun & Clarke (2023) note however that the common use of thematic analysis by researchers often leads to a conflation of summary topics as representative of themes. For example, a summary theme in my research is that there is a reduction in fish landings. However, what a reduction in fish landings meant for participants was coded in order to make an overarching theme, which was a dependency on imports or trawlers. Understanding the meanings around what a reduction in fish landings means for Ghanaian small-scale fisherfolk could not have been thought of prior to coding and is as such representative of a

theme instead of a summary topic (Braun & Clarke, 2023). Overarching themes were respectively: 1) Problems with associations or NGOs 2) Positionality 3) Market Making 4) Lack of fish or business troubles 5) Importance of fish as food 6) Gender & class in fishing culture 7) Finance 8) Dependency on imports and trawlers 9) Changes over time (see figure 4.2 for a more detailed overview of codes).

Codes

Name	Files	References
Changes over time	15	28
Dependency on imports and trawlers	24	98
Difference between trawler & import	3	6
Difference between trawler cold store & artisanal	4	9
Illegal activities & corruption	7	20
Price rises at beach (artisanal)	5	8
Price rises from imports or trawlers	5	5
Trawler dependency on fish mothers	4	8
Finance	21	34
Reasons for no susu	5	5
Lack of fish and or fish price fluctuation	4	5
Lack of trust	1	5
Money disappearing	10	10
Reasons for susu	17	18
susu	40	52
Bank susu	4	4
Church loan & susu	1	1
Group susu	10	12
NGOs and susu	3	5
Village Savings and Loans	8	11
Seasonality	5	8
Gender & class in fishing culture	17	31
Importance of fish as food	18	26
Lack of fish or business troubles	33	60
premix	13	18
Market Making	4	9

Food safety & Hygiene	7	13
Modernity & hygiene	2	2
Standards	4	11
Territorial market	9	11
Positionality	7	13
Problems with associations or NGOs	4	8

Figure 4-2 A table of all codes derived from thematic analysis in NVivo.

4.7. Power, emotions, and a decolonial research process in the 'field'?

Feminist debates regarding the politics of fieldwork and embodied research have received longstanding attention in geography and other social science disciplines (Katz, 1994; Nast, 1994; Sundberg, 2003). Feminist geographers in particular have paid attention to issues of power and positionality in the field (Katz, 1994), heroic and masculinist tropes that permeate expectations in academic fieldwork (Sundberg, 2003), as well as the embodied dimensions of fieldwork, including the role of emotions and the risk of sexual violence (Ross, 2015). In this section, I take the field as a fluid, political, and spatial-analytical category to briefly highlight and focus on the politics of fieldwork. This is as the "conduct of fieldwork is always contextual, relational, embodied, and politicized" (Sultana, 2007, p. 374). This type of framing allows for an interrogation into the type of knowledge that is produced in the field, and the processes which shape how knowledge is 'known' and produced (Bruun & Guasco, 2023), especially at the axes of differing scales of differences and inequalities (Sultana, 2007). I foreground the researcher to interrogate the structural hierarchies in which ethnographic fieldwork is formed, and do not wish to efface questions of race, gender and class in the research process which can assert a neutral stance synonymous with colonial, objective, and extractive forms of knowledge production (Berry *et al*., 2017). To foreground the structural hierarchies and power dynamics in which I was embedded and perpetuated, I also focus here on what is unspoken in research publications and journals; a spectre that haunts research publications (Douglas-Jones *et al*., 2020); namely difficulty and trouble in fieldwork.

Within geography, and indeed many other social and natural science research, fieldwork is often understood as the key research method, and for many, as a rite of passage within doctoral

programmes (Bruun & Guasco, 2023). In debating whether to discuss the difficulty and trouble in and of fieldwork in this thesis, I decided to take the position that silence surrounding my positionality and situatedness regarding emotions, trauma, and violence in fieldwork can contribute to an anti-politics of the 'field', and indeed to the power dynamics inherent to my own research. Arguably, silence regarding the politics of the field can only serve to prop up hegemonic power structures through upholding the image of the objective, rational researcher and the "splitting of subject and object" (Haraway, 1988, p. 583) in fieldwork. My embodied self shaped this research and the methodology in innumerable ways, and to ignore how this interplayed with my empirical data is arguably a large omission. I am aware that in academia, "we rarely talk about the moments when we either choose or feel compelled to keep silent." (Ahonen *et al*., 2020, p.450), yet it is arguably important for ensuring ethical research to be reflexive and attentive to emotions and power relations in the field (Sultana, 2007). This is to ensure accountability, as well as to challenge the structures and values of the academy (Nagar, 2002), and to highlight the complexities of fieldwork for early-career researchers (Kocsis, 2024).

For scholars who highlight the inextricable colonial nature of the act of research, which ultimately means classification, extraction, and violence (Tuhiwai Smith, 2008), it behoves the politically aware critical scholar to engage with an uncomfortable and ultimately contradictory position of conducting research in an institution which ultimately reproduces the classed, gendered, and racialised violence the politically aware researcher wishes to critique. As such, it is imperative that the researcher addresses the limitations of their research, their scope of power, to continue to engage in the struggles of the people "researched", and for the researcher to remain deeply and critically self-reflective (Tuhawai Smith, 2008).

As a part of "decolonising" my PhD research (but ultimately acknowledging that this was not possible), I therefore seek to address sticky ethical questions regarding how research and fieldwork has been criticised for "perpetuating neocolonial representations, having Western biases, and purporting to speak 'for' women" (Sultana, 2007, p. 375). While an overemphasis on researcher reflexivity and positionality has also been accused of being overly 'naval gazing' (Sultana, 2007), I wish to ground this research in a deeper political reflexivity, one that acknowledges that "fieldwork can be productive and liberating, as long as researchers keep in mind the critiques and

undertake research that is more politically engaged, materially grounded, and institutionally sensitive" (Nagar 2002 cited in Sultana, 2007, p. 375).

In the following sections, I therefore stand on the shoulders of the large amounts of feminist, postcolonial, decolonial, and reflexive literature regarding fieldwork and embodied research, to critically detail how the politics and coloniality of the field has intrinsically shaped the data produced in the empirical chapters throughout the rest of the thesis.

Figure 4-3 A large pan of anchovies, fish processors buying fish, and Cape Coast castle (formerly a key site for the Transatlantic slave trade by the Dutch and then later the British) in the background

4.7.1. Whiteness, class, Christianity and coloniality in the field

As a Welsh white woman in Ghana, I became keenly aware of my race and the numerous ways it shaped this research. Here, I understand whiteness not as a "fixed, biologically determined, phenotype" but as "a structural advantage, standpoint, and set of historical and cultural practices" (Faria & Mollett, 2016, p. 81). As Sultana states (2007), inequalities and differences in fieldwork are present at multiple scales, and my whiteness in this research interacted with and propped up historic and present-day hegemonic structures which perpetuate racism, as well as also intersecting with my perceived class, gender, and sexuality on a microscale in fieldwork. I firstly turn to whiteness on a macroscale and how this fieldwork is intrinsically bound up in colonial histories and legacies of white supremacy.

Distrust by participants of people associated with colonizing pasts or presents significantly shapes the legitimacy, access, and authority of the researcher (Faria & Mollett, 2016). Conducting ethnographic research in the global South by global North researchers also relies on and perpetuates a number of unequal power geographies (Hirsch, 2020). Critical realism asserts that there are multiple social realities which are imbued with multiple historical contingencies, with key structural tendencies to such realities (Sum & Jessop, 2013). As such, I firstly turn to a brief history of coastal Ghana, and in particular Cape Coast, where the bulk of my research was carried out, to highlight the structural nature of racialised exploitation within capitalism, while also acknowledging that race is understood and interacted with through multiple contingencies and ways in social reality.

Cape Coast is a small city in the Central region of Ghana, which is widely known for its role in the transatlantic slave trade. Cape Coast castle was initially built by Swedish colonists in 1653 but acquired by the Dutch and then the British in 1663 (Boateng *et al*., 2018). The castle was central to British involvement in the transatlantic slave trade and remains a stark reminder to the horrific and brutal history suffered by the West African peoples. There is an overlap between dominant forms of power and ethnographic knowledge (Sultana, 2007). Research, and the production of knowledge, is inherently political, imbued with a number of social processes that reflect deeper histories of exclusion, "othering" and inequity. Conducting PhD research in Ghana as a white, Welsh woman based at a British university, remains inherently connected to colonial legacies of

British anthropological and geographical research, no matter how much I may wish to separate myself from this (Nhemachena *et al*., 2016). I therefore respond to the call for reflexivity that is always aware of "geography's skeletons of empire and how we, as western geographers, might embody colonial histories in our travel South" (Griffiths, 2016, p.5).

In speaking about raising class consciousness for young black men and women, Hall *et al* write that "it is in the modality of race that those whom the structures systematically exploit, exclude and subordinate discover themselves as an exploited, excluded and subordinated class" (Hall *et al*., 2017, p. 340-341). Compounded with the influx of development aid from Western agencies in the 1980s (Walker, 2001), being white led to certain expectations about my role as a researcher in terms of my financial and class position, as well as my influence to affect change in fisheries. For example, in an interview with a fish processor in Tema, we were told, "*You university people, when you talk they [the government] listen to you, but us no*". Upon leaving the interview, the fish processor also told us, "*When you go tell the NGOs to bring us money. If you want to talk to me again, bring more money next time."* (Interview 11).

Being white also facilitated easier access to NGOs and government agencies. Here, due to the contemporary presence of development agencies, it was expected that I had come to fulfil the same role as those in development. As an example, I was able to sit in on a meeting between a Norwegian development agency and a Ghanaian government worker upon entering a government building to enquire about an interview, without them even checking who I was. This was also compounded by the fact that I had made associations with a British NGO in Ghana (The Environmental Justice Foundation) (EJF), prior to arrival. However, even outside of connections made via EJF, I could not escape the perception that I had come to Ghana to be a patron to the associations and development agencies I interviewed. In an interview with a local development agency, after clarifying that I could not fund their projects, I was asked to provide connections "*to just two or three people with money so that our project can survive*" (interview 13). The development agency expressed fatigue over researchers without seemingly deriving any benefit from the research, with one RA promising that the name of their agency would be spoken about with the larger development agencies we were interviewing. As such, "the associations of whiteness and privilege sometimes proved frustratingly intractable" (Faria & Mollett, 2016, p. 86). My whiteness was

deeply associated with the contemporary development industry in Ghana and also deeply implicated in the legacy of British colonialism (Faria & Mollett, 2016).

This dynamic also occurred with fish processors and traders. When walking around Cape Coast with one RA, I noticed that I had received some attention by some processors. Eventually, I asked the RA what they were saying, and she replied:

"Hey you! [To research assistant] *Why has this white woman captured you to keep you in the sun to ask you these questions? Why has she captured you under the sun and you are also seriously writing answers for her? Is she paying you? Where are you from?* [RA translates to me] *She is complaining that we are doing this thing, and you will go to your hometown to make money and I am following you in the sun." (*From notes, research on Cape Coast beach, November 2022.)

As previously mentioned, I was fortunate to have a large amount of funding from the ERC grant. I also recognised that what the fish processor at the beach said rang true. A large disparity exists in the return of research investment between the researcher and research participants (LaRocco *et al*., 2019). In line with feminist lines of thought, I believed that research participants should be remunerated when speaking to me (Warnock *et al*., 2022). However, it is important to note that I did not advertise that participants would receive remuneration prior to interview.

In discussing the politics of whiteness in the 'field', Faria & Mollett note that whiteness prompted the emotions of awe and suspicion by participants in their fieldwork research, while scholars of colour prompted disdain (2016). Being white in Ghana facilitated research in many ways through a sense of awe. Firstly, this was due to my association with Christianity and development agencies, and the history and contemporary practice of religious missionaries travelling to Ghana to convert non-believers to Christianity (Boateng *et al*., 2020), in what some have called, one of the most religious (Christian) countries in the world (Beck & Gundersen, 2016). Through my race, my class position was assumed, whereby it was thought that I was in Ghana to provide funding or to provide connections. Secondly, through awareness that research is often extractive, I ensured that every participant knew before commencing interview that I would follow up this study with relevant and considered dissemination of knowledge to relevant stakeholders. However, naturally, I found that

I was still treated with suspicion. Conflation of whiteness, financial connection and privilege, and elite interpersonal connections was inescapable throughout each of my interactions with research participants, and also shaped a unique relationship between myself and the research assistants on the project.

Figure 4-4 A statue of Queen Victoria with fishing nets in the background. Cape Coast

4.7.2. Research assistants & language

There is a need for a greater acknowledgement of the role that research assistants have in research, as it is a topic that has generally been underexplored in social science research methodologies (Stevano & Deane, 2019). This is because "research assistants in the field do much more than complicate our ideas of how to attribute authorship; they fundamentally configure the process and results of data collection, and our notion of 'the field' itself" (Gupta, 2014, p. 397). Anwar & Viqar note the 'triple subjectivity' of ethnographic research with research assistants (2017). This means that throughout the research process in Ghana, my positionality and the interviews carried out were also deeply shaped by both the RA's respective positionalities, and also "the emotions and anxieties of those we work alongside" (Anwar & Viqar, 2017, p. 114). I will highlight in this sub-

section how my own positionality impacted the working relationships with the RAs, before turning to how this also shaped interactions and interviews with research participants.

One RA's previous experience and connections were essential to facilitating introductions to research participants. Her wide-ranging experience in qualitative research ensured that questions were asked in a timely and sensitive manner. Her patience in clarifying concepts and interviews that I did not understand regarding fishing culture was also vital, and I valued her calm and confident manner throughout, and learnt many things from her. Yet, I realised throughout fieldwork I became engaged in dilemmas of "RAs and researchers mediating a postcolonial context of technocratic and academic paradigms" (Anwar & Viqar, 2017, p. 115). This was primarily because of differing research approaches in the field.

One RA had an interest in improving the functioning of the associations we interviewed, due to her previous experience undertaking research for development agencies. As an example,

"4 years ago when I was undertaking research in this community, I saw them building the Ahotor stoves for some women, but later we learnt from one of the conferences in Tema I attended, that some of the women were not using stoves. In your opinion, why was that so? (interview 62)

In writing these descriptions, I wish to highlight how the research assistant's positionality, language skills, and past experiences shaped the outcomes of an interview in multiple ways. This is because the RA's questioning over hygienic practices in fish handling in relation to associations (something that I had not been initially interested in) led to the bulk of data attained for chapter 5, which details market-led development through hygienic standards and quality making.

Ethnographic research is "often multilingual" (Gibb & Danero Iglesias, 2016, p. 134), and the complexities of interpretation in multilingual ethnography has often been side-lined due to a fear that it may undermine the authority of the researcher (Borchgrevink, 2003; Gibb & Danero Iglesias, 2016). Borchgrevink argues that ignorance of the role of interpreters and language issues in anthropology however contributes to a romantic mystique surrounding ethnographic fieldwork (2003). Due to my inability to speak Fante (in Cape Coast) or Asante Twi (in Apam, Mumford,

Tema), I relied on the RAs to interpret what people (who did not speak English) were saying, not only in terms of language, but also to interpret meaning and culture. These interpretations were also mediated in terms of their respective backgrounds. As previously mentioned, one RA had extensive experience working with development agencies, and was familiar with academic expectations. This contrasted with another RA, who was familiar with a fishing community, but not as familiar with qualitative research methods. As such, while one RA's expertise in qualitative research allowed for more complex and in-depth interviewing, the other RA's familiarity with fishing culture allowed for me to better understand complex cultural nuances, which contributes to much of chapter 6, which details susu economics.

As such, there were multiple ways in which both RAs past experiences and positionality shaped the research process, not just my own, and it is beyond the scope of this sub-section to detail the myriad ways in which this occurred. I have sought here to highlight some of the main ways in which the 'triple subjectivity' (Anwar & Viqar, 2017) of the researched, researcher, and research assistant panned out throughout my time in Ghana to emphasise that the role of research assistants and language dynamics should be more thoroughly acknowledged in relation to data outcomes, power, and asymmetries in qualitative (and quantitative) research. Both RAs were integral to this PhD, and I very much valued their company, insights, and effort throughout.

4.7.3. Gender and the 'safety dance' in the field

In reflexive feminist literature (Clark & Grant, 2015; Caretta & Jokinen, 2016; Faria & Mollett, 2016; Kocsis, 2024), there is increasing recognition that one cannot always assume that "the researcher is privileged in any given interaction, especially when taking into account gendered contexts", which primarily fail to consider specific gendered issues of fieldwork praxis (LaRocco *et al*., 2019, p. 847). As such, there is a "collective intellectual imperative" (Faria & Mollett, 2016, p. 80) to see racial and gendered power as intersectional. Much of what occurred in Ghana was experienced through the modality of my gender (as well as the intersections of race, perceived class, and heterosexuality). Some of what I experienced remains personal to me, where I have sought to make sense of my fieldwork through writing what some have called a 'shadow dissertation' (Lewis, 2019). However, some of what is relayed below details how my perceptions

of what was safe and what was dangerous, based on experience in Ghana and previous life experiences, profoundly shaped the directions this ethnographic research took. In writing this section I do not intend to abrogate my own decisions in going to the field, but rather wish to highlight the way in which sexual violence and assault (something that is unfortunately too common for women or non-binary field researchers) can have a profound impact on the research process during and after the field.

4.7.4. Stalking, sexual assault & harassment

"The following afternoon, I noticed that he was again following me from the main road. I decided to turn around and confront him. He aggressively asked why his calls weren't working anymore and why I didn't want to talk to him. I ran away but he ran after me. He told me that he knew where I lived and that he would come to my house at night while I was sleeping." Notes from Cape Coast

This experience detailed in this excerpt above describes my interactions with a man named Ike. I had got into the habit of giving out fake phone numbers to people who asked me if I was married, but after Ike had followed me multiple times, I relented and gave him my real number. Once this happened, Ike called me 27 times that same day and left numerous messages. I decided to block him. The next morning, he was waiting outside my house and followed me, asking to be friends, and asking if I had a husband, and asking why I had not returned his calls. This continued, until I had changed my daily pattern so much that I deemed I had managed to avoid him, until the incident described above occurred. I became paranoid that he would break into my house at night and told my landlord Tony about the incident. I began to ask one RA to come to meet me first at the house. I slept with a knife under my pillow for the remainder of my time in Cape Coast.

Descriptions of violence, sexual harassment and rape in fieldwork have a long history (Moreno, 1995). Here, Moreno notes how concerns about safety and sexual harassment do not form what is understood as someone who is a 'professional researcher', but that women researchers in the field cannot pretend to be genderless (1995). Despite Moreno's harrowing account (1995) of being raped at gunpoint by her research assistant, it is still rare to hear about the gendered risks of fieldwork (Ross, 2015). Arguably, silence about diverse fieldwork experiences "fails to provide

adequate guidance to students preparing for research, leading many to individualize and therefore conceal the challenges they encounter" as well as it obscuring "the power relations that constitute researcher and researched, thereby masking the relationship between power, knowledge, and inequality" (Sundberg, 2003, p. 181).

As such, in efforts to mitigate the gendered risks of my fieldwork, I decided to conduct research in the post-harvest sector, because it is a sector where predominantly women work. In what Ross (2015) calls the 'safety dance', I found myself in often vulnerable positions in the field where I had to constantly assess the balance between my own personal safety and data collection. The excerpt below describes how I had the opportunity to interview an NGO employee, but I could only go alone. I believed that it would be safe due to the interview taking place in the NGO offices. However, upon offering me a lift back to town, in the car, the NGO employee,

"*Asked if I was free for drinks later and stroked my thigh. I froze up. He wasn't looking and ran over the dog, but he ran over it so slowly, the dog screamed high pitch wails, and I could hear his bones shatter.*" from my notebook, Cape Coast

Throughout fieldwork, I received numerous sexual text messages, was groped, experienced almost constant catcalling, as well as unwanted touching and men taking pictures of me on the street. My 'safety dance' in Ghana therefore included but was not limited to 1) avoidance of interactions with groups of men 2) conducting interviews in public spaces or with research assistants 3) wearing a fake wedding ring 4) telling key informants that I was married and that my husband was waiting for me 5) Actively preferring to interview women or trusted known men 6) pretending I was Christian 7) Deciding to stay in more touristy hotels 8) not leaving my house over the weekends. 8) Forgoing food because I could not face the attention when I left the house. These were just some of the strategies that I believed would enhance my personal safety.

In discussing risks of sexual violence in fieldwork, Hunt (2022) notes that a stigma remains regarding assumed researcher competency if risks and details of fieldwork trouble are exposed. This is much the same for the emotional and psychological risks and consequences of fieldwork (Taylor, 2019). Within the praxis of the contemporary neoliberal university (Jones & Whittle,

2021), I have written this section in this thesis to argue for a better ethics of collective care for field researchers (Taylor, 2019), and to highlight the ways in which my gendered experiences and safety fears in the field shaped who I interacted with, how I interacted with them, and defined the self-imposed ethnographic geographical and temporal research limits of my time in Ghana.

Figure 4-5 The entrance to Cape Coast beach with artisanal fishing boats docked in the distance

Figure 4-6 fishermen folding fishing nets with fishing boats in the background, Cape Coast

4.7.5. Navigating chronic illness in the field

I turn, briefly, to describing how my research in Ghana was also shaped by chronic illness. Despite the high prevalence of chronic illness globally, there is little research describing how researchers navigate managing long-term illness with fieldwork demands, particularly and surprisingly in both geographical and anthropological literature. Despite this lack of attention, chronic diseases and pre-existing conditions can shape daily life in the field (Klehm *et al*., 2021), and in my case, shaped the length of time that I could stay in Ghana. I have lived with a non-acute, (now) invisible, chronic autoimmune disease for most of my life, which I manage with medication in the form of injections that must always be stored below 5 degrees Celsius and taken every 3 weeks. Bureaucratic struggles and travel obstacles meant that I could only take 4 injections with me to Ghana, meaning that I could stay for a maximum of 12 weeks overall. However, heroic, and masculinist tropes in anthropology and geography still remain where *deep and long-term immersion* in the 'field' is often seen as the only way to understand the 'real' issues affecting people (Borchgrevink, 2003). I acknowledge that a total of four months in 2022 was not a significant period of time, however my research time was dictated by medication and health needs. Interwoven with my aforementioned safety dance, I chose where to do research primarily based on where I could find a safe, and constantly 'on' fridge in which I could store the medicine.

Embodied and affective aspects of fieldwork have received a large amount of attention in feminist geographical and anthropological literature (Sharp, 2005; Sundberg, 2005; Caretta & Jokinen, 2016). However, methodological accounts of chronic illness in social science fieldwork have been underacknowledged. I have briefly described here how chronic autoimmune illness intersected with my fieldwork, not to "advocate for the kind of navel gazing so abhorrent to many scholars" (Sundberg, 2005, p. 17), but to highlight the ways in these factors presented a limiting factor on my research scope, time, and capabilities.

4.8. After the field: care-full ethics?

Ethical considerations covered in ethics review, such as confidentiality, informed consent, and adequate data management, cannot always anticipate ethical dilemmas which present methodological and personal challenges in the field (Palmer *et al*., 2014). Oftentimes, this is because an ethics committee will seek to make sure that the researcher does no harm, without understanding the researcher as embedded in broader social processes (Palmer *et al.,* 2014). The first part of this sub-section will detail how I seek to ensure a "care-full" ethics for those who participated in this research. The second part will reflect on how, despite the confines and limitations of the contemporary neoliberal university (Jones & Whittle, 2021), a "care-full" ethos for those who undertake fieldwork should be better considered and enacted, particularly for doctoral or early-career researchers.

4.8.1. Care-full ethics for participants

When does the 'field' end? Ouma notes that "the relationships we forged during our research do not simply disappear" (2015, p. 91). He writes that in the contemporary age of mobile phones and quick connections, social relationships continue from afar, where "former research assistants may approach you for financial help; former interviewees may want to read about your research results" (2015, p. 92). As such, ethical dilemmas and decisions have been imbued throughout this doctoral research process and did not solely occur in the 'field'. Guillemin & Gillam define moments, such as the one described below, as 'ethically-important moments' which are "the difficult, often subtle, and usually unpredictable situations that arise in the practice of doing research" (2004, p. 262). Guillemin & Gillam note the distinction between procedural ethics and ethics in practice.

Procedural ethics has its roots in biomedical sciences (Guillemin & Gillam, 2004). Ethical considerations in this research were also approved by the Faculty of Science and Technology, which is not arguably accustomed to deliberating on more situated, everyday ethics in practice inherent to many social science disciplines (Guillemin & Gillam, 2004; Dyer & Demeritt, 2009).

'Ethically-important' moment 1

I interviewed a fish processor in Cape Coast who began crying when talking about how hard it is to make ends meet. Her husband had died, and she was raising her daughter alone. At the end of the interview, she asked for an approximately £500 loan for her business. I had to refuse. I felt awful.

How can I ensure care for this fish processor (known by her pseudonym Hannah in the first empirical chapter?) Why would me interviewing her be at all beneficial for her? Despite recompensing her for her time, the short answer is that it wasn't, and I was critically aware that I could not balance out the asymmetric relations between us. In reflecting on the role of care and responsibility of fieldwork, Hall notes that recompensing participants and the role of the researcher "acquire particular resonance in austerity" (2017, p. 303). She asks "when researching at a time of economic uncertainty, is it reasonable to expect participants not to be enticed by monetary benefits? (2017, p. 306). Consequently, I became aware that conducting this research in this context of economic hardship meant that I needed to find a way to acknowledge gratitude while also being mindful of the fact that it unveiled gulfs of inequality between us (Hammett & Sporton, 2012). Perhaps Hannah's story has stayed with me because it became clear to me that I could not help her, and that my research would almost certainly not assist her in her daily struggles. We may see fieldwork and research as having a liberatory potential (Sultana, 2007), but I continue to struggle to see how my academic intrusion in Hannah's life benefitted her. There was no chance to build a shared meaning or experience with Hannah, my whiteness built too much of a gap between us, the money paid a reminder of the gulf in worlds and inequalities that continue to shape our respective lifepaths. As such, the 'social distance' (McDowell, 2001) between myself and Hannah was too great for me to comfortably reconcile the questions of; what right do I have to represent Hannah's story?

‘Ethically-important’ moment 2

Another ethical dilemma that occurred in the ‘field’ was that of uncovering illegalities.

We were interviewing a prominent fish mother in Tema, who has built up a successful livelihood from buying illicit bycatch and imported fish from trawlers. She told us some things in confidence about illegal fish trade that would have been highly useful to include in this research. However, I have not included this information, as I don’t wish to betray her trust.

In moving towards more situational and relational ethics, Dekeyser and Garett (2019) argue that situatedness in ethics means that there should be more of a careful consideration regarding the uncomfortable position between the legal and the ethical. In the first empirical chapter in this thesis, I detail how an increased market dependency on trawler-caught fish alters social relations in the post-harvest fishery. I believe that understanding the informal, or the illicit in research is important to fully grasp processes of agrarian change, environmental degradation, and inequality. However, I became aware that if this empirical chapter had been set out as a research project prior to going to Ghana, it may have been received differently by the ethics board. A situated ethics is therefore necessary for the field (Bono, 2019), but there is little reflection on how to deal with these ‘ethically-important moments’ (Guillemin & Gillam, 2004) in terms of their impact on ethical conduct in relation to the immediacy, pressures, and urgencies of ethnographic fieldwork.

As such, throughout this research, I have always endeavoured to take a caring and responsible approach to research and conducted my research according to my ethical approval as set out by Lancaster University. However, I have sought to highlight here some further ethical dilemmas that are not normally dealt with by ethics committees, which I have also endeavoured to treat with care and respect throughout this research process.

PhD research is by nature finite, condensed, and intense (Billo & Hiemstra, 2013). Accelerated timelines are one of the defining features of the neoliberal university (Mountz *et al*., 2015), which means that a possibility of slow scholarship becomes increasingly difficult in a contemporary academic life defined by casualisation, unsustainable workloads, publish or perish culture, and short deadlines for marking (Pickerill, 2024). A looming question that has arisen is how to ensure that I wrap up this project in a ‘carefull’ and considered way for the participants, and also for

myself in the context of an increasingly precarious, insecure, and time-pressured academy. After this PhD, I will write up a general and accessible report and translate it for those in Ghana who took part in the research. I have also asked a friend to make a video to redistribute back to fish processors and traders over WhatsApp, in case I cannot find funds to go back to Ghana. However, do these actions answer how we can cultivate a broader space to care for ourselves, colleagues, students, and also research participants? (Mountz *et al*., 2015).

4.8.2. Care-full ethics for researchers in the field?

Intersections of gender, emotions, race, and personal life play out in key ways in fieldwork. As such, the researcher "cannot conveniently tuck away the personal behind the professional, because fieldwork *is* personal" (England, 1994, p. 85). In recognising the time-constraints and limitations of care in the neoliberal university (Jones & Whittle, 2021), as well as the pressures to publish and be a worthy-enough researcher (Whittle *et al*., 2020), I seek to question in this sub-section how a better ethics of care may be enacted for field researchers by the university. In struggling to free ourselves from the colonial, objective, and rational core of social science, I examine how enacting an ethics of care for fieldworkers before, during, and after fieldwork could assist with difficulties regarding mental health, loneliness, violence, and sexual violence and assault in the field, and combat the culture of shame in which expressing fear or difficulty in and of fieldwork is a sign of research failure. "Care" as Mountz *et al* argue "is not self-indulgent; it is radical and necessary" (2015, p. 1238).

Fieldwork can have significant impacts on the mental health of the researcher and exacerbates vulnerabilities that fall along the lines of sexuality, gender, race, class, age, and disability to name a few (Taylor, 2019). It is particularly common for fieldworkers to experience direct or vicarious trauma, where little to no training on how to emotionally manage complex challenges in fieldwork leads to a culture of individual silence and shame (Reyes-Foster & Lester, 2019). Prior to going to the field I filled out a risk assessment form, which asked me to highlight the risks involved with fieldwork and how I would mitigate them. One such example is how to mitigate kidnapping, where the only suggestion was to 'lock the car door'. This risk assessment did not prepare me for what to do in case of a severe car accident, sexual assault, mugging or indeed, kidnapping. Taylor (2019) describes his experience of being diagnosed with Post Traumatic Stress Disorder (PTSD) after

experiencing harrowing events in his doctoral fieldwork. He however also details that several professional silences and expectations surrounding "the emotional and psychological challenges of ethnographic research" contribute to "disciplinary and institutional cultures that valorise emotionally opaque accounts of the field" (2019, p. 194).

Before going to Ghana, I received no pre-fieldwork training, and as such relied on my own previous experiences conducting fieldwork in my other degrees. This contrasts to other professional disciplines, such as journalism or international humanitarian organisations, where pre- and post-trip intensive briefings are often provided for their staff (Bloor *et al*., 2010). This burden of harm can unequally fall on junior researchers and PhD students and is arguably a matter of culture in a university rather than a structural deficiency (Bloor *et al*., 2010).

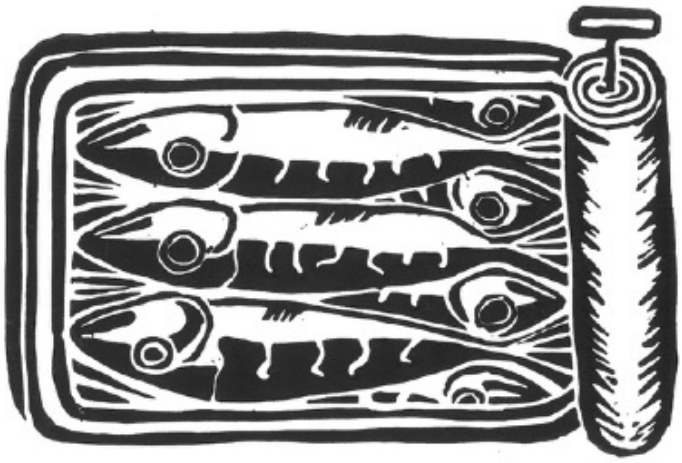
In writing this, I do not abrogate my own personal responsibility in choosing to do fieldwork nor do I intend to criticise others, as I recognise the increasing academic burnout and constraints in contemporary academia (Whittle *et al*., 2020). However, in line with Taylor, if we seek to challenge the masculinist and colonialist underpinnings of fieldwork (and indeed research), there must be "clearer channels of advice, mentoring/sponsorship, and peer support, for researchers whose gender, sexuality, ethnicity, or disability makes them more vulnerable to traumatic experiences in certain field settings" (2019, p. 195). This amongst other things, could include, developing accessible guidance related to mental distress in the field, prioritising practical and financial support for pre-fieldwork training and professional debriefing, and ensuring that there is accessible, appropriate, and affordable mental health care for those who need it after fieldwork (Beckett, 2019). In 1990, Howell wrote that "anthropology is potentially a dangerous business, and.. the field copes with that danger not by rational preparation but by denial. Students aren't warned, they aren't instructed, and after their 'trial by fire' they don't come back and change the system" (1990, p. 9). Thirty-five years later, despite extensive methodological accounts of danger and violence in the field, it does not appear that much has changed.

4.9. Conclusions

"'Being there' does not mean 'getting it right'" and "mistranslations are part of the game" (Ouma, 2015, p. 92). The accounts that follow throughout the rest of this thesis are full of the politics,

urgencies and necessities that constituted the ‘field’. In line with critical grounded theoretical assertions, this chapter has relayed how throughout my ethnography in Ghana I was already predisposed in relational, material, and cognitive terms as a part of already existing global processes (Belfrage & Hauf, 2017).

This chapter has highlighted how critical realist philosophy and critical grounded theory, has moulded my approach to my methodology. It has also described the embodied, affective aspects of fieldwork, as well as the masculinist and colonial underpinnings of my research. It has noted the primary methods in which data was obtained, and detailed ethical decisions and quandaries in the ‘field’. This has been with the aim of exploring in greater detail the often hidden and little-discussed aspects of ethnographic methodology, to better illuminate the power dynamics inherent to my own research process, and how this concurrently shaped my research into the economic, environmental, and social power dynamics in Ghanaian fisheries and how their respective aquatic food markets are connected to the effects of industrial overfishing.



Credit: Nadia Hamilton

Chapters 5 – 8: Empirical chapters and concluding remarks

5. Chapter 5 - Developing the market, developing the fishery? Post-harvest women's associations in the making of the fish market in Ghana

The following chapter is my first empirical chapter. It will theoretically and empirically explore the notion of market-led development through the implementation of hygiene and quality standards in the Ghanaian post-harvest sector, which have partially been created as a response to low levels of fish landings. Chapter five has been adapted from the published paper:

Standen, S. (2025) 'Developing the market, developing the fishery? Post-harvest associations in the making of the fish market in Ghana', *Marine Policy*, 172, p. 106536. Available at: https://doi.org/10.1016/j.marpol.2024.106536.

5.1. Introduction

Market-led development initiatives which purport to address poverty alleviation, economic inefficiency, and environmental mismanagement are currently a dominant approach to agrarian reform in the Global South (Akram-Lodhi, 2007; Corson *et al*., 2013; Manley & Van Leynseele, 2019). For small-scale farmers, access to global food markets is portrayed as a means of empowerment and an opportunity for income generation (Ferris *et al.,* 2014). A similar narrative also exists in development discourse for small-scale fishers, traders, and processors, whereby better market access and value addition resulting in increased profit on fish sold, is envisioned to empower women, and develop small-scale fisheries into economically productive entities (USAID, 2022). Market-based development policies, such as the creation of fish quality and hygiene standards, are therefore increasingly proposed in small-scale fisheries as an opportunity to empower women, address poverty, and improve the sustainable governance of fisheries (World Bank, 2004; USAID, 2022).

The post-harvest sector has recently become the focus for market-led development initiatives in Ghana. In Ghana, women predominantly organise the trading, processing, marketing, and selling of fish in the post-harvest sector, while men are responsible for the harvesting of fish (Appiah *et al*., 2021). In recent years, post-harvest associations have been established, which are usually

encouraged by development agencies and government as a way of improving hygienic handling of fish and profit (USAID, 2022). To examine the dynamics of market-led development in Ghanaian fisheries, the role of post-harvest fish associations and their relationship to fisheries development actors, government, and other post-harvest fish workers in Ghana is explored, as well as how women fish processors and traders experience membership in such associations.

This paper then critically appraises how Ghanaian fisheries governance and development actors promote access to new, higher-value-added markets through fish hygienic standard certification for Ghanaian women fish processors and traders as a means of market-led development. In this case, higher value-added markets mean access to formal markets such as supermarkets, export markets, and the creation of segregated value-added sections in Ghanaian territorial aquatic food markets (USAID, 2022). Territorial markets in fish are vital for food security and are commonly understood as directly linked to local, national, or regional food systems, where the main market actors are from within the territory (Terra Nuova, 2016). They differ from global market value chains because the value that is created is often redistributed back into the territorial economy, whereas global market value chains are more extractive, where value flows outwards to export-oriented supply chains with concomitant tax and currency benefits for the state (Terra Nuova, 2016).

Analysis of interviews with women association members, as well as international organizations and fisheries governance actors, indicates that post-harvest associations are formed so that value can be added to fish through creating “market-friendly” hygienic fish quality and standards to increase profit in the small-scale post-harvest sector. The creation of post-harvest associations serves to enable access to supposedly better, value-added fish markets for small-scale post-harvest fish workers. Governance techniques, such as the creation of fish hygienic standards, equate hygiene with modernity and profit, and produce and reinforce social differentiation between hygienic and contaminated to legitimize access to higher value-added fish markets. ‘Hygienic modernity’ has a long and complex history in colonial projects (Rogaski, 2004), and as will be shown in this paper, the implementation of fish hygiene and quality standards is seen by development agencies as a means of modernising the Ghanaian small-scale fishery.

It argues that market-led development initiatives can ultimately risk furthering unequal capitalist social relations (Akram-Lodhi, 2007) in aquatic food systems, which risk working to the detriment of post-harvest workers, fish consumers, and nutrition-sensitive fisheries governance policies (Robinson *et al.,* 2022; Allegretti & Hicks, 2022), as well as belying the broader, more pertinent issues regarding industrial overfishing and the decline of the small pelagic fish catch in Ghana (Asiedu *et al*., 2021). While accessing higher value-added fish markets may be beneficial for some, development agencies should pay greater attention to ensuring that small pelagic fish remains an accessible and low-cost food to support the social and nutritional benefits small pelagic fish currently offer to lower-income Ghanaian fish consumers. Using critical marketization and development literature (Mitchell, 2007; Overå, 2011; Ouma, 2015) to critically analyse understandings of the "market" in market-led development, I argue that in the context of a declining small pelagic fishery (Asiedu *et al*., 2021), the emphasis on accessing new, more profitable, higher value-added markets for small-scale post-harvest workers, deserves more critical scrutiny in the development of Ghanaian fisheries governance policy.

5.2. Which market leads development?

Market-oriented developmental agendas have been the mainstay of African development policies since the 1980s, emerging as an alternative to state-led approaches implemented throughout the 20th century (Lahiff *et al*., 2008). Since the 1980s, Ghana has been targeted by World Bank economists, who have encouraged the country to promote non-traditional exports, liberalize markets, embrace export-oriented trade policies, and attract Foreign Direct Investment (FDI) (Ouma, 2015). Partaking in global or higher-value markets is seen to be able to unleash the economic potential of small-holders and small-scale fisherfolk. Here, attempts to promote market-led development means that development agencies and government want "to actively design and shape markets through reengineering economic relations and practices" (Ouma, 2015, p. 4).

Market-led development discourses usually convey the idea that the capitalist market has a boundary and is separate from "large areas of material activity and resources that seem to exist beyond its limit" (Mitchell, 2007, p.246). The task of development economics is to "help extend the rules of the market into these other spaces" (Mitchell, 2007, p. 247). Such 'other spaces' (such as unhygienic and therefore unprofitable handling of fish) always lie outside of, but in relation to,

categories such as *the* market, capitalism, or modernity, justifying interventions and cementing the idea that 'the market' exists independently as "a kind of transcendental being" (Ouma, 2015, p.4). Development therefore means there is a series of transitions, between non-capitalist to capitalist, non-market to market, economically unproductive to profitable (Mitchell, 2007).

The idea of a transition from economically unproductive to profitable in market-led development correlates closely with modernization narratives in development discourse. Here, development is "understood as a process of becoming 'modern'" (Willis, 2014, p. 300), which usually implies that poorer countries lack internal factors such as skills, knowledge, and capital. It is assumed that once countries in the Global North assist them in this capacity "success would follow" (Willis, 2014, p. 301). The will to modernise African small-scale fisheries belongs to much of the same narrative, and has continued since colonialism, due to a dominant depiction of small-scale fisherfolk as being traditional, overpopulated, and guilty of overfishing (Overå, 2011), with respective territorial markets often not being understood as valuable to food security or livelihoods (IPES-Food, 2024). Skills, knowledge, and capital are also in this case assumed to be lacking in African small-scale fisheries, and modern solutions to the problems afflicting African small-scale fisheries are seen as due to a lack of capacity, capital-intensive equipment, and open access fishing governance, to name a few (Overå, 2011).

Within modernisation development narratives, development agencies often wish to overcome the problem of "underdevelopment" for poorer countries, through integration into the global economy (Walker, 2001). This has gendered implications for women in lower-income countries, who have often come to be seen in terms of their ability or inability to partake in global, more export-oriented markets (Walker, 2001) and thus contribute to economic development through wealth creation.

Emphasis on wealth creation in fisheries has echoes in the colonial roots of modern fisheries science and management (Silver *et al*., 2022), where there is often a prioritization of maximum sustainable profit or yields (Hicks *et al*., 2019). This has led to calls for nutrition-sensitive governance in fisheries, which would manage fisheries according to nutritional need rather than maximizing wealth creation (Robinson *et al*., 2022). Fish and other aquatic foods are rich in micronutrients, and are vital for nutritional security, particularly for low-income consumers in the Global South (Allegretti & Hicks, 2022). The call for nutrition-sensitive fisheries governance

contributes to wider-ranging debates about recognizing fish as food within development policy and fisheries governance (Levkoe *et* al., 2017; Bennett *et al.,* 2021).

This paper thus problematizes the idealisation of modernising the Ghanaian post-harvest fishery through the 'market'. Large amounts of literature document the importance of small-scale fisheries, and their respective territorial markets and food systems, as vital for welfare, livelihood, and food (Béné *et al.,* 2010; Loring *et al*., 2019; Arthur *et al*., 2021; Ayilu & Nyiawung, 2022; IPES-Food, 2024). Yet, the implicit problematization of Ghanaian territorial fish markets in Ghana as contaminated and economically inefficient, allows for the extension of capitalist 'market' rules, and theoretically, the economic development of the fishery.

While good levels of safety and hygiene are vital for all who consume fish, market-led fisheries reforms, which ultimately prioritise profit, risk creating a two-tier market system in which the relative affordability and accessibility of small pelagic fish for lower-income consumers in Ghana could be compromised through undermining the 'fish as food' imperative (Bennett *et al.,* 2021). The next section will explore the importance of the territorial fish market and the role of fish exports and imports to food, nutritional security, and livelihoods in Ghanaian aquatic food systems.

5.3. Exports, imports, & territorial fish markets in Ghana

Markets are varied in nature and bear a wide range of differing characteristics (FAO, 2023c). Territorial markets can be understood as having multiple socio-economic functions, not all of which are directly linked to food supply, and which can be characterised through non-hierarchical, horizontal relations (Terra Nuova, 2016). Yet, data on these markets is often neglected in favour of more international export-oriented markets (FAO, 2023c).

The West African territorial cross-border small pelagic fish market is significant for both economic opportunity and livelihoods (Ayilu & Nyiawung, 2022). Small pelagic fish, which is widely consumed in Ghana, is also particularly important for low-income fish consumers across the country (Ahwireng *et al*., 2024). Fishing in Ghana is highly gender segregated, and women's role in Ghanaian post-harvest fisheries is significant because "they add value to fresh fish" "through "transforming fish into its monetary value" (Britwum, 2009, p.73). Women processors and traders'

work in Ghana's territorial fish markets is vital for ensuring the provision of low-cost and nutritious fish, meaning that Ghana has one of the highest consumption levels of fish in West Africa (Hasselberg *et al*., 2020; Overå *et al.*, 2022).

There has been a tendency in development to understand women fish processors and traders as a homogenous group (Walker, 2001), despite women's experiences of fish processing and trading being mediated along intersectional lines such as age, class, and race (Britwum, 2009). Access to fresh fish for women fish processors is mediated through marriage, blood lines, and entrepreneurial skills (Britwum, 2009). Powerful women fish processors and traders (otherwise known as 'fish mothers'), are often the financiers of fishing trips, and sometimes own the fishing canoes and nets outright and are more likely to have direct access to fresh fish (Britwum, 2009).

However, many fish processors do not have direct access to fresh fish through familial relations or entrepreneurial skills, due to their age, class, or ethnicity and are unable to access fresh fish or negotiate for better prices. The ability to access and process fish in Ghana is therefore deeply embedded within social relations and falls along intersectional, relational lines in the Ghanaian post-harvest sector. This is much the same for trading fish in Ghana, where the trading of fish is also socially embedded and dependent on trust, particularly with regards to debt repayment and product quality (Overå *et al*., 2022).

Declines in artisanal fish landings also have social and relational implications for the small-scale marine fishery in Ghana (Ayilu *et al*., 2023). Between 2000 and 2010, the small pelagic fishery in Ghana suffered declines in fish catch, with catches since plateauing in the years after 2010 (Asiedu *et al*., 2021) This has led to an increased reliance on imports to sustain the country's demand for fish (Taylor, 2022). The decline, and recent stagnation, in small pelagic fish landings, has been partly attributed to a high prevalence of industrial illegal, unreported, and unregulated [IUU] fishing, where bycatch, which often consists of small pelagic fish, is estimated to be at 46% of total industrial catch (Teye *et al*., 2020). Overfishing in the industrial trawling sector in Ghana, combined with low levels of artisanal fish landings, has meant that many women fish processors and traders are unable to sustain their livelihoods and income from fish.

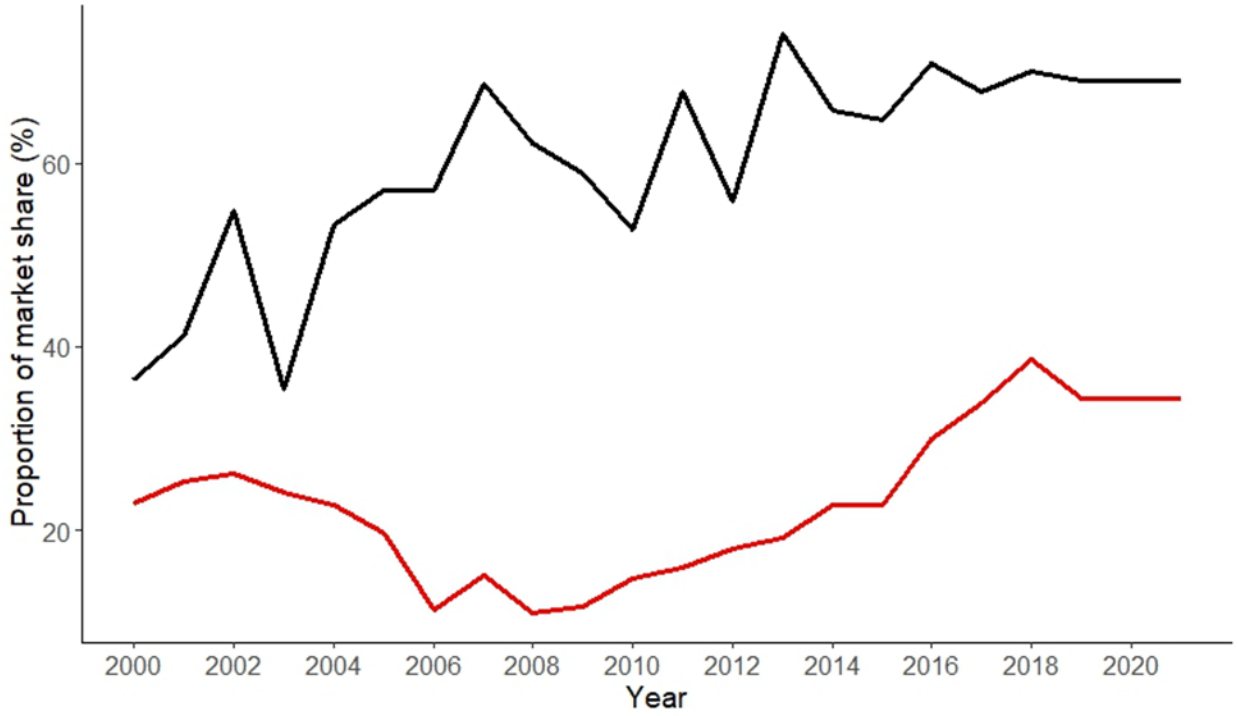


Figure 5-1 Percentage share of imports in total domestic supply (upper black line), and percentage share of exports in total national production of pelagic, demersal, marine fish, crustaceans, cephalopods, and molluscs (lower red line). (Source: FAOFishStat, accessed 9th May 2024).

As can be seen in figure 5.1, high levels of imported fish (proportionate to total market share of fish) ensures that domestic fish supply remains relatively stable. Yet this high and generally increasing proportion of fish imports relative to total market share of fish, also suggests that who gets to control the seafood value chain in Ghana is changing over time, with men dominating fish imports and cold storage (Ahwireng *et al*., 2022). Imported fish, as evidenced by figure 5.1, is vital for Ghanaian fish consumption. Yet, this reliance on imported fish for fish consumption in Ghana, shapes who gets to buy, process, and sell imported fish in Ghanaian fish markets, as well as the livelihoods these markets support.

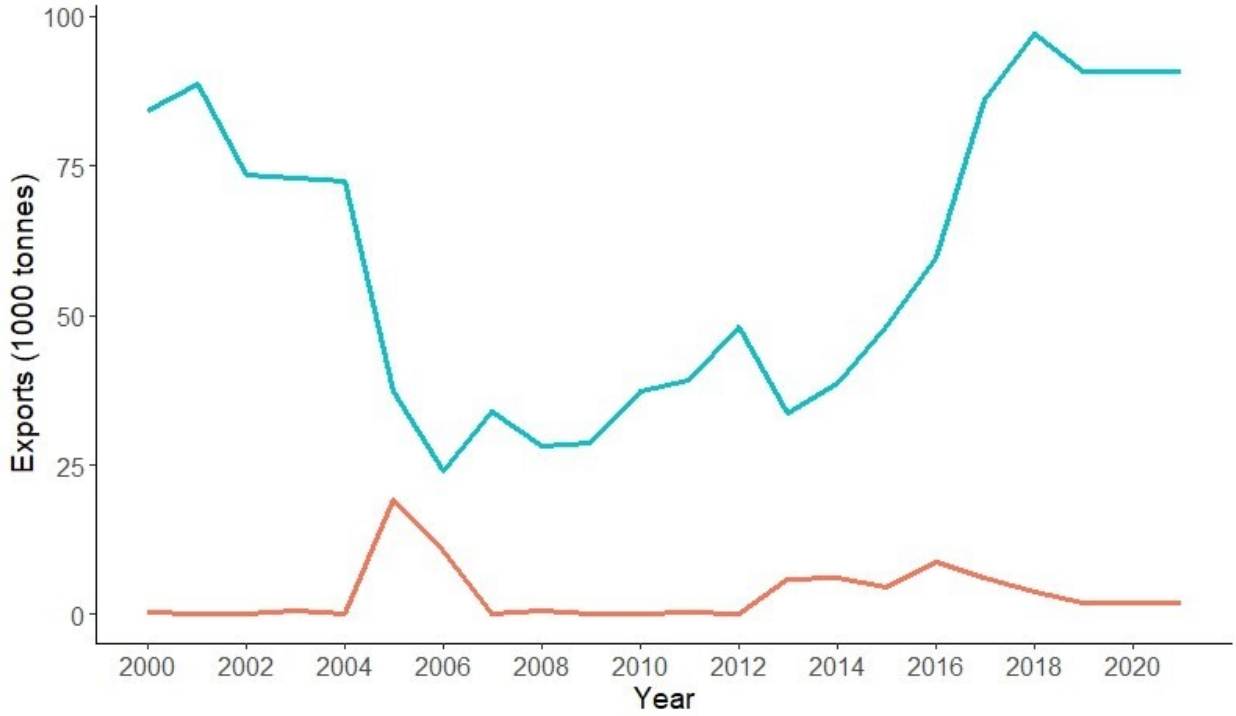


Figure 5-2 Exports per 1000 tonnage of pelagic and demersal fish. Demersal fish is measured over time with the lower, orange line and pelagic fish measured with the upper blue line (Source: FAOFishStat, accessed 9th May 2024).

This high reliance on imported fish, also comes hand in hand with an increase in exports in pelagic fish, particularly since 2015 (fig. 5.2). This could be seen as a success in terms of the integration of Ghanaian fisheries into global markets. However, an increase in exports from Ghana also shapes who gets to access and consume fish within the Ghanaian territorial fish markets. The combination of a high level of imported and exported fish raises the question of who gets to process and consume fish within this appropriation of seafood value chains by export and import actors, particularly in the context of stagnant and low levels of artisanal fish landings.

Complex territorial markets already exist for fish trade in Ghana and its neighbouring countries (Ayilu & Nyiawung, 2022). However, the pressing issue, as defined by development agencies, is for small-scale fisherfolk to be able to access more value-additive markets as a means of income generation, to mitigate the effects of small pelagic fishery collapse (USAID, 2022). What this means in the context of a vital territorial fish market and stagnantly low small pelagic fish catch in Ghana needs to be questioned. Processes of value addition through a reduction in post-harvest fish

loss, and investment in infrastructure could assist the post-harvest fishery (Overå *et al.*, 2022). Yet, value additive policies are instead here focused on the prioritisation of profit, where better profit is equated with more hygienic handling of fish. Accessing formal fish markets, international fish markets, and segmenting off sections of the territorial fish market through the implementation of quality standards and hygiene certification comes encased within the extension of neoliberal market-led fisheries reform, which can risk exacerbating social inequality and further degrade the environment (Li, 2015; McMichael, 2013a).

5.4. Methodology

For the sake of brevity, the methodological steps taken in this research are outlined in chapter four.

5.5. The creation of post-harvest associations

The formation of women's associations is a prominent means of establishing market-led development initiatives in the Ghanaian post-harvest fisheries sector. Post-harvest associations can be a group of anywhere from five to one hundred women (and sometimes men) fish processors and traders. The World Bank, international organizations like USAID, and local partner NGOs have been an integral driver in establishing these associations. Encouraging collective action in the form of associations is believed to be beneficial for post-harvest fish workers, as it allows for the associations to take advantage of fish handling and hygiene training, obtain access to funding from NGOs, and to learn how to increase the value of their fish to be able to access better, more profitable international or higher value markets. In a sector where women's voices often go unheard (Torell *et al*., 2019), the existence of associations allows for recognition that women fish workers are a vital part of the Ghanaian aquatic food value chain.

Women fish processors and traders can also collectively utilise the existence of NGOs and international organizations as a strategic move in which to better their economic and social opportunities. As I was told by a fisheries government worker in the coastal town, Apam: "*yes, on their own the women do meet at times. They will tell you they are active. But from my observation they only meet when NGOs, you researchers or government or something is coming up."* The element of strategically utilizing civil society resources was also echoed by Abena, the leader of an association in Apam. "*We established our association to formalize our activities… when any*

organisation comes in to offer any training or assistance to fish processors, we will also be recognized…."

The drive to establish post-harvest associations in Ghana was due to a $50.3 million World Bank loan, and a $3.8 million World Bank grant, which formed part of the West Africa Regional Fisheries Programme (WARFP). This came as part of a three-pronged approach to the development of sustainable fisheries governance in Ghana one of which was centred around a perceived failure to add value locally to fish (World Bank, 2019). Here, the World Bank highlights the capital value of Ghana's natural assets, including fisheries, and stated that there was significant scope for economic growth through strengthening fisheries legislation and management (World Bank, 2019).

In 2021, Tetra-Tech, [USAID] was awarded a 5-year contract to mitigate the near collapse of Ghana's small pelagic fishery to promote its ecological recovery (USAID, 2023). The project entitled 'Ghana Fisheries Recovery Activity' (GFRA) falls under a broader USAID plan entitled 'Feed the Future', the U.S government's initiative to alleviate hunger and promote food security. The strategic approach to fulfilling the project objectives includes a specific targeting of the post-harvest sector, whereby one of its strategic aims is to "increase the quality and value of artisanal fisherfolk's products" (USAID, 2023, p. iii).

In order to fulfil this objective, women's associations are encouraged to collectively form. This is so that post-harvest workers can receive training, funding, and information from governance officials and NGOs effectively. Associations have been encouraged through development agency-led training to handle fish hygienically, use Ahotor ovens (which are designed to reduce PAH [Polycyclic Aromatic Hydrocarbons] in smoked fish, (which falls under the EU standard of 12 μ/kg), and access other training on saving and quality assurance. The existence of associations precedes the creation of quality standards in the Ghanaian fish market, allowing for a management channel between post-harvest workers, NGOs, and government. The rationale is that quality and hygiene standardisation allows women processors to obtain a better price for their fish through accessing higher-value or international markets, due to fish being handled to a better hygiene

standard than already existing handling and hygiene practices in Ghanaian territorial fish markets (USAID, 2022).

As a consequence of World Bank funding, one of the largest post-harvest women's fish associations in Ghana, otherwise known as The National Fish Traders and Processors Association (NAFTPA) was established in 2015 as part of an effort to improve the profit value of fish sold locally. Other post-harvest associations exist, who do not belong to NAFPTA membership, but may be affiliated to other funding organisations, such as USAID/Tetra-Tech or other NGOs. NAFTPA acts as an umbrella organisation for 10 regional associations the 10 Ghanaian regions, with the regional associations containing district associations for respective cities, towns, and villages (NAFPTA, 2022). NAFTPA's membership at the time of data collection stood at roughly 16,500 people, with approximately 6000 men also being part of the association (interview 12).

One interviewee and a member of NAFTPA, describes what NAFTPA does in Ghana:

"*The women of NAFPTA, we are ready to produce quality fish, hygienic fish. This association, the objective is to empower the women in their fisheries and how to have a hygienic quality fish for the country.*"

NAFTPA also organises training for fish processors and traders through its various national associations. This training includes how to use 'Ahotor' ovens in place of more traditional ovens, how to hygienically handle fish, and training on how to better save money and access credit. It is evident that association membership has benefited some women fish processors and traders. In a focus group with a non-NAFTPA related association in the coastal town of Mumford, Grace, their leader told us:

"*The trainings are really beneficial. It is helping us to learn new techniques in processing. If we are able to process under the food safety standard they are training us in, we can export our fish to other countries.*"

Grace, in Mumford, however, also acknowledged how changes in the artisanal fishery are impacting post-harvest practices, mitigating some of the perceived benefits of being part of an association. Declining fish stock and rising pre-mix fuel prices are negatively impacting her fish processing/trading business, yet Grace still recognises the importance of low-cost fish for food:

"the fish catches are declining, and the cost of fishing expedition is also high due to the high fuel prices. So, fish is gradually getting expensive…notwithstanding, people on low budgets are at least able to buy some fish compared to other animal protein."

6.6. Making market rules for the Ghanaian fish market

In 2021, USAID and fisheries governance officials pushed for recognition that post-harvest handling of fish in the small-scale fishery needs to be improved, due to a substantial risk of microbial contamination in post-harvest handling of fish. Fish is a highly perishable food and is often subject to contamination with chemical and foodborne pathogenic microbes (Boakye *et al*., 2024). Under the Tetra-Tech/USAID led GFRA project, in collaboration with the Fisheries Commission, the Ghana Standards Authority (GSA), the Food and Drugs Authority (FDA), and the Ministry of Fisheries and Agriculture (MoFAD), the Safe Fish Certification and Licensing Scheme (SFCS) was launched in 2023 (FCWC, 2023). The aim of the licensing scheme was to regulate and encourage fish processors' hygienic handling of fish through licensing and accreditation.

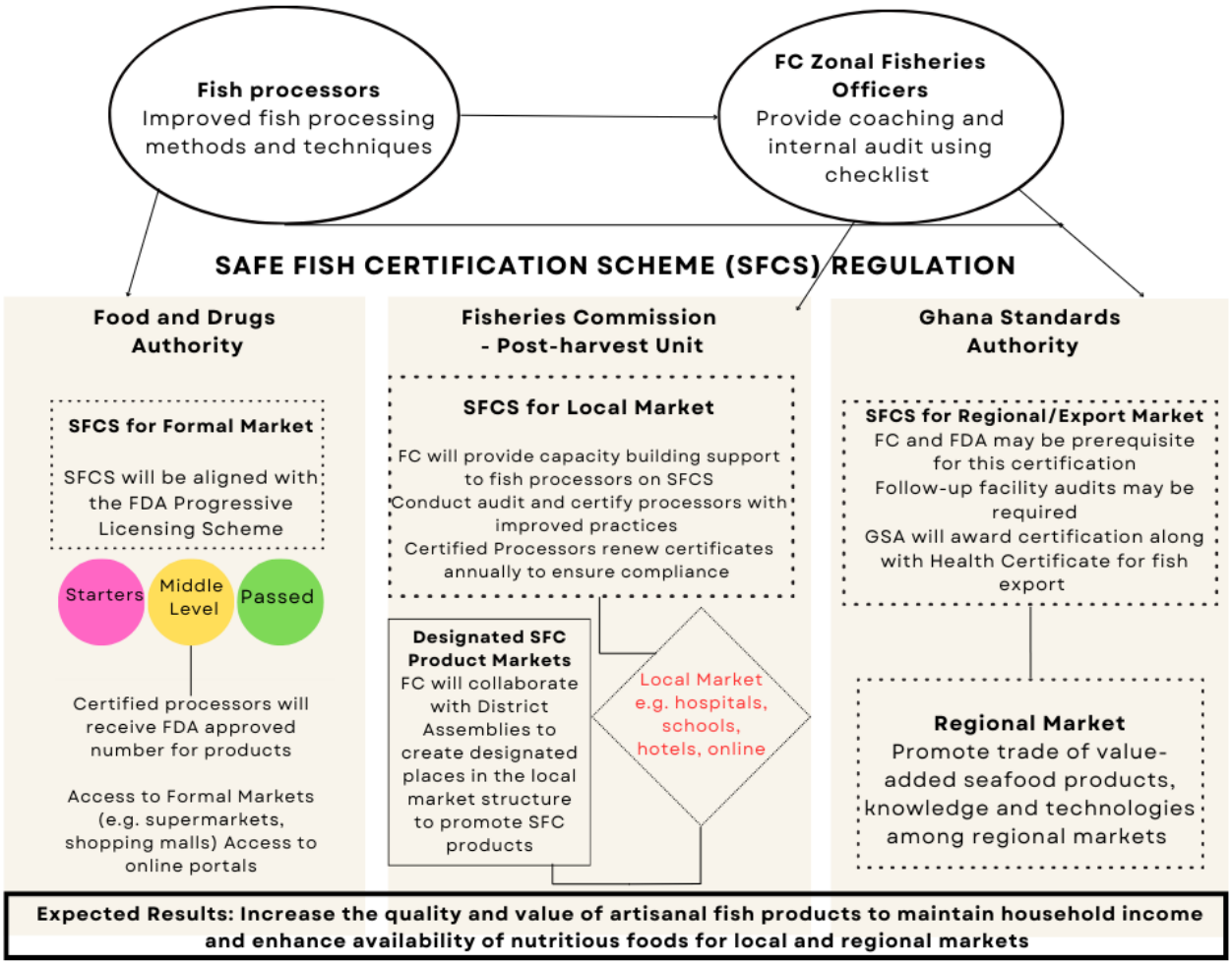


Figure 5-3 The Safe Fish Certification Scheme in collaboration with the Food and Drugs Authority, Fisheries Commission, and the Ghana Standards Authority. Redesigned for clarity (Source: USAID, 2022, p.9).

The launch of the SFCS (as visualised in figure 5.3) was due to 'high levels of microbiological and chemical contamination detected in processed fish on the market in Ghana" as well as "unsustainable and illegal fishing practices" which "contribute significantly to the low quality of fish catch" (USAID, 2022, p. 2). Here, unsustainable, and illegal fishing practices do not refer to IUU fishing in the industrial sector, but to illegal fishing in the artisanal sector, where the use of chemicals to fish, as an example, contributes to the degradation of the fish upon landing. Under the auspices of the sale of healthy fish in markets in Ghana, the scheme states that "processors who adopt improved methods will be recognized with a certificate and supported in gaining access to higher or premium markets for their fish products" (USAID, 2022, p.2).

As Abena, the head of the association in Apam explained, handling fish hygienically in order to receive the safe fish license means that:

"The food and drugs board is sensitizing us to create sheds, ensure our facilities are clean to prevent flies, ensure that it is not near toilet, or children do not defecate around the processing area, it's not near bushes. They are really teaching us how to care for the fish to ensure quality standards."

The rationale behind value-additive policies and the establishment of associations in the Ghanaian post-harvest sector was expanded upon by a USAID employee. Here, the employee reiterated USAID's stance on post-harvest fish handling, which incentivizes more hygienic handling of fish so that fish processors can make better economic return, which is seen as a means to mitigate the ecological collapse of the small pelagic fishery. She explained:

"W*e are trying to change behaviour through realisation of the economic benefits*. *You have seen how the fish is processed; it is not hygienic. We are working with these fish processors and the GSA to improve the women in terms of sanitation, who will improve the facilities, and that civilizes them..."*

However, the employee recognised the limits of USAID's behaviour change incentives, in so far as it should not impede the development of the market to lead the desired economic developmental changes in the small-scale fishery:

"*We also as much as possible do not want to interfere with the market structure, because the market forces need to work for sustainability."*

Echoing the colonial legacy of 'hygienic modernity' (Rogaski, 2004), modernist developmental narratives, equate, in this case, the hygienic handling of fish with progress, civilization, and development. The USAID employee went on to explain that standards making would allow for the creation of an "exclusive" fish market embedded within the Ghanaian territorial fish market:

"*We are working with the district assemblies to demarcate designated areas in our market where certified processors can sell the fish…we work with associations to make sure these marketplaces have designated areas where you can find healthy fish to buy*."

Standards setting surrounding the cleanliness of fish sold theoretically allows for a win-win situation for both the fish consumer, who gets to eat hygienically prepared fish, and the fish processor, who makes a better profit off hygienically prepared, quality fish. Those who can afford to can buy hygienic fish, free from carcinogens and microbial pathogens, thus appropriating the supply of fish. Those who cannot afford to buy such hygienic fish, are however, in a less advantageous position.

In the context of low small pelagic fish catch, the SFCS risks compromising the nutritional and social benefits of small pelagic fish, due to the emphasis on income generation derived from higher value-added formal, exclusive territorial or international markets. This risk was also recognised by a Fisheries Commission employee. She explained:

"we need to strategize, if we are promoting exports, we must have a cut off. So that the local market won't suffer…we shouldn't do it in such a way that the ordinary Ghanaian cannot afford processed fish on the local market"

While food safety for fish is not problematic, it is evident that standards making for the Ghanaian fish market through women's associations are geared towards compliance with international or higher value-added markets, and therefore to consumers who are able to pay more. This means that these quality standards based on hygienic fish handling do not support domestic consumption of small pelagic fish, due to the emphasis on increasing the price of fish sold at market(s). This can risk ignoring that small pelagic fish in Ghana is accessible because it is low cost. The extension of capitalist market rules through value addition policies in the Ghanaian post-harvest sector leads to fisheries governance policies which are not nutritionally sensitive, in so far as they do not recognise the importance of low-cost fish in Ghanaian territorial aquatic food market systems.

5.7. What is the value of a fish in Ghana?

Market-led agrarian reform can be understood as constituting of two assumptions. Firstly, that land is primarily an economic resource, and that markets "are institutions in which all participants are equal" (Akram-Lodhi, 2007, p.1437). In Ghanaian market-led reform, fish is framed as primarily an economic resource, fish processors portrayed as one homogenous group, and the market understood as a key means through which to mitigate the negative social and economic effects of small pelagic fishery collapse in the small-scale sector (USAID, 2022).

Yet, class and gendered power differentials in the territorial fish market mean that not all participants in the higher value market-led reform of the Ghanaian fishery arrive on an equal footing. If power differentials signify "inequalities in people's capacity to make choices" (Kabeer, 1999, p.439), then claims that the SFCS will "strengthen the capability of fish processors" (USAID, 2022, p.2), overlooks the fact that not all fish processors have an equal capability to make equal choices with regards to participation in higher value fish markets. The cost of investing in hygiene certification does not necessarily guarantee economic return for fish processors. Moreover, the expense of hygiene certification will be pushed onto the consumer, in order for fish processors to ensure that they make enough profit, meaning that only those who can afford to buy more expensive, hygienically handled fish, will. This means that market-led reform of the Ghanaian fishery risks compromising the food security that small pelagic fish currently provide to lower-income fish consumers in Ghana.

Moreover, the homogenising language of the SFCS tends to downplay the role of the industrial sector in illegally overfishing in Ghanaian waters, allowing for the idealisation of market-led development to smooth over socio-ecological issues caused by the high prevalence of IUU fishing by trawlers, and the subsequent low levels of fish catch (EJF, 2022). Despite this, the prevalent assumption by development and governance actors is that the reason for a lack of economic return for fish processors is due to shortcomings in their participation in higher-value markets. This sole focus on the economic value misses the social, cultural, and nutritional value of fish in existing Ghanaian aquatic food systems. It also disregards inequality and power dynamics in more globalised fish markets where "members of dominant classes, controlling disproportionately large shares of the means of production" "enter markets from a position where they can 'regulate' the

operation of the market to their advantage." (Akram-Lodhi, 2007, p.1441). The global market is not an entity free of power differentials, inequality, and social relations. In the global seafood market, fish is appropriated by more powerful actors such as industrial trawling companies (Österblom *et al*., 2015), to the detriment of other comparatively less powerful actors, such as small-scale fish processors. Yet, market-led development suggests that all market actors have a comparable opportunity for profit if only they were efficient enough, competitive enough, and [self] exploitative enough.

The risk of embedding inequality in the small-scale fisheries sector, is also admitted by USAID themselves, where it is recognised that the SLCS scheme will have:

"*the potential to have negative socio-economic consequences for fish value chain actors'* in so far as fish consumers are '*more likely to discontinue purchasing processed fish from local markets or uncertified processors after learning about the health risks, especially the risk of cancer. The vulnerable processor, who cannot immediately sign on to the scheme, may be impacted"* (USAID, 2022, p.10).

In the context of an increasingly scarce small pelagic fish catch, it is those who are able to best appropriate fish supply and those who can afford certification, (such as those in the post-harvest sector with direct access to fresh fish through familial or entrepreneurial relations), who will be able to benefit the most from higher value-added markets. Evidence suggesting that participation in higher value-added fish markets will bring about better economic return for *all* fish processors is thus lacking.

In the Ghanaian small-scale fisheries sector, post-harvest associations are key to implementing donor-driven value addition policies. The development of women's associations enables the 'modernisation' of the post-harvest fishery through the market, where the implementation of quality standards for Ghanaian fish processors and traders is seen as a key means of improving revenue generation (USAID, 2022) and is *not* importantly implemented for the sake of improving fish food safety in the territorial Ghanaian fish market to benefit local consumers, including the poorest and most vulnerable.

The depiction of lack of hygiene due to a lack of standards is a cornerstone of the SFCS scheme. Here, the problematization is of high levels of Polycyclic Aromatic Hydrocarbons (PAH) due to smoking the fish in inefficient ovens (Hasselberg *et al*., 2020), a high risk of microbial contamination due to unhygienic handling techniques (USAID, 2022), and the economic insecurity of the Ghanaian fisherfolk, (the burden of which often falls on women) which is perceived to be due to illegal artisanal fishing methods, rather than industrial overfishing (Afoakwah *et al*., 2018). This sets the stage for the market-led development of Ghanaian small-scale fish processors into hygienic, economically productive, neoliberal market subjects. Issues of high PAH levels, microbial contamination in fish, economic insecurity, and illegal fishing methods in the artisanal sector are important to address, however, the market-led solutions proposed to counter such issues risk embedding inequality in an already vulnerable small-scale sector which is impacted by industrial overfishing and marine overexploitation.

Solutions to the problematization of economic inefficiency and lack of hygiene are mediated through differing governing standards making bodies. Here, for example, as part of efforts to create a national standard of food safety for fish (USAID, 2022), the territorial fish market is problematized as impure and inefficient so that the certification scheme for the local territorial market can create "designated places in the local market structure to promote SFC products" (USAID, 2022, p.9). This is despite the fact that territorial markets play a vital role for regional food security. The evidence that the creation of exclusive "hygienic" fish markets will enable better availability of nutritious foods and maintain household income is spurious.

5.8. Conclusions

Despite recognition by USAID that fish is an accessible source of animal protein in Ghana, market-oriented development objectives such as the SFCS scheme risk undermining the importance of fish as food in Ghana. They risk downplaying wider issues of industrial IUU fishing, as well as embedding inequality in the post-harvest sector due to the assumption that all participants are, or will become, equal in "the market". Despite acknowledgement of illegal industrial overfishing in Ghanaian waters, the management plans evident in this project only target the artisanal fishery,

individualising the problem of a lack to fish to a lack of proper hygienic fish handling by fish processors.

In the making of a higher value-added market for the post-harvest sector in Ghana, the implementation of hygienic certification and quality standards risk creating a two-tier system in which the relative affordability and accessibility of small pelagic fish for the poorest in Ghana would be compromised. In the context of declining small pelagic fish catch, market-led developmental policies in the Ghanaian post-harvest sector bypass confronting the industrial overexploitation of Ghanaian waters and may do little towards fulfilling their stated aim of mitigating the ecological collapse of the small pelagic fishery in Ghana.

A more critical scrutiny of market-led value addition initiatives in Ghanaian fisheries governance policies is therefore needed. A clearer focus the nutrition-sensitive governance of fish (Allegretti & Hicks, 2022; Robinson *et al*., 2022), investment in fish processing and trading infrastructure (Overå *et al*., 2022) and tackling the prevalence of illegal industrial fishing in West African waters (Okafor-Yarwood, 2022) are necessary in order to move towards more socially-just, nutritionally-sensitive, and ecologically-sound fisheries governance policies.

6. Chapter 6 - Understanding the importance of 'susu' economics to Ghanaian aquatic food markets amid changing small-scale fishing livelihoods

6.1. Introduction

Studies of informal finance in small-scale fisheries are lacking (Ruddle, 2011). The few studies that exist often portray local credit and informal financial institutions as imposing harsh conditions on borrowers (Pomeroy *et al.,* 2020). In these studies, non-institutional credit lending in fisheries is often characterised as bearing "high monetary and non-monetary costs" which means that there is "a lack of transparency in finance conditions and the true cost of lending" (Pomeroy *et al*., 2020, p.2). Financial inclusion in fisheries (i.e., the ability to access state-regulated finance) is seen as a means of combatting the negative effects of non-institutional credit lending and has been touted as one of the key means of reducing household vulnerability and improving economic resilience for fisherfolk (Pomeroy *et al*., 2020; Nazir *et al*., 2018; Parappurathu *et al*., 2019; World Bank, 2022). Despite efforts to financially include fishers, the seasonal nature of fishing combined with difficulties in accessing state-regulated credit arrangements, particularly in rural areas, means that those who work in small-scale fisheries are often reliant on informal financial credit systems and are unable to fully access more formalised financial services (Béné *et al*., 2007).

This paper uses the example of the Ghanaian community economic practice of susu to explore the complexities of the usage of informal and formal finance in Ghanaian small-scale fisheries systems. Susu is a system where a small amount of money is paid into collective savings on a regular basis by people often known to each other. It has been noted as an example of a non-capitalist community economy in heterodox economic literature, particularly for Ghanaian market women (Bonsu, 2022; Hossein & Bonsu, 2023). However, while susu is a common means of saving and accessing financial credit for many people across Ghana (Adusei & Appiah, 2012), little has been written with regards to its role and importance within small-scale fisheries systems in Ghana (excluding f.e. Bortey, 1997).

Three main arguments therefore weave throughout this paper. Firstly, I seek to emphasise the importance of 'informal' economic practices, such as susu, to Ghanaian small-scale fisheries. To

highlight the importance of informal finance in small-scale fisheries, I situate informal finance as a vital part of the broader assemblage of economic practices in Ghanaian small-scale fisheries. I specifically contextualise susu in relation to financial inclusion initiatives, such as Village Savings and Loans Associations (VSLA). I contribute to a limited literature on the importance of informal economic practices in small-scale fisheries (Ruddle, 2011), and show how informal economic practices are often hybridised with more formalised practices (such as VSLA) to suit the fluctuations and uncertainties inherent to small-scale fishing-related livelihoods.

Secondly, drawing from critical marketization literature (Muniesa *et al.,* 2007), I argue that financial inclusion initiatives such as VSLA, are in fact market devices, and have the capacity to change 'market' and economic behaviour in aquatic food systems. VSLA can be understood as "self-selected groups of 15-25 persons whose capacity has been built [by NGOs and governance actors] to be able to mobilize savings" (EJF, 2019., p.16). Financial inclusion initiatives, like VSLA are market devices because they render certain economic behaviours, actions, and properties in small-scale fisheries as 'legitimately economic'. A market device configures "economic calculative capacities" to "qualify market objects, enact certain economic properties, and render economic qualities explicit" (Muniesa *et al*., 2007, p. 5). Participating in VSLA, as will be explored later in this paper, enables certain economic qualities in small-scale fisheries to become legitimised and visible to NGOs[14], such as the 'ability to save' to better access formalised loans for business expansion[15].

Finally, drawing from cultural political economy (Sum & Jessop, 2013), my third argument is that the fostering of VSLA by development agencies has not emerged in a void. VSLA has instead evolved as a suitable option to 'legitimatise' savings and credit in a context of low small-scale fish landings amid the broader development of industrial fishing in Ghanaian waters (Ayilu *et al.,* 2023). This means that industrial overfishing in West African waters, and the related low levels of fish landings in the small-scale fishery, create the space for financial inclusion initiatives to take hold as 'fixes' or justification for development intervention in small-scale fisheries (i.e., Resonance, 2024). I argue that financial inclusion 'fixes' in small-scale fisheries are a temporary

[14] Which can be understood as part of the state (Elychar, 2005)
[15] This is slightly ironic, as susu is appropriated by the VSLA model (CARE, 2011).

and apolitical remedy to the broader adverse effects of the 'crises of industrial fisheries' in both ecological and economic terms in capitalism (Mansfield, 2010; Campling & Havice, 2014). This is because financial inclusion initiatives do not 'fix' the low levels of fish landings amid broader economic and political changes in Ghana which also adversely impact small-scale fisherfolk. Through the language of empowerment and business expansion (CARE, 2011; Resonance, 2024), and through legitimising certain economic practices, financial inclusion market devices such as VSLA alter 'already existing' savings behaviour in the Ghanaian small-scale fishery to extend neoliberal market rules.

To make these arguments, I draw on qualitative data from five coastal communities in Ghana. Semi-structured interviews and focus groups were conducted with fisherfolk customers of state-regulated banking services such as churches, rural banks, multi-credit agencies, as well as with fishing-related participants in VSLA and/or self-organised, 'informal' susu groups. The data highlights the hybridisation and spectrum of susu offered by banks, religious institutions, and development agencies in coastal Ghana, and sheds a critical light onto the apolitical imaginary of financial inclusion for small-scale fisherfolk.

In sum, this paper ultimately argues for recognition of the importance of 'informal' economic systems such as susu in small-scale fisheries. I draw from economic performativity literature (Callon, 1998; Muniesa *et al*., 2007), as well as insights from cultural political economy (Sum & Jessop, 2013), to highlight the importance of market devices in Ghanaian aquatic food markets, which, I argue, are made *in dynamic relation to* the broader more structural, environmental, economic, and political relations that shape small-scale fisheries. Understanding the dynamic and constitutive role of markets as assemblages 'in the making' with, and in relation to, broader capitalist structural crisis tendencies, can help to illuminate the power dynamics, hegemonic practices, and ideologies that shape such markets and their respective food systems. I also call for future research into the importance and relationally dynamic nature of informal finance, particularly in the pre- and post-harvest sectors, to better expand on their contributions to small-scale fisheries systems.

Section 7.2 of this paper will firstly overview how and why fisheries are experiencing 'crises'. Drawing from cultural political economy (Sum & Jessop, 2013), section 7.3 will then detail why centring a critical, empirical, and theoretical analysis of the dynamic nature of aquatic food markets in relation to capitalist crisis tendencies is necessary to be able to fully explore the structural and culturally contingent power dynamics that shape Ghanaian small-scale fisheries relations. Section 7.4 will detail the importance of susu economics to small-scale fisheries in Ghana. Section 7.5 will analyse one of the more 'formalised' susu economic practices (VSLA) in Ghanaian small-scale fisheries, which has been initiated and maintained by development agencies as a means of promoting financial inclusion. Sections 7.6 and 7.7 will explore empirical data gained through semi-structured interviews regarding the importance of susu and its hybrid forms amid changing pre- and post-harvest fishing livelihoods.

6.2. Fisheries crises?

Fisheries are widely understood as in ecological and economic crisis (Campling & Havice, 2014). The proportion of fish stocks which are estimated as overfished has risen from 10% in 1974 to approximately 40% in 2021 (FAO, 2024, p. 43). Fishing effort and capacity in global marine wild-capture fisheries has doubled since the early 1990s, yet global fish landings have remained stable, presenting a worrying trend (Bell *et al.,* 2016). It is also estimated that global marine catches are higher than reported and are in decline (Pauly & Zeller, 2016).

The economic and ecological crises of contemporary fisheries systems are often portrayed as caused by weak and illiberal property regimes (Campling & Havice, 2014). The narrative of weak and illiberal property regimes is particularly evident in depictions of small-scale fisheries (Overå, 2011). Here, the potential to modernize small-scale fisheries through economic efficiency measures and proper governance (Cunningham, 2009) has been the basis of policies which have promoted the commercialisation and industrialisation of fisheries (Arthur *et al.,* 2021). Larger, more industrialised, and often heavily subsidised industrial fishing has been noted in a wide-ranging literature as particularly detrimental to small-scale fisheries (Kaczynsky & Fluharty, 2002; Sumaila *et al.,* 2019; Arthur *et al.,* 2022; Ayilu *et al.,* 2022). The encouragement of industrialisation is tightly linked to blue economy initiatives (Ayilu *et al*., 2023), which have also been noted as marginalising small-scale fisherfolk (Cohen *et al.,* 2019; Bennett *et al.,* 2021). This

comes amidst a significant increase in global trade of aquatic foods (Gephart *et al.,* 2024), where higher-income nations have succeeded in protecting their waters (FAO, 2024), to the detriment of fisheries in the global South, which are industrially trawled to meet aquatic food demand from the global North (Arthur *et al.,* 2022).

The industrialisation of contemporary fisheries has been understood as consisting of five key features. Firstly, the scale of fishing as well as the technology, size of nets and lines has increased exponentially, in line with a growth in large seafood firms (Mansfield, 2010). Secondly, global commodity chains "provide relatively wealthy consumers of the global North with a vast array of fresh fish" (Mansfield, 2010, p. 84). Thirdly, in the name of economic development, states actively encourage the modernization of fisheries through industrialization, which has a fourth effect of displacing and marginalizing small-scale fisheries (Mansfield, 2010). Fifth, the industrial fisheries sector is capital-intensive and as such, bears inherent contradictions because "firms depend on the environment to provide necessary resources" (in this case fish), however, "they actively avoid paying the full costs of protecting the environment on which they depend" (Mansfield, 2010, p. 85). Such harmful, industrial fishing is therefore "the purposeful outcome of ongoing efforts to foster a western, capitalist model of development" (Mansfield, 2010, p. 85).

The encouragement of fisheries industrialisation has particularly stark consequences for Ghanaian small-scale fisheries (Ayilu *et al.,* 2023). In West Africa, it is estimated that approximately 6.7 million people rely on fish for food and livelihood (Belhabib *et al*., 2015). Fishing and fish processing are deeply embedded within coastal and inland fishing social practices, and have significant value for food, livelihood, and culture (Akyeampong, 2007). In recent decades, small-scale small pelagic fish landings in Ghana have seen a reduction in landings, meaning that there is a higher reliance on imported fish for domestic fish consumption (Asiedu *et al*., 2021; Taylor, 2022) and a concurrent increase in exports (Standen, 2025). One of the many key drivers in the reduction in small-scale fish landings is the high levels of Illegal, Unreported, and Unregulated (IUU) fishing activities in West African waters, which mostly occurs due to the industrial fishing sector (FTC, 2022; EJF, 2022). It is estimated that up to 46% of industrial bycatch in Ghana consists of small pelagic fish (Teye *et al*., 2020), undermining small pelagic fish stocks and small-scale fisherfolk's food, livelihoods, and income.

High levels of industrialised fishing and subsequent reductions in fish landings have implications for those in the small-scale sector in Ghana. Women often undertake much of pre- and post-harvest labour in Ghanaian small-scale fisheries (Appiah *et al*., 2021). The pre-harvest sector is characterised by the processes and labour carried out before the harvesting of fish (FAO, 2015), which includes acquiring capital to finance fishing trips. The post-harvest sector in fisheries often includes the processing, drying, trading, and marketing of fish, amongst many other activities. Fish processing and trading in Ghana is often closely tied to territorial, cross-border, informal fish markets, which are complex and wide-ranging, and are vital for aquatic food security (Ayilu & Nyiawung, 2022). Reductions in fish landings, as well as broader economic and political factors, reduce income from fish earned and shape how, or if, women can pre-finance fishing trips.

6.3. Aquatic food 'markets-in-the-making' & cultural political economy

6.3.1 Understanding markets through performativity or Marx?

Much contemporary life is centred around markets. We sell our labour through a labour market, and markets are central to the production and distribution of goods and services (Spies-Butcher *et al*., 2012). However, markets come in a variety of forms, vary within differing cultural and societal contexts (Terra Nuova, 2016), and have also existed for thousands of years (Spies-Butcher *et al*., 2012). They all bear similarities in so far as they are an integral medium through which commodity distribution, exchange, and sales can be realized. Indeed, much anthropological literature details the "threshold of exchange" (Agnew, 1979) as related to varying reciprocal social forms of gift giving (Mauss, 2000) and ways in which debt relations have coalesced around other social relations such as marriage, friendship, war, religion, and government, to name a few (Graeber, 2012).

Despite the omnipotent nature of markets, their specific geographies have undergone relatively little attention (Berndt *et al*., 2020). This is because 'the market' is often understood as a totalizing, naturalised, and abstract entity (Ouma *et al*., 2013), where it is either a "grand destructive or grand empowering force" and is "rarely made an object of discussion itself" (Ouma, 2015, p.3). In neoclassical economics, markets tend to be treated "as natural and universal spheres of rational human conduct" (Cahill, 2020, p. 30), where a market is commonly understood as a "place or institution in which buyers and sellers of a good or asset meet" (Black *et al*., 2012, p. 254). As

such, neoclassical economics bears a distinct "lack of interest in the marketplace" (Callon, 1998, p.1). Contrastingly, in critical political economic approaches, markets are often understood to "befall and subjugate local actors to inexorable global forces" (Ouma *et al*., 2013, p. 227), leaving local actors with supposedly little agency in the face of such a monolithic market capitalism. Both approaches have been accused of exhibiting market fetishism, which tend to divorce the realm of exchange in markets from its relations to production (Cahill, 2020). This can mean that 'the market' is essentialised as solely constituting of prices and commodity exchange, without an exploration of how such commodities made it to market, and the details of how the market, in turn, configures social relations (see chapter 3 for a more detailed overview of debates regarding markets).

As part of the pragmatic, performative turn in understanding the complexities of markets, scholars in critical marketization studies have focused on how economic things become 'calculable' or defined as economic. They explore how economic 'things' become economic through particular metrics and languages (Çaliskan & Callon, 2009; Ouma, 2015), the materiality of economic settings and devices (Muniesa *et al.*, 2007), the performative capacities of economic knowledge (Callon, 1998), as well as the practical operations of "testing, critique and verification" (Muniesa *et al*., 2007, p.1).

Muniesa et al define a market device as something that configures "economic calculative capacities" to "qualify market objects," whereby "calculation is neither a universally homogenous attribute of humankind, nor an anthropological fiction. It is the concrete result of social and technical arrangements" (2007, p.5). A market device belongs to a broader entity known as an 'economic agencement' which is something "that renders things, behaviours, and processes economic" and not something that provides a definition of what 'economic' should mean (Muniesa *et al.,* 2007, p. 3). Performativity approaches to markets, such as the one outlined by Muniesa et al (2007), tend to take markets as "a (or even the) principal object of analysis" (Christophers, 2014, p.12). However, they also tend to avoid "theorization of capitalism as a coherent social system and of the place of market exchange within it" (Christophers, 2014, p.12). They thus often reject any sort of structural basis to markets, and see them as contingent upon agents, networks, and qualifications. Markets are likewise central to processes of capital circulation, yet in Marxian

political economic approaches they have often been ignored in lieu of a focus on production relations (Berndt & Boeckler, 2009; Harvey, 2012; Christophers, 2014).

6.3.2. Bridging the divide through cultural political economy?

A cultural political economic approach (CPE) as outlined by Sum & Jessop (2013) can help to navigate an understanding of both the structural tendencies and cultural contingencies of aquatic food markets 'in the making' in Ghana. I suggest that a focus on both the structural tendencies and cultural contingencies of aquatic food markets can help to illuminate the power dynamics at play in aquatic food systems. To do so, I explore how the making and rendering 'possible' of the economic imaginary 'financial inclusion' (due to oceanic and other capitalist accumulative crisis tendencies) is also intrinsically intertwined with non-market economic domains, such as susu.

CPE accounts for how dominant economic structures, such as capitalism, perpetuate power dynamics without falling into economic reductionism, while also considering the role of meaning making and discourse analysis (semiosis) without falling into cultural constructivism (Sum & Jessop, 2013; Sau, 2021). Cultural political economy 'governmentalises Gramsci and Marxianizes Foucault' through using insights from Marxian political economy, Foucault's (2000) notions of technologies of government and 'dispositifs' (loosely translated as device), and through bridging these two theoretical positions with Gramsci's (1971) emphasis on materiality in the production of cultural hegemony (Sum & Jessop, 2013). This means combining Foucault's understanding of the social technologies and devices that maintain the exercise of power with consideration of *why* this occurs through using insights from cultural political economy (Sum & Jessop, 2013).

The crux of CPE is that it is an analysis of the dialectical relationship between path dependency (structuration) and path shaping (semiosis) (Sum & Jessop, 2013). This means that CPE is a post-disciplinary approach that "adopts the 'cultural turn' in economic and political enquiry without neglecting the articulation of semiosis with the interconnected materialities of economics and politics within wider social formations" (Jessop, 2004, p. 159). Cultural political economy allows us to attend to capitalist structural crisis tendencies while paying attention to the economic imaginaries that are rendered 'real' in response to this crisis tendency, without falling into 'soft' economic sociology (Jessop & Oosterlynck, 2008). Economic imaginaries are often employed "to

justify underlying accumulation regimes" (Sau, 2021, p. 1024). Sum & Jessop (2013) outline how hegemony is produced through the variation, selection, and retention of economic imaginaries. I focus on how the economic imaginary of financial inclusion has emerged within the context of industrial overfishing in West African waters, and how it is selected and retained as a supposed means of economically developing small-scale fisheries.

Heeding the call that the question of markets should be an empirical matter, and not one predetermined by theory (Muniesa *et al*., 2007), this paper thus examines how susu forms an integral part of the assemblage of economic practices in small-scale fisheries systems and their respective aquatic food markets 'in the making' in relation to broader political, economic and environmental factors. It does so to critique the notion of financial inclusion in fisheries through showing how economic practices in small-scale fisheries do not belong to a binary of informal or formal, but are rather mutually dependent on each other.

Specifically, development agencies such as USAID and local partner NGOs try to reduce the complexity of Ghanaian fisheries systems, and the adverse consequences of industrial overfishing on food and livelihood, through advocating for the implementation of financial inclusion initiatives through certain market devices such as VSLA. I argue that market devices such as VSLA are a response to the inherent crises-prone nature of capital accumulation and overfishing in West African waters by industrial fisheries, which creates space for development-based economic imaginaries, such as financial inclusion, to take hold as a spatio-temporal fix to such crises. Understanding the importance of self-organised 'informal' susu practices in Ghanaian SSF can counter the dominant and prevalent assumption that small-scale fisheries need to be 'developed' through financial inclusion initiatives (Pomeroy *et al.,* 2020).

6.4. How are susu economics important to Ghanaian small-scale fisheries?

Susu is a commonplace and centuries old means of collective financial saving in Ghana (Hossein & Bonsu, 2023). Some have noted that it originates in the Yoruba peoples of Nigeria (Bonsu, 2022). Susu means 'little by little' or 'to plan' in the Ghanaian language Asante Twi (Hossein & Bonsu, 2023). Rotating savings and credit associations (ROSCAs), of which susu is a prominent example in Ghana, have long been noted in anthropological literature as key to economic practices

in West Africa, Africa, and to African-descended people elsewhere (Geertz, 1962; Ardener, 1964; Conteh, 2022; Hossein & Bonsu, 2023).

In Africa, ROSCAs, such as susu, have often been understood as part of the rubric of informality and bear a long tradition in African markets (Kinjanyui, 2014). Informal conditions of production, such as those commonly linked to African markets, have also been noted as a defining feature of postcolonial capitalism (Mitra *et al*., 2017). Due to the collective nature of susu, the moral and social dimensions of the scheme such as trust, reciprocity, and mutual aid are equally as important as the financial benefits of susu (Hossein & Bonsu, 2023). Susu appears to derive from a more traditional form of self-help (known as *nnoboa)*, which is a "form aggregating and exchanging labour among kinsmen [sic], peer groups, and neighbours," while susu is more often practiced by women (Awasu, 2012, p. 4).

Within Ghanaian small-scale fisheries, susu is an important means of raising capital for women fish processors & traders (as seen in figure 6.1), who often pre-finance fishing trips with food, fuel, and capital and who can own their own fish processing equipment (Ameyaw *et al*., 2020). Susu is vital for ensuring that women fish processors and traders can access credit, loans, and save money for their fishing businesses. Susu is woven into the fabric of everyday social life in Ghana (Bonsu, 2022) and is not only vital for funding fishing-related business costs but is also important for financing other costs such as funerals, and school fees. There are varying sizes and structures of differing susu schemes, ranging from informal to hybridised formal susu (as is seen in figure 6.2 below). Susu in all its forms is understood as a system where a periodic small sum of payment is made, for one participant to take out the money as needed, when it reaches their turn. Moreover, people who partake in susu schemes are often known to each other.

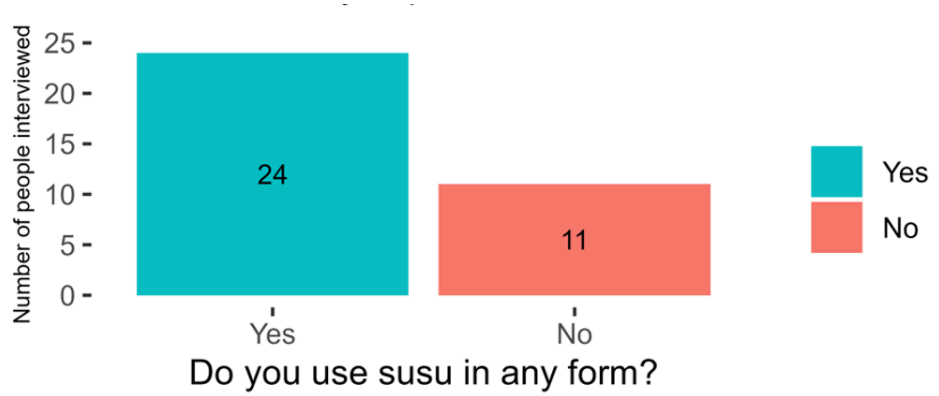


Figure 6-1 A summary of interview respondents who said they did or did not use susu in any form (i.e., hybridised or 'informal').

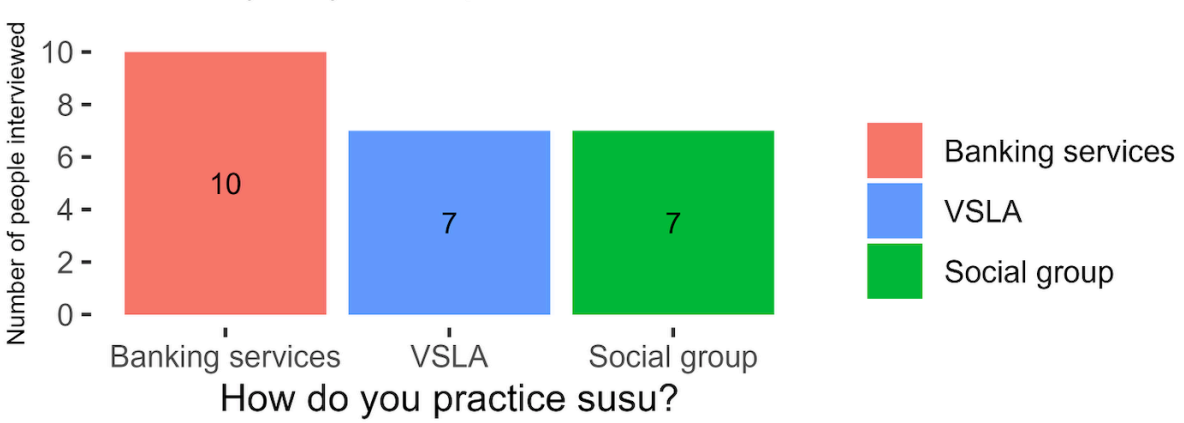


Figure 6-2 A summary of how interview respondents did practise susu in any form.

Power and wealth are accrued for women who work in the Ghanaian small-scale pre- and post-harvest sectors through entrepreneurial skills, access to capital, and familial relations, which enable a woman fish processor or trader to become a "fish mummy" and to hire the services other women fish processors to support the "fish mothers'" businesses (Ameyaw *et al.*, 2020). Some powerful women fish processors also own boats, or outboard motors, which enables them to ensure that they have direct access to fresh fish (Britwum, 2009). However, this dynamic can lead to power and control issues between male captains of the boats and fish processors/traders. As Osei, an NGO officer near Cape Coast recounts:

"when women get the money they buy all this fishing equipment, but they cannot use it to go for fishing, so they will give it to a man to handle it, to take care of it, that is why you don't see women owning, but most of them, most of the gears are from the women, the men are just caretakers"

Power struggles between fishermen and those in the post-harvest sector however can be better navigated by fish mummies, who are often related to the captain of the boat(s). However, this dynamic arguably still gives fishermen power over women fish processors and traders[16] because women cannot go out to sea themselves (Britwum, 2009). Disputes over fish are usually mediated by the Fish Queen (*Konkohene*), however since prices of pre-mix fuel and outboard motors have risen, combined with a dwindling fish catch, fishing has become an expensive and financially risky venture for women fish processors and traders and the Fish Queen's traditional power has lessened (Ameyaw *et al*., 2020). The gendered dynamics regarding ownership of fishing equipment and fish emphasise the importance of access to capital for women fish processors and traders, who, if they are able to access capital to invest in fishing trips, are then able to accrue security, power, and wealth (should the fishing trip be successful). For some then, collective self-organisation through susu is a vital means of saving and accessing credit.

6.4.1 Self-organised, 'informal' group susu

In a self-organised 'informal' group susu, interest rates are not typically calculated in the same way as they are in traditional banking, where profit through interest is accrued. As an example, as is overviewed in table 6.1 a microfinance banking institution in Cape Coast charges a 20% interest rate for a susu participant to take out a loan from their susu group collection. Contrastingly, 'informal' group susu members contribute a fixed amount regularly, and the total collected amount is then distributed among members over a specific period.

[16] This was also evident during my time conducting participant observation on Cape Coast beach, where I witnessed a fish mummy try to sell fish that her fisherman husband had already promised to someone else. This led to a large physical altercation on the beach, after her husband slapped her hard across the face.

The self-organised, 'informal' susu group usually functions through:

1) Contributions: Each member contributes a set amount at regular intervals (weekly, monthly, etc).
2) Pay-outs: The total amount collected during each cycle is given to one member often on a rotating basis.
3) Interest or profit sharing: If there is any interest earned from the pooled money (like if it is kept in a bank account), it might be shared among members based on their contributions or the cycle in which they receive their pay-out. The interest in this system is more about access to funds when you need them rather than traditional interest accumulation. Interest may also be charged if you wish to take out a larger sum of funds than you normally receive in your own pay-out. See table 6.1 below for more details.

	Self-organised, 'informal' susu	**VSLA**	**Banking services which offer susu schemes**
Is interest normally charged?	No (but dependent on loans and rules of the group)	Yes	Yes
Is it regulated by the state/NGOs?	No	Yes	Yes

Table 6-1 An overview of the key characteristics of susu and its hybridised forms.

Trust and communal ethics of solidarity and mutuality are vital for a well-functioning susu social group (Awasu, 2012). However, Hossein & Bonsu note that the success of susu has meant that there is "immense commercial pressures to formalize them" (2023, p. 117), and longstanding literature regarding the interplay between informal and formal markets in Ghana has noted increasing links between the so-called formal and informal finance sectors (Aryeetey, 2008).

Susu is not immune to hybridisation. There is, instead, a dynamic boundary (Qian *et al*., 2024) between the use of 'informal' finance such as susu, and other institutional financial practices such

as VSLA or susu bank loans, amid broader political, economic, and environmental changes in Ghanaian small-scale fishing livelihoods. Instead of viewing informal and formal financial practices as a binary, which is often the case in financial inclusion literature (Pomeroy *et al*., 2020), economic practices in Ghanaian small-scale fisheries span across a spectrum of 'formal' and 'informal' which are often mutually dependent. It is important to highlight the contributions of informal economic practices to small-scale fisheries systems, as this counters the dominant assumption that small-scale fisheries need to be developed through financial inclusion (Pomeroy *et al.,* 2020).

6.5. How is VSLA financial inclusion?

VSLA have become an accepted part of financial landscapes across the global South (Green, 2019). In 2012, it was estimated that an approximate 14.5 million people were members of Village Savings and Loans Associations initiated by development programmes (Malkamaki, 2015). Much of the literature regarding VSLA relates it to enhancing financial inclusion for those who are unable to access state-regulated banking systems (Hendricks & Chidiac, 2011; Boyle, 2017; Frimpong, 2020). Financial inclusion in this case means access to state-regulated finance mechanisms, whereby a customer can obtain a bank account and receive access to savings-credit, insurance, and payments, amongst other banking services (Nkunda & Manirakiza, 2022). VSLA emerged in 1991, led by the international humanitarian organisation Cooperative for Assistance and Relief everywhere (CARE), which began promoting a savings-led microfinance models a means of improving women's financial assets and skills (Hendricks & Chidiac, 2011). Here, CARE note that through harnessing "an ancient African practice of group savings," they improve financial inclusion and empower women, as, "for many, participation in a VSLA is the first step up in the economic ladder" (CARE, 2011).

Increased financial inclusion has been linked to increased economic resilience for fishing households (Pomeroy *et al.,* 2020). One of the reasons cited for financial exclusion in fishing households is due to rural banks and cooperatives tending "to induce over-indebtedness due to their goal of profitability" (Pomeroy *et al.,* 2020, p. 6). One of the ways in which to increase financial inclusion is noted as through developing social capital, as this is supposedly crucial to supporting "a process of learning through interaction with others" (Pomeroy *et* al., 2020, p.5).

Savings groups are touted as a way of developing such social capital, and it is argued that these groups should also be "linked to responsible financial service providers for deposits and opening of bank accounts" (Pomeroy *et al.,* 2020, p. 7) to promote financial inclusion.

In Ghana, VSLA are one of the initiatives recommended by researchers, NGOs and development agencies to mitigate the livelihood impacts of low levels of small-scale fish landings (Amadu *et al.,* 2021; Resonance, 2024). This is with the broader neoliberal framing of women fish processors and traders needing to "secure access to savings and credit" "to maximize profit" in their microenterprises or businesses (Torell *et al.,* 2015, p. 15). The implementation of VSLA in Ghana is seen by some as a market solution for collapsing small pelagic fish stocks (Resonance, 2024), and it is advocated for as a means of reducing livelihood vulnerabilities due to low levels of fish landings (Amadu *et al.,* 2021). VSLA however can foster resilience and education for fish processors and traders, many of whom have benefited from taking part in VSLA programmes (Okafor-Yarwood *et al.,* 2022).

VSLA are organised through post-harvest associations in Ghana. Post-harvest associations can be a group of anywhere from five to one hundred women (or sometimes men) fish processors and traders. The World Bank, international organizations like USAID, local partner NGOs, and fisheries government actors have been an integral driver in establishing such associations. Development agencies and NGOs can be understood as belonging to the state apparatus (Elyachar, 2005), and as such, legitimise and formalise economic practices such as VSLA. VSLA has been encouraged as part of the drive towards sustainable fisheries management and 'gender mainstreaming' in Ghana, under the auspices of the USAID Sustainable Fisheries Management Programme (Hen Mpoano, 2018) and the Sustainable Oceans Project funded by the Norwegian Agency for Development Cooperation (Quartey-Papafio, 2024). Encouraging collective action in the form of associations is believed to be beneficial for post-harvest fish workers, as it allows for the associations to take advantage of fish handling and hygienic fish handling training (Standen, 2025), and to better access credit and savings through VSLA. As an employee at USAID told me, VSLA is a:

"*tool where they put their money together and where everyone who is part of this will pay back. It's also another means of accessing funds to improve their facilities and also to even buy fish sometimes."*

The rationale behind VSLA is that access to informal or insufficient sources of credit and loans reinforces a cycle of over-dependence on natural resources, such as fish, for survival. This is because inability to access institutional finance means that there are few opportunities to diversify fishing livelihoods through loans or financial support (Hen Mpoano, 2018).

VSLA is usually managed by three executives of each association who are voted in by association members. Here, a savings box is locked with three different padlocks, with each of the executives holding one key for each of the padlocks. An accounts book is also made, under the responsibility of one of the executives. Payments into the box are noted, as well as withdrawals. VSLA members must attend training regarding financial literacy, including record keeping and how to calculate profit in their businesses (Hen Mpoano, 2018). A small amount of interest is also made on loans from the VSLA. For example, Emma, who is the head of a large association in Tema, told me that if a 1000 GHS loan is taken from the VSLA box, then 50 GHS will be paid in interest to their association. However, interest rates are independently decided by each association.

VSLA is based on the premise of susu, yet key differences lie in the fact that susu is not managed by appointed executives of an association, while VSLA is managed by executives. Furthermore, in contrast to VSLA, no interest is generally charged in self-organised, informal group susu schemes. VSLA allows for a formalisation of savings practices for small-scale fish processors/traders, in so far as VSLA is often supervised and legitimised by development agencies through accounting books (figure 6.3). It also allows for fish processors to be seen as legitimate businesspeople who are able to receive funding from NGOs.

As Angela, a fish processor and head of a women's association in Tema told me, "*This money we are making, we put it in the bank for NGOs to see that we are doing susu. We are paying our dues, so if an NGO wants to help us, they will see we are making money."* Angela also told me that she

also participates in the social group susu herself, so that she has the money for social events such as funerals.

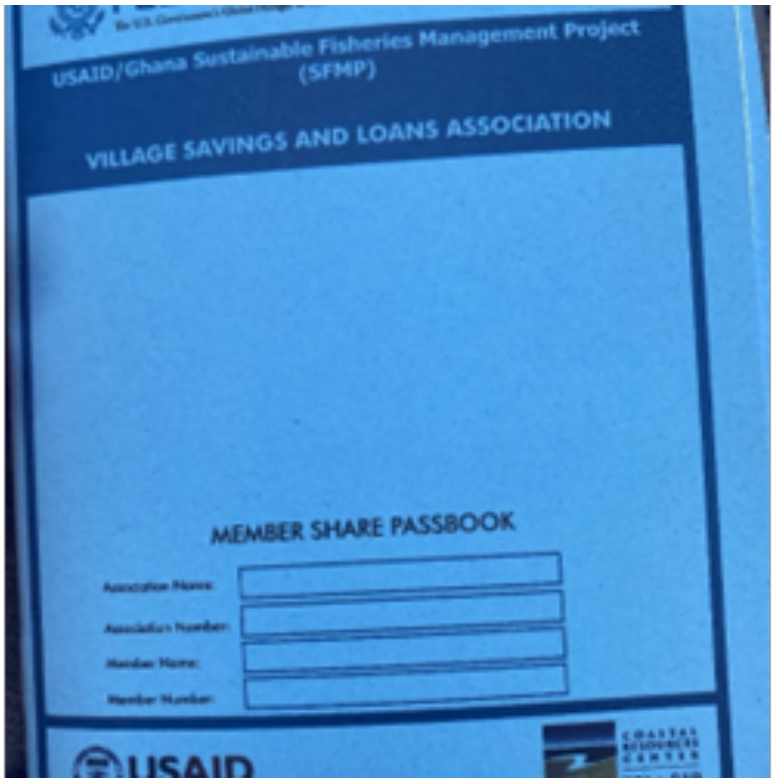


Figure 6-3 A picture of an accounts book used by VSLA schemes.

As is evident in the implementation of VSLA, much of the literature on financial inclusion in fisheries does not consider already existing economic practices, such as self-organised, informal group susu, and how these practices interact and overlap with more formalised financial practices, and structural tendencies within capitalism, such as ocean degradation and crises of industrial overfishing. The following section will explore how the cultural contingencies of aquatic food markets in the making, such as susu and its hybridised forms, interact with the structural tendencies in capitalism that shape such markets (Sum & Jessop, 2013).

6.6. Hybridised forms of susu amid changing pre- and post-harvest fish trading & processing livelihoods

One of the largest challenges that women fish processors and traders face in coastal Ghana is access to loans and credit (Ameyaw *et al*., 2020). Due to a lack of collateral, and due to the seasonal nature of fishing, many women fish processors and traders are unable to access traditional loans from banking systems. The gendered dynamics of fishing in Ghana affects the types of loans fisherfolk can receive and who can save and invest. Men in the fishing community in Cape Coast are much more likely to receive individual bank loans for larger costs, such as buying outboard motors or boats, as they are more likely to own collateral (Int. 39, bank employee). Yet women, who are most often petty traders, are often offered to take part in smaller group susu savings and loans schemes, as the group pressure to repay the loans "*makes them more trustworthy*" (int.38 bank manager).

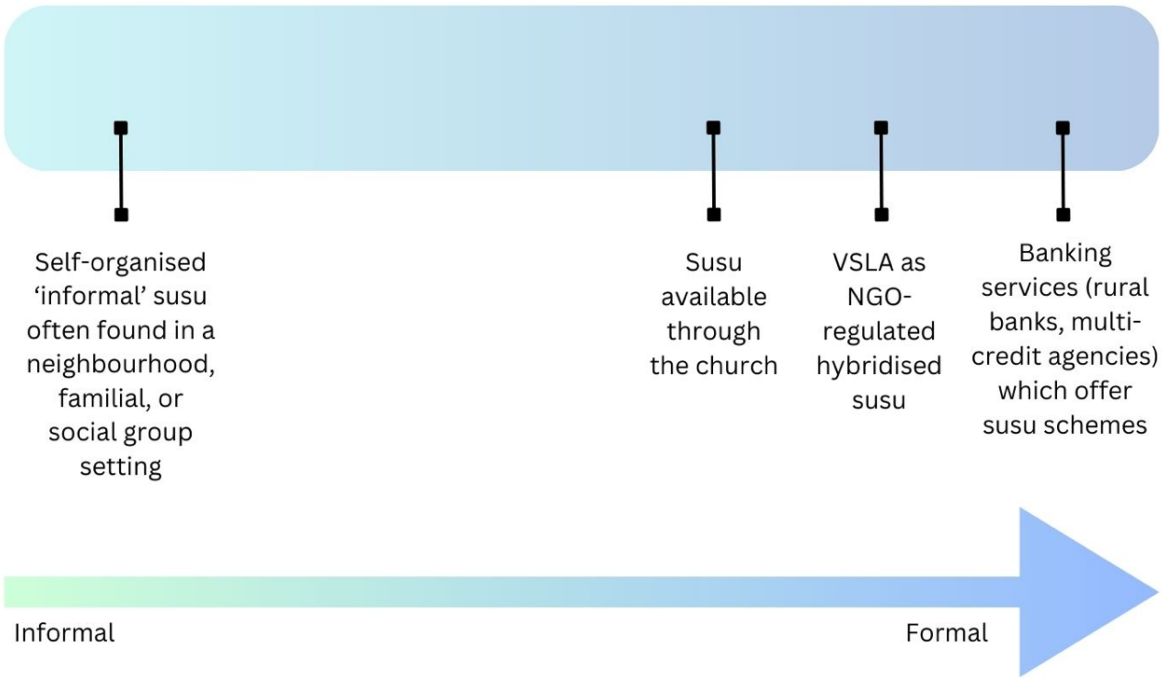


Figure 6-4 A visual depiction of the differing types of susu schemes available ranging from informal, self-organised susu to more formal, hybridised, state-regulated versions of susu.

Susu provides a low-cost, flexible, and immediately accessible way for women fish processors and traders to access loans or credit to pre-finance fishing trips in coastal Ghana. Esi, a fish processor who relies on buying imported fish from Tema harbour explains, *"it is useful, anytime I feel my business money is going down, I use susu for the money to reinvest back into my fishing business. It's become a backup for the capital I use for business."* Another fish processor, Hannah, who works in a marketplace in Cape Coast, sells herring she buys from cold stores in the city. She told me "*It [susu] has been helpful, because when I gave birth to my daughter, I didn't have any money for business, so it is that social group [susu] that gives me money for my business right now*."

As noted by Hossein & Bonsu (2023), the basis of susu is that it is rooted in mutually constitutive social relations and trust. A defining aspect of susu is that it is a participatory system, whereby rules can be changed through collective decision-making. The informality of susu is one of its greatest strengths, as such a system "can mobilize quickly in support of members and their community without recourse to formal structures" (Hossein & Bonsu, 2023, p.111).

Afi, a fish processor in Cape Coast, told me that she practises susu with her neighbours "*because my money was stolen by the walking bank, so I practise susu with the neighbourhood. I take the money back when it is my turn to reinvest in my business. I don't know of any associations. There are 20 people in the social group*." However, Afi also complements her participation in a social group susu with loans from a microfinance institution in Cape Coast which helps to supplement her business costs "*I take out loans or credit from ASA loans. This helps because the payment is for 6 months... it depends how much you take from them, so if you take 1000 cedis, you pay 55 cedis every week, and the 5 cedis is the susus money, then they take the 5 cedis as collateral until you are able to pay.. it is roughly 400 cedis in interest."* Social group susu however, if practised, was widely seen as more reliable than more formalised, hybrid forms of susu "*as I can get my money"* (Int. 35, Cape Coast), because participants are known to each other and trust each other.
It is also easier to obtain money outside of banking systems because of the high interest rates charged by microfinance and banking institutions. Adua, a fish processor in Tema asked if I would be able to loan her money and establish a bank with lower interest rates, as "*the bank loans, the interest is too high, so by the end of the year, you realise that you have used all your profits in paying loans*." For this reason, Adua notes that belonging to a VSLA helps "*us a lot because as*

we give loans to ourselves through the collective efforts, the interest on it is very low compared to the banks. Also, it is also helping us a lot to build a savings culture."

While susu is a flexible and important means of organising capital for pre-financing fishing trips in Ghanaian small-scale fisheries, the 'success' of susu and its hybridised forms such as VSLA, however, are also shaped by wider economic, political, and environmental factors, such as rising costs of fuel and stagnantly low small-scale fish landings.

6.6.1. Pre-mix fuel and lack of fish

Women are usually responsible for providing money for fuel for the outboard motors on fishing boats (Britwum, 2009). As is visualised in figure 6.5 below, perceived changes over time to the fishery, particularly with regards to a decline in fish landings, as well as rising pre-mix fuel prices, meant that some interviewed could not afford to contribute to susu and thus struggled to make enough money to finance fishing trips. Reasons for not taking part in susu were relayed during a focus group with fish processors and traders in Mumford, where the head of a post-harvest association explained "*we contribute 10 cedis weekly during the whole season until we open it and give everybody's money contributed to them. But since now they don't get petrol to go for fishing often, we have stopped the susu now*." (interview. 14).

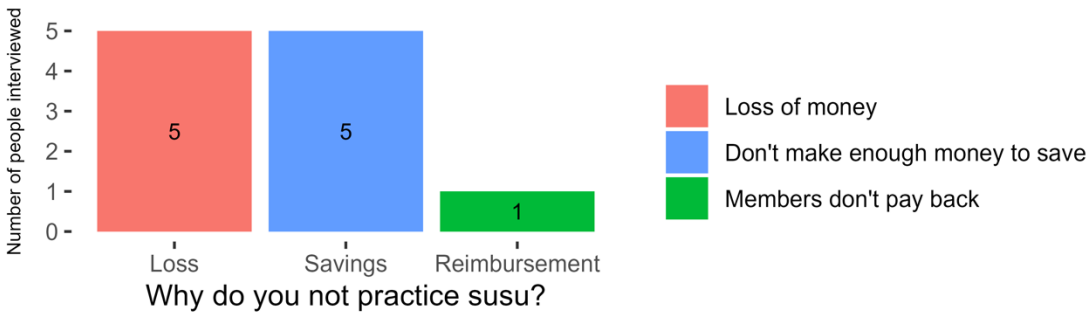


Figure 6-5 The reasons why fish processors and traders interviewed do not practice susu.

As another fish processor (int. 27) in Cape Coast told me: "*I don't practise susu. My husband died a long time ago. Whatever income I make after each sale of the fish, that is what I use to feed the family, and so I don't have enough to use for susu*." She further explained "*10 years ago, we didn't have enough fish, so it was then that I started to not have enough to put aside for susu."* Interview

53 also reflected how price fluctuations at the beach, due to a lack of fish and rising pre-mix fuel prices impacted upon her ability to participate in susu, "*the fishers come with their different prices every day, how will I be able to make profit*?"

Pre-mix fuel is a specific type of fuel used by artisanal fishing communities in Ghana and is a blend of oil and gasoline used specifically by two-stroke outboard motors (ACEP, 2020; Kwao-Boateng & Gyamfi, 2022). Pre-mix fuel is purposely made for fishermen and is highly subsidized by the Ghanaian government to boost productivity in the artisanal fishing sector (ACEP, 2020). However, access to pre-mix fuel is mediated by premix operating committees, who may hoard, appropriate, and increase the price of pre-mix fuel, thereby nullifying the benefits of government subsidies (Kwao-Boateng & Gyamfi, 2022). Furthermore, members of the governing political party benefit from the proceeds of appropriated fuel (Eriksen *et al*., 2018). Appropriation of pre-mix fuel supply by middlemen or pre-mix committees means that buying pre-mix fuel is often "shrouded in secrecy" meaning that fisherfolk must buy the fuel on the black market at often exorbitant prices (Kwao-Boateng & Gyamfi, 2022., p. 4).

As a fisherman in Cape Coast reflected, "*We don't get pre-mix to use in the canoes, for fishing, we work with canoes, nets, and outboard motors, so you can get all these things, but if you don't get the pre-mix, then you have to just leave the canoes, nets, outboard motors, and when you don't use them, they deteriorate."* Inaccessibility or soaring prices of pre-mix fuel have contributed to the high prices of fish sold at landing beaches, meaning that fishermen must increase the price of fish sold to processors and traders to cover the increase in fuel prices. As int. 16 reflected "*when I started the fish business in the past it was good. But now fish prices have become so expensive at the beach due to the high fuel prices. And it has made living here very difficult."*

Moreover, between 2017-2020 Ghana experienced a national banking crisis, one of the largest economic crises since Ghana gained independence from Britain in 1957 (Blankson *et al*., 2021). This led to the closure of 420 licensed financial institutions (Blankson *et al*., 2021), resulting in a significant decline in trust in the Ghanaian banking industry (Kamason, 2020). Ongoing economic crises in Ghana, led to President Nana Akufo-Addo to apply to the International Monetary Fund

(IMF) for a debt restructuring programme in 2022 and to formally declare a debt crisis in Ghana in the same year (Abotebuno Akolgo, 2023).

The collapse of numerous financial institutions around the country impacted on the trust that fish processors and traders had in susu schemes offered by these institutions. As int. 25 told me "*I keep my money in my home, my money was stolen by the walking bank, so those people sometimes take away my money, so because of that fear I don't keep my money with the bank I keep my money in my room*." Emmanuel, the head of an association in Apam, and the only male fish processor I spoke to, further added: "*we started the susu as a group and initially we were taking the money to the Paa Kwasi Ndum's Bank (GN Bank), then when it collapsed all our money was gone. The DAA* [a local partner NGO] *came in again to teach us on the village susu scheme and brought us the money box and the cards we will use. The box has three padlocks, so three different members keep the keys. The box is in my house and two members keep the keys in their houses and I also keep one."*

In the context of a scarcity of fish, fuel price fluctuations, and banking collapses in Ghana, VSLA has, however, not mitigated the lack of trust that some women fish processors and traders have in collectively saving. As Maria, a fish processor and another head of an association in Tema told me "*Before the NGOs came in, we did the merry-go-round susu scheme [assuming we are 5 friends, every week we all contribute 50 cedis, then one week we give to one person]. Now you really have to know the people, it's really difficult to trust anybody."* I asked her about the introduction of the VSLA scheme and how she and her association related to this scheme. She responded "*yes, an NGO came, but when they explained the type of susu they had [VLSA], we didn't understand it. When it's time for us to open the [VSLA] box we have to call them to come and supervise. I never understood this box dynamic. We smelt something fishy and did not agree with them*."

Now Maria says that it's harder to rely on people to continue to pay into susu schemes due to price rises and a lack of fish, and that the introduction of VSLA does not fundamentally change this dynamic of mistrust in Tema, "*Those boxes were meant to help the associations [not us]."*

Complex webs of debt and credit within small-scale fisheries mean that small-scale fisherfolk are vulnerable to macro ecological, political, and economic changes. Inability to access pre-mix fuel comes amidst low levels of artisanal fish landings, meaning that many fish processors reported not having enough money to participate in susu. Some perceived that the fishery may collapse due to trawler overfishing and high pre-mix costs, "*So if we don't take time this fishing will collapse. Now they don't get fish, now they don't get pre-mix*" (interview 11). Others noted the decline in catch due to fishermen staying longer out at sea "*the fish catches are declining. Now the fishermen keep long at sea but still don't bring a lot of fish*" (interview 15). Interview 19 reiterated how levels of catch have changed over time "*they used to draw a lot of fish from the sea, but now when you go you don't get as much as you want, now the fish is scarce, there is a great scarcity in fish now."*

Such broader environmental and economic factors significantly impact the ability for small-scale fisherfolk to take part in collective savings schemes whether within a social group setting, or within more formalised, hybrid version of susu available at financial institutions. Susu is widely seen as something which a fish processor or trader can pay into when sales are good ("*when I make good sales, I pay into susu*" (interview 17, Cape Coast). Susu in all its forms is highly dependent on trust and mutuality, and as such, broader economic and environmental factors, significantly impact who can pay into and derive benefits from the assemblage of susu economic practices in Ghanaian small-scale fisheries. The ability for small-scale fisherfolk to take part in susu is therefore relational to broader factors such as the ability to trust, the collapse of the financial sector in Ghana, trawler overfishing leading to low levels of fish landings, as well as high, and often, inaccessible costs of pre-mix fuel. These macro factors can all be understood, in part, as relational to the inherent contradictions of capital, particularly in the relationship between capital accumulation and 'nature' (Fraser, 2023).

7.7. Discussion: The importance of understanding how aquatic food markets are made in relation to the crises of capital

Performativity approaches to markets and economic practice (as exemplified by Law, 1992; Callon, 1998, Ouma, 2015), take the market as the principal object of analysis, to demystify market relations through empirical enquiry. While performativity approaches to markets provide a useful blueprint for understanding *how* markets are made in relation to varying cultural and social

contingencies, they can lose the specificity of *why* certain markets are engineered in the first place (Mahanty, 2019), and have been critiqued for not incorporating analyses of power into its approach (Cardwell, 2015). Cultural political economy (Sum & Jessop, 2013) allows us to attend to the structural nature of the effects of oceanic capital accumulation in the Ghanaian bottom-trawl industry, while also allowing us to pay attention to the different economic imaginaries and cultural contingencies which are fostered in small-scale fisheries.

Capital bears many inherent contradictions which can form periodic moments of 'crises'. Such crises are inherent to the continuing reproduction of capitalism (Harvey, 2014). In the dialectical and complex capitalist mode of production, periodic crises of accumulation serve to expand the circuit of capital (Marx, 2000). Marxist theories of the crises inherent to capital accumulation can help to understand the capitalist "contradictions and dilemmas [that] can be resolved through social fixes" (Sum & Jessop, 2013, p. 246).

One contradiction of capital is its internal contradiction between capital accumulation and 'nature' (Fraser, 2023). Fraser understands capitalism not just as an economic system which organizes economic production and exchange, but rather "a way of organizing the *relation* of production and exchange to their *non-economic conditions of possibility"* (2023, p. 81). What this means is that the non-economic conditions of possibility upon which capital relies to ensure its own reproduction, are the "natural processes that assure availability of vital inputs, including raw materials and sources of energy" (Fraser, 2023, p. 82). Fraser notes how 'nature' is positioned within capitalism as "devoid of value, but infinitely self-replenishing and generally available to be processed in commodity production" (2023, p. 82). The capital-nature relation, as such, is "a cannibalistic, extractive relation, which consumes ever more biophysical wealth in order to pile up ever more "value," while disavowing ecological "externalities"[17] (Fraser, 2023, p. 83). The nature-capital relation then, is mediated through capital's own class interests, so that capital can monetise and define 'nature' in its own terms through slicing and dicing it up into commodity forms and private property rights (Harvey, 2014).

[17] Harvey notes that ecological effects are often experienced by capitalist firms as 'cost-shifting' or what economists call 'externalities', which are defined "as real costs for which capital does not have to pay" (2014, p. 144).

In the oceans and seas, industrial fishing, too, presents many inherent contradictions between capital and 'nature' that cause periodic and necessary crises for the reproduction of capitalism (Mansfield, 2010; Campling & Havice, 2014; Longo *et al.*, 2015). However, while Harvey notes that capital's metabolic relation to nature makes it entirely possible for capital "to continue to circulate and accumulate in the midst of environmental catastrophes" (2014, p. 142), what is more apparent is that in the context of fisheries, it is small-scale fisheries, their modes of production, and their aquatic food systems that suffer in capital's ceaseless quest to accumulate profit.

Institutions such as the World Bank, development agencies such as USAID, and local partner NGOs in Ghana recognize that low levels of artisanal fish landings present large challenges and problems for Ghana's food security and Ghanaian fisherfolks' livelihoods (USAID, 2022; World Bank, 2023). However, the cause of the challenges that Ghanaian fisherfolk face in terms of both income gained from fishing/fish processing/trading livelihoods is often framed as due to a certain deficiency on the part of the small-scale fisherfolk, such as a lack of a savings culture (*"they also don't save, that is why we are introducing this VSLA"* Osei, NGO officer, Cape Coast), or due to the supposed 'open-access' nature of the fishery, and illegal fishing on the part of small-scale fishers (Afoakwah *et al.,* 2018) ("*because of greed and overpopulation"* Osei, NGO officer, Cape Coast).

VSLA, as part of the broader encouragement of financial inclusion for small-scale fishers, thus emerges as a spatio-temporal fix in the context of the crises of overfishing in West African waters. VSLA becomes a market device because it reengineers the social relations that underpin aquatic food markets through making them calculable, governable, and regulated by the state apparatus through NGO oversight (Elychar, 2005). Through a socio-technical framing regarding 1) a lack of savings culture, or a lack of access to finance and credit in small-scale fisheries as being the cause of livelihood difficulties faced by Ghanaian small-scale fisherfolk 2) the implementation of social-technological market devices (in this case VSLA) that reorder social relations to make them governable through savings training, finance workshops, 3) NGO oversight and legitimization of small-scale fisheries' finance, VSLA is presented as a social fix through the reengineering of ('informal' finance) market relations. Such 'informal' relations are vital to the functioning of Ghanaian small-scale fisheries and Ghana's aquatic food markets.

As such, financial inclusion economic imaginaries, such as VSLA, are a *temporary* social fix to mitigate the contradictions of the crisis of industrial overfishing. They risk ignoring that economic practices in Ghanaian small-scale fisheries are in fact a broad assemblage of 'formal' and 'informal' practices which are not simply binaries between financial inclusion and exclusion. Susu, in other words, is vital for alleviating the ecological uncertainties and financial instabilities experienced in Ghanaian small-scale fisheries. The idea that savings groups such as VSLA can improve the financial inclusion of fisherfolk (Pomeroy *et al*., 2020) vastly underestimates the resourcefulness and already long-existing economic practices which underpin Ghanaian small-scale fisheries systems and their respective aquatic food markets. It also contributes to a depoliticization of the inherent ecological, economic, and political crises facing small-scale fisheries, such as declining fish landings (Asiedu *et al*., 2021), recurrent economic crises in Ghana (Abotebuno Akolgo, 2023), and the impacts of rising pre-mix fuel costs (Ameyaw *et al*., 2020), which all contribute to rising fish prices and to impeding small-scale fisherfolk's livelihoods. Susu, especially in its social, self-organised form, should not be understood as something that is 'predatory' (Pomeroy *et al*., 2020) because it is not state-regulated. Susu should instead be understood as significantly contributing towards alleviating the effects of industrial overfishing in Ghanaian waters.

Fisheries and aquatic food systems are heavily dependent on the health of the ocean environment and are also dependent on a broad assemblage of economic practices. The dynamic boundary between informal and formal susu practices (Qian *et al*., 2024), reflects how the spectrum of susu practices in Ghanaian small-scale fisheries are in fact, mutually dependent on each other. As such, the temporal and flexible need for women fish processors and traders to access capital to pre-finance fishing trips is buttressed by susu, but threatened by broader economic, political, and ecological factors, which could undermine the importance of aquatic foods for Ghanaian small-scale fisheries. True financial inclusion for small-scale fisherfolk, therefore, would mean tackling the ecological and economic contradictions inherent to the crises of industrial overfishing in West African waters.

6.8. Conclusions

This paper has shown how small-scale fish processors and traders in Ghana navigate livelihood challenges caused by national economic crises, political challenges through the rise of fuel costs, and oceanic ecological crises caused by industrial overfishing, through utilising different forms of susu, such as 'informal' social group susu, or more hybridized forms of susu (VSLA) available through development agencies. Using the example of susu, this paper has critiqued the notion that non-state regulated financial services in small-scale fisheries are high cost or predatory (Pomeroy *et al*., 2020). It has shown that the use of 'informal' economic practices, such as a susu, are instead integral to the functioning of small-scale fisheries and their respective aquatic food markets in Ghana, due to its accessibility and flexibility for women fish processors and traders to access capital in order to pre-finance fishing trips.

Broader ecological, economic, and political dynamics are intrinsically relational to the dynamic assemblage of informal and formal economic practices in Ghanaian fisheries systems and aquatic food markets. Viewing the relationality of susu and its hybridized forms as an assemblage of economic practices which underpin small-scale fisheries systems, and how such practices are moulded by fisheries and ocean ecology, allows us to attend to the structural nature of the crises of industrial overfishing in the ocean (Mansfield, 2010; Sum & Jessop, 2013), while also allowing us to understand the cultural contingencies, interconnections, and dynamic interplay with 'non-market' economic practices, such as self-organised 'informal' susu (Qian *et al*., 2024). Future research should seek to relationally understand and explore informal economic practices in small-scale fisheries systems, so as to comprehend the underlying social, environmental, and economic structures which shape the production, exchange, and consumption of fish within aquatic food systems.

7. Chapter 7 - Towards food sovereignty: Market-induced marine degradation as a driver of market dependency in Ghanaian aquatic food systems

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7.1. Introduction

Small-scale fisheries are under multiple and intertwined threats. Environmental pressures due to overfishing (Longo *et al.*, 2015), initiatives which promote "blue growth" (Cohen *et al.*, 2019; Barbesgaard, 2015), and governance measures which favour the industrial fisheries sector (Okafor-Yarwood *et al.*, 2022), often coalesce to marginalise small-scale fisherfolk. Moreover, blue growth initiatives, which see the ocean as a new frontier for economic development, risk reproducing power inequities that further marginalise women in small-scale fisheries (Bennett *et al.*, 2021). Despite these pressures, small-scale fisheries still constitute a key source of food, nutrition, and livelihood for nearly 500 million people globally (FAO, Duke University, WorldFish, 2023). In West Africa, it is estimated approximately 6.7 million people depend on fish for their food and livelihoods (Belhabib *et al.*, 2015).

Despite being a key part of global food systems, fish and other aquatic foods[1] have often not been understood as food due to a traditional agricultural bias (Gephart & Pace, 2015) and are often overlooked when it comes to food systems analyses, policies, and investments (Bennett *et al.*, 2021; Tigchelaar *et al.,* 2022). However, in recent years there has been increasing scholarly attention to the issues of justice, equality, and sustainability within fisheries governance and aquatic food systems (Bennett, 2018; Mills, 2018; Cohen *et al.,* 2019; Gustavsson *et al.,* 2021). Literature also underscores the importance of achieving equity in fisheries through a food sovereign approach to fisheries, primarily because food sovereignty understands fish as food, rather than resource or commodity (Levkoe *et al.*, 2017; Baker-Médard & Faber, 2020; Quimby *et al.*, 2023).

For agriculture, the food sovereignty movement has become an important actor in recent years through advocating for the rights of small-scale food producers, who face marginalisation within capitalist, and increasingly corporate-controlled food systems (Clapp, 2021; La Via Campesina, 2021). Whereas food security approaches to food systems tend to focus on supply and consumption (Jarosz, 2014), food sovereignty social movements argue for more holistic understandings of food systems, through calling attention to how inequality and environmental degradation is produced through the food production *and* consumption nexus within capitalism (Wittman, 2023). Fisheries were included in the earliest assertions of food sovereignty (Pierrick, 2007), however research which examines the relationship between food sovereignty and aquatic food systems has lagged behind that of terrestrial food systems (Quimby *et al*., 2023).

This paper therefore contributes to exploring how food sovereignty can be used as an approach to aquatic food systems, while also reflecting on oft-critiqued aspects of food sovereignty, and how these critiques may relate to fisheries. To do so, it firstly builds on Levkoe et al.'s (2017) call to use a food sovereign approach as a means of understanding socio-ecological power dynamics in small-scale fisheries. Then, building on Wood's (2002a; 2002b) and Wach's (2021) conceptualisation of market dependency in capitalist systems, it argues that a focus on contextual, evolving capitalist inputs into aquatic food markets, which ultimately sustain market dependency, are a useful means in being able to understand processes of marine environmental degradation, agrarian change, and inequality in aquatic food systems. Focusing on market dependency and how it cyclically produces inequality and marine ecological degradation expands on a food sovereign approach to aquatic food systems. Approaching small-scale fisheries with a food sovereign lens allows for fish to be understood as food, enables a holistic understanding of the conditions of production *and* consumption in aquatic food systems and rearticulates the political nature of inequalities in aquatic food systems, due to food sovereignty's inherent critique of capitalist, corporate-controlled food systems (La Via Campesina, 2021).

Drawing on empirical data from Ghana, by examining interactions between women post-harvest fish workers and the Ghanaian industrial trawling sector, this paper shows that *capitalist marine exploitation* is a key driver in creating cyclical conditions for capitalist market dependency in

Ghanaian fisheries, with changes in the post-harvest link of the aquatic food chain reinforcing marginalisation of small-scale fisheries. In essence, changing and worsening marine ecological conditions due to capitalist marine overexploitation shape social relations on land in ways which can become conducive to the further expansion of capitalist market relations. It examines how changing socio-ecological relationships due to industrial overfishing in West African waters, and subsequent low levels of small pelagic artisanal fish landings (Asiedu *et al.,* 2021), impact the wider Ghanaian aquatic food system. Drawing from 63 qualitative semi-structured interviews and 4 focus groups, it explores the relationship between women fish workers and the industrial trawling sector in Tema, and how industrial trawling activities affect small-scale post-harvest workers in Cape Coast, with a specific focus on how the state-capital nexus (Tilzey, 2017) shapes social property relations in post-harvest fisheries. A focus on the role of capitalist market imperatives that compel market dependency in aquatic food systems helps to pinpoint specific factors which impede more equitable, just, and sustainable aquatic food systems.

Sections 2 and 3 of this paper give a brief background to Ghanaian fisheries. Section 4 outlines its theoretical framework, where it deals with theoretical concepts and contestations regarding aquatic food sovereignty, the state, and market dependency. Section 5 outlines methodology, and section 6 explores empirical data in more detail from Ghana. Section 7 then highlights the relevance of the post-harvest fisheries sector to marine-based capital accumulation and concludes with its relevance to food sovereignty debates.

7.2. Ghana's artisanal fishery

The artisanal fishery in Ghana is described as the cornerstone of food security for the country (Hasselberg, 2020). It relies on fish such as herring, anchovy, and sardine, otherwise known as the "people's fish" (Danquah *et al*., 2021). An estimated 10% of the Ghanaian population work directly or indirectly in the fisheries sector, approximately 3.2 million people (MoFAD, 2022). The small pelagic cross-border fish market remains a vital and demanded source of food and nutrition in Ghana and within neighbouring West African countries, despite the reduction in domestic fish landings (Ayilu & Nyiawung, 2022).

Labour in Ghanaian artisanal fisheries is generally gendered. While men almost exclusively harvest fish, women sometimes organise the pre-harvest sector [financing] and predominantly organise processes that occur from the landing of fish up until [domestic] consumption, which make up the post-harvest sector (Britwum, 2009). Once fish is landed by fishermen, women process the fish into a valuable, tradeable commodity and into its edible form.

In the post-harvest sector, who is able to access fish is mediated by factors such as age, class, and ethnicity. For example, 'fish mothers' are a key part of the artisanal fishing sector and can also own boats. They can pre-finance fishing trips through covering costs for fuel, gear, and food in exchange for direct access to the catch from the boat(s) they have pre-financed (Britwum, 2009). In general, they have power and leverage in the artisanal fish supply chain, due to possessing the financial and social capital to access the best prices and markets for fish. However, changes to the small-scale fishery due to industrial overfishing, amongst other factors, mean that some fish mothers are left in debt and unable to reinvest capital in the cost of future fishing trips (Acquah & Addo, 2011). This has meant that artisanal fishermen are increasingly taking control of their own earnings to ensure reinvestment of capital in the fishing boat (Quagrainie & Chu, 2019), impacting the gendered nature and role of women in Ghanaian fisheries.

7.3. The Ghanaian industrial fisheries complex

An industrial fishery is a "geographical area of operation of a complex of capitals whose form of organization is the firm and whose medium of operation is fishing vessels" (Campling, 2012, p. 252). The Ghanaian industrial fisheries complex comprises of the industrial trawling sector, as well as the semi-industrial and tuna subsectors. Legal frameworks regarding industrial fishing in Ghana are poorly defined (Danquah *et al*., 2021), leading to a lack of transparency regarding finance and ownership in the industrial sector. Broadly, it is estimated that 40% of incidences globally, of Illegal, Unreported, and Unregulated [IUU] fishing occurs in West African waters (FTC, 2022). Due to intensive industrial extraction, and other factors such as climate change, reported total Ghanaian fish landings have decreased since their peak in 1996 (2019 data in Polido *et al*., 2020; Nunoo *et al*., 2014). In crude numbers, total fish landings have decreased from 500,000 MT in 2000 to just 287,801 MT in 2014 (Danquah *et al*., 2021). The decrease in total fish

landings has led to an increased reliance upon fish imports to Ghana, with 343,000 MT of total fish being imported in 2021 (Taylor, 2022).

The industrial fishing sector is comprised of industrial trawlers, semi-industrial trawlers, and tuna vessels. As of January 2021, 76 industrial trawling vessels and 37 tuna vessels were operating in Ghanaian waters (MoFAD, 2022). The semi-industrial fleet is approximately 400-strong with the boats mostly being locally constructed. Semi-industrial vessels often use bottom trawl nets or purse seine nets, according to season (MoFAD, 2022). Notwithstanding the implications of IUU fishing, fishing in Ghana is still a lucrative business, generating approximately $1 billion in income annually (World Bank, 2019). Despite the significant revenue generated, illegal fishing methods are commonly practiced by industrial trawling vessels and are rarely penalised (EJF, 2022). One IUU fishing method is for trawling vessels, which are licensed to catch demersal fish, to use smaller net sizes so that they can illegally target and catch small pelagic fish (EJF, 2022). It is estimated that up to 46% of total trawler catch recorded in Ghanaian waters is bycatch (non-targeted fish unintentionally caught), and that this bycatch mostly consists of small pelagic fish such as herring, anchovy, and sardines (Teye *et al*., 2020).

Moreover, in recent years, NGOs and the Ministry of Fisheries and Aquaculture Development (MoFAD) have made efforts to stop the illegal practice of saiko. The practice of saiko involves trawling vessels illegally targeting small pelagic fish stock to sell to small-scale fishermen at sea. Saiko dispossesses small-scale fisherfolk of their livelihood, putting small-scale fishermen and trawling vessels in a dialectical collaborative and competitive dynamic with each other over small pelagic fish. As a result of IUU fishing in the industrial sector, saiko, and the growing demand for seafood, small pelagic fish stocks in Ghana have seen a consistent decline and stagnation in recent decades (Asiedu *et al*., 2021; EJF, 2022). All these issues impact equity, justice, and sustainability in Ghanaian fisheries, and have implications for Ghana's aquatic food systems and their relationship to food sovereignty.

7.4. Theoretical framework

7.4.1. Why fish food sovereignty?

Since its inception in the 1990s by La Via Campesina, the peasant-led food sovereignty social movement has grown to represent more than 200 million small-scale food producers worldwide (La Via Campesina, 2021). The call for food sovereignty by food justice activists has become a significant means of spotlighting inequities inherent within global food systems. While initially focusing on peasant struggles, in 2007 the World Forum of Fisher Peoples joined the struggle for food sovereignty in the face of increasing encroachment of ocean space by corporate interests (KNTI & WFFP, 2017). Despite this expansion of the movement, however, much of the conceptual analysis of food sovereignty remains focused on agriculture.

Food sovereignty is understood as a direct response to the increased corporate influence and control over food supply, production, and consumption (Patel, 2009; McMichael, 2015). As such, as a movement it highlights interrelationships between production and consumption patterns. Definitions of food sovereignty have changed over the last few decades. Recently, it has been defined as:

"*The right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods and their right to defend their food and agriculture systems*" (La Via Campesina, 2021, p. 1).

Fish as a part of food systems has not received a great deal of attention in policy and governance (Bennett *et al*., 2021). Fish are still subject to the power of global markets and commodity price fluctuations. It is estimated that globally, thirteen seafood corporations control 11-16% of marine catch and 19-40% of the most valuable stocks (Österblom *et al*., 2015). Furthermore, small-scale fisherfolk face increasing marginalization under Blue Economic initiatives (Cohen *et* al., 2019). This is because of an increased risk of dispossession, further marginalisation of women in fisheries, as well as broader environmental justice concerns, such as pollution and waste, amongst other factors (Bennett *et al*., 2021). Using a food sovereignty approach to understand how and why inequities occur in aquatic food systems aligns to broader political ecological approaches that study

how economic phenomena drive environmental changes, and can be characterised by "a normative political commitment to social justice and structural political change" (Perreault *et al*., 2015, p.8). Levkoe *et al* (2017) propose that a food sovereign approach to small-scale fisheries allows for an understanding of fish as food, rather than fish as resource or commodity. A food sovereign understanding of 'fish as food' opens the possibilities for recentring issues of power within aquatic food systems; something which is, in general, missing in dominant fisheries literature, and can be missing in aquatic food security literature. This is because dominant understandings of fish in policy literature often frame fish as an economic resource (Hubbard, 2014), a livelihood of last resort which is often associated with poverty (Onyango, 2011), or as a commoditized natural resource for conservation objectives (Bennett *et al*., 2021).

However, food sovereignty's inherent conceptual ambiguities have also led to critique. One example is the articulation of the 'peasant' or small-scale food producer, who has been framed as ecologically and socially dispossessed from their own means of production by corporate capital. The 'peasant turn' within the food sovereignty movement has been critiqued due to the absence of any analytical methodology and its inherent political stance (Bernstein, 2016). This conception of the peasant as opposed in practice and ideology to industrial, corporate forms of agriculture has often been articulated by Chayanovian inspired scholars such as Van Der Ploeg (2008). Critics of food sovereignty suggest that food sovereignty enforces too strict of a binary between an all-encompassing 'corporate' food regime as opposed to a romanticised idea of the 'peasantry' (Bernstein, 2016). This binary can ignore the complications that many small-scale food producers often wish to be "incorporated into larger commodity networks" (Jansen, 2015, p.213) and can obscure the class dynamics of 'peasant producers' (Bernstein, 2010).

A degree of conceptual ambiguity also clouds the contested aims of the movement. Holt Giménez & Shattuck (2011) note the varying trends that exist in food movements such as food sovereignty. They identify convergences between 'radical' and 'progressive' trends in food sovereignty, whereby the radical trend "seeks deep, structural changes to food and agriculture" (2011, p.128), and the progressive trend broadly seeks to "work on local production and processing of food and focus on creating new business models for undeserved communities" (2011, p. 125).

However, despite the contested aims of food sovereignty, its political positionality and strong theoretical and pedagogical grounding, especially in its critical relationship to capitalism, have led some scholars in the field of political ecology to adopt food sovereignty as an approach to researching food systems (Levkoe *et al*., 2017; Turner, 2020; Wach, 2021;). This is, importantly, approaching food systems *with* a food sovereign analytical lens to understand the politics of production and consumption in food systems, in the *absence* of explicit food sovereignty social movement activism. If the radical trend in food sovereignty calls for "structural reforms to markets and property regimes, and class-based, redistributive demands for land, water and resources" (Holt Giménez & Shattuck, p.115), then focusing on specific capitalist dynamics that shape aquatic food systems enables a critical understanding of the ways in which inequality and environmental degradation occur in aquatic food systems, and shines a clearer path for the realisation of the food sovereign aims of justice and equity for small-scale food producers.

This paper therefore makes use of the radical trend (Holt Giménez & Shattuck, 2011) within food sovereignty to scrutinize the politics of property in post-harvest fisheries systems, and the political struggles over surplus value and rent extraction (Campling & Havice, 2014). To do so, it utilises the concept of market dependency (Wood 2002a), to highlight specific processes of environmental degradation and social inequality in Ghana and how these factors propel market dependency on capitalist inputs, such as imported or trawler-caught fish, to aquatic food markets. A food sovereign approach to fisheries remains lacking if it does not address how capitalism shapes social relations in all sectors of the fishery, how it produces inequality, and how it furthers environmental degradation to sustain market dependency on capitalist inputs in aquatic food markets.

7.4.2. What is market dependency?

One of the defining social relational bases of capitalism can be understood as market dependency (Wood, 2002b; Tilzey, 2017; Wach, 2021). Market dependency can be caused by dispossession from the means of production, such as land or fish, which in turn forces a reliance on the capitalist market for basic means of survival and social reproduction. Wood suggests that the capitalist market can be constituted of social property relations based upon certain 'laws of motion' of capital, such as an incessant driving down of production costs, competition, increasing intensity of labour exploitation, and capital accumulation (2002b). Crucially, this is what distinguishes the

capitalist market from other non-capitalist markets. The capitalist market is not solely a mechanism of exchange and circulation, like other non-capitalist markets, but is made up of social relations that are reordered around the capitalist 'laws of motion' of *competition*, *exploitation*, and *accumulation*.

Market dependency therefore occurs when the basic means of social reproduction, such as food, are only able to be obtained through capitalist markets. While food may be sold at 'non-capitalist' markets, producers and consumers are not dependent on buying food from such markets for their basic means of survival, as they may still possess semi or complete access to their means of livelihood. The purpose of the capitalist market contrastingly, becomes centred around the imperative to realize exchange value, rather than realizing use value (Tilzey. 2024). The concept of food sovereignty remains arguably incomplete if it fails to confront these key social bases of capitalism (Tilzey, 2017).

7.4.3. Market dependency & the Ghanaian state

The relationship between state, market, and capital have been the subject of complex long-ranging debates, which are beyond the scope of this paper to directly deal with (Gramsci, 1971; Poulantzas, 2000; Lenin and Chretien, 2014). However, the role of the nation-state in facilitating the legal and political structures necessary for capitalism, and thus market dependency, is "historically, if not causally, connected" (Wood, 2002a, p.179). States (particularly former colonial states) have a long history in facilitating the establishment of capital relations, and today they remain "essential to maintaining and protecting capitalism" (Koram, 2022, p. 206). Market dependency in aquatic food systems is not only caused by dispossession of fish through concentration of corporate wealth and control over fisheries. Capital accumulation is also enabled by the state apparatus (i.e. through the setting of property rights) and can be understood as part of the state-capital nexus (Tilzey, 2017). In Ghana, state prioritisation of the industrial fishery through encouragement of Foreign Exchange earnings can be understood partly as due to the persistence of neocolonial hierarchies after Ghanaian independence from Britain, which has meant that the Ghanaian state is enmeshed within extractive and hierarchical structures of global finance (Nkrumah, 2009; Bernards, 2023; Akolgo, 2023). The development of the Blue Economy initiatives has further meant that the Ghanaian state prioritises Gross Domestic Product (GDP), increased formal employment, and Foreign Exchange

earnings through non-traditional exports such as fish (Ayilu *et al*. 2023). The 'mutual constitution' (Copley & Moraitis, 2020) of the industrial trawling sector and the Ghanaian state's encouragement of liberalizing non-traditional exports such as tuna and demersal fish has marginalised non-capital-intensive modes of production in fisheries, which has come at the cost of increased marginalisation of the small-scale fishery (Ayilu *et al.,* 2023).

It is illegal for a foreign industrial trawling vessel in Ghana to partner with a Ghanaian company under a joint venture according to the Ghana Fisheries Act of 2002 [Act 625], with a notable exception for tuna companies who can hold up to a 50% stake in a tuna vessel (EJF, 2018). It is known that Chinese fishing companies often use Ghanaian partner shell companies to obtain fishing licenses (EJF, 2018). However, illegal trawling activities in West Africa are driven by diverse and obscure shareholders, leading to a significant lack of financial transparency when it comes to holding the perpetrators of illegal industrial fishing to account (Kohonen & Daniels, 2023).

The capitalist market imperatives of intensifying productivity and growth for both state and corporation therefore belong to the capitalist state-capital nexus (Tilzey, 2017), which facilitates the accumulation of capital for and by the appropriating classes in the industrial fisheries sector and the Ghanaian state. The Ghanaian state's prioritisation of the industrial fisheries sector through licensing agreements and blue economic initiatives exacerbates tensions and allows convergences between differing social groups in the Ghanaian fisheries sector. Those who are still able to access fish via their own networks, and who practice non-capital-intensive forms of fishing, may be those who are most likely to lose out from the appropriation of fish through IUU fishing in the industrial trawling sector. The semi-proletarianization of small-scale fish processors due to uneven and unequal access to fish, generates a dependency on capitalist inputs to the Ghanaian aquatic food market. Those who own sufficient social or financial capital, and who have access to the supply of imported or trawler-caught fish, such as some fish mothers in the port city of Tema, may, on the contrary, benefit from the Ghanaian state's prioritisation of the industrial fishery through Blue Economic initiatives and trawling licensing agreements.

It is important to understand who gets to harvest, access, process, and consume fish, and understand *why* this may be so, if we wish to move towards equity, justice, and sustainability for small-scale fisherfolk; which is something the food sovereignty movement calls for. A food sovereign approach to fisheries enables a focus on the holistic interrelationship between production and consumption in aquatic food systems. Examining how the state-capital nexus (Tilzey, 2017) facilitates market dependency enables a greater empirical exploration of how inequities in the aquatic food production and consumption nexus occur, something which a food sovereign approach to fisheries calls attention to.

7.5. Methodology

To save repetition, methodological steps are outlined in chapter four.

7.6. Case studies from Ghana

7.6.1. Fish mothers, trawlers, and the cold store

This section outlines empirical data from fish mothers who work in Tema Harbour, a license owner in Tema Harbour, as well as fish processors and traders in Cape Coast. It builds on the premise that a holistic understanding of fisheries must include an understanding of the labour processes that underpin the creation of value across all sectors of the fishing industry (Campling *et al*., 2012, p. 188), including the post-harvest sector. To do so, it explores some empirical case studies and accounts of fish mothers in Tema, a Ghanaian trawler license owner, as well as case studies from smaller-scale fish processors based in Cape Coast. This is in order to empirically explore how and why a dependency on capitalist inputs in the Ghanaian aquatic food market is experienced by fish mothers, those who work for trawling companies, and small-scale fish processors.

Madame Efua is a prominent fish processor, having begun her work at aged twelve, where she worked with her mother. She used to own an artisanal canoe in Tema, and used to be a fish mother for a semi-industrial vessel. Due to dwindling fish stocks, it became more difficult for Madame Efua to regain the money she invested in the smaller-scale fishing trips, because the fishermen came back empty handed, or returned with smaller, less valuable fish. The cost of investing in

these trips without financial return or assurance led Efua to deal with the Ghanaian license intermediaries of the industrial trawlers in Tema harbour. As she recounted:

"*I used to work with some of the artisanal fishers. I used to pre-finance them so that when they return the give me the fish to sell. But you see, they could take a lot of money from us the fish mothers, without any formal contracts or arrangement of receipts with them. And that was risky.*"

Instead of dealing with smaller-scale fishers as she used to, the industrial trawlers in Tema allowed Madame Efua to pre-order fish through WhatsApp directly with the Ghanaian license owner in Tema harbour, while the trawlers are still a week away from docking. She pre-pays the money to the Ghanaian license owner at Tema harbour and is then supplied with a large quantity of fish, including small pelagic fish. I was shown a picture which summarised her order of approximately 5000 boxes of fish (including over 3000 boxes of small pelagic fish), which equated to a 676,000 Ghanaian Cedis up-front payment to the trawler company in Tema harbour [approximately $50,000 USD]. Madame Efua then distributes this (normally frozen) fish to her customers who own cold stores around the country, or to larger fish markets, such as Kumasi in the centre of the country. She went on to describe her business as:

"*Mainly based on trust, honesty, and prayers. Since mostly we have to sell to our customers on credit. There are some customers that I have worked with for the past 10 years that I don't even know where they stay. But when they buy on credit, they send the money after.*"

We asked her more about how she relates to the trawlers, and what the benefit of this is for her, instead of her previous business relationships with the semi-industrial and artisanal sector. She describes:

"*For the trawlers you make payment before they land. When they land you go and show your receipt, and they give you the quantity of fish you paid for. So, if they give you more then you will top up and if what you receive is less than what you paid for, they will give you the balance. So, you see the difference between the small boats and the trawlers? For the small boats, the initial*

deposit you give to them, they may not pay you back instantly or you may not even receive it. It was worrying to us the fish mothers."

Madame Afi is another owner of a cold store in the Tema area, and echoed the sentiments that Madame Efua expressed. She told us that the business that she has built up with the trawling vessels has helped her immensely:

"*when the trawlers are about to go for fishing, we give them money and when they come back, they will bring you the fish. Normally, it is the responsibility of the license owner to pay for the fish when they bring it, and they sell it to us before we also sell to others*."

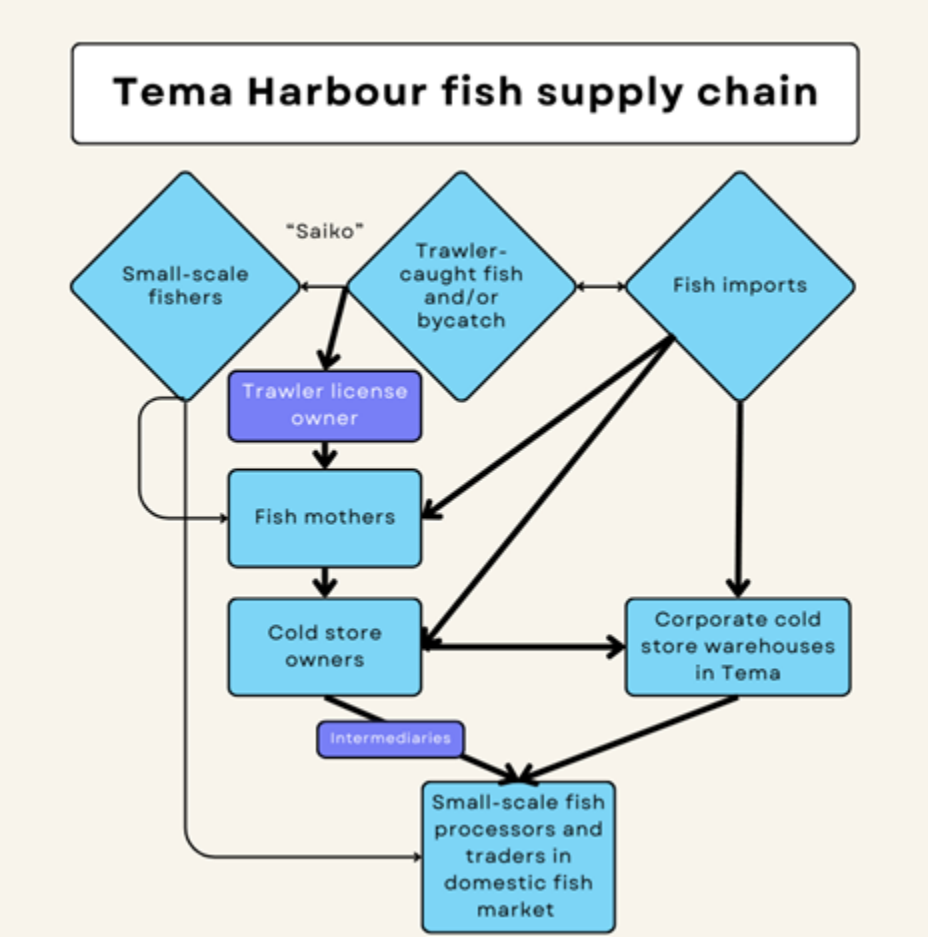

Figure 7-1 Simplified visual depiction of fish supply chain in Tema harbour

As shown in figure 7.1, the relationship that some fish mothers have built up between the trawling vessels in Tema is also vital for many cold store businesses around Ghana, as many of these stores are supplied by the fish these fish mothers buy from import companies or trawlers in Tema. Yet, large quantities of fish caught by trawlers combined with low fish stock is adversely affecting many small-scale fisherfolk's livelihoods. As Madame Efua described:

"*The trawlers have helped us to get a lot of fish…their arrangements with us as fish mothers is far better than what we were doing with the canoe fishers. However, their activities [trawlers] are somewhat worrying for our waters. They are destroying all the stones under the sea [bottom trawling], so it's affecting our local fishers. At first most of the fish that are landed by the trawlers now were being harvested by the canoe/semi-industrial operators. But now they don't get fish. So, you see the trawlers are helping us, but I think a time will come that we as Ghanaians will suffer from their activities.*"

While the existence of the trawlers in Tema has been beneficial for some, it has come at the cost of reduced supplies of fish for others who work in the fisheries sector. Some of the Fish Mothers, such as Madame Efua, have managed to appropriate the supply of trawler-caught fish through their connections with Ghanaian license owners in Tema harbour, thereby benefiting from supplies of scarce quantities of fish. However, intensification of trawling activity in Ghanaian waters, which has led to overexploitation of the marine environment, has caused a dependency on cold store fish by those who are not fish mothers, and who do not have the access to the Ghanaian trawling license owners in Tema.

7.6.2 The trawler license owner in Tema

This sub-section specifically discusses the role of a Ghanaian license owner for a Chinese trawler in Ghanaian waters. Here, the Ghanaian license owner is part of the Ghanaian-owned shell company and partnership with a foreign industrial trawling company. Kofi manages a license for a Chinese fishing company in Tema harbour. He tells us how the partnership with the Chinese trawling companies works and why he sells fish to the fish mothers:

"*When they [trawlers] go fishing, because they partner with us, usually the company that the trawlers partner with is mandated to take your fish. Then after, it's the responsibility of the company [the license owners] to look for buyers. That's why the fish mothers in Tema come, they are located to their respective vessels… you ask when the vessel comes and then the fish mothers are notified that you have your vessel coming in and then they meet you to take the fish*."

He describes how prices for a license to operate in Ghana are often expensive, and how it is the responsibility of the Ghanaian license owner to take on this cost. Kofi tells us how the license must be renewed approximately four times a year ("*but we don't talk about that so much"* he laughs nervously), and how this cost, amongst many of the other costs associated with running and maintaining a trawler, mean that if the supply of fish is lower than the demand for fish, the cost of the fish they sell onto the fish mothers at the harbour can soar*;*

"The cost is always rising, there's the equipment used on the trawlers, their nets, their winches. Everything that gets bought has to be replaced. So, if the cost to operate is going high, automatically you have to affect the price of the commodity, and that burden moves onto the consumer."

Due to the cost of running the trawlers, and the economic situation in Ghana, Kofi describes how fish mothers pre-finance trawling vessels and pay upfront costs, in order to secure their supply of fish from the trawlers. Payment from fish mothers ensures that trawlers can function and have financial guarantee, as well as providing payment for ship maintenance. As Kofi describes:

"*When you come as the fish mother, it's not like you just come and you just pay. We have one that pertains to you. Because when you prefinance, you have the leverage on that vessel, so when it comes there, the trawler doesn't have the right to give fish to another fish mother.*"

We asked Kofi how he felt about the declining fish stock in Ghana. He replied, firstly;

"*You can blame all the problems on the trawlers. What one trawler can take; the canoe might use about four months to take that amount. Because he is using the small wooden one with the engines, but the trawler just goes once."*

Reflecting on why the trawlers sell bycatch to fish mothers, Kofi continues:

"If they [the trawlers] take it [the bycatch] onto the vessel, they can't throw it back into the sea because the fish stock would be depleted, so we're selling it over here. Some of them started throwing the fish into the sea, because we're scared, if they bring it into port they will be arrested." He echoes frustration with what goes on at sea, amid the continued targeting of small pelagic fish through utilising improper mesh net sizes. ("*So why did they [the trawler captains] even take the net in the first place?*." Despite the recognition that trawlers illegally overfish in Ghanaian waters, Kofi asks; "*now we are all in the system, so who is going to sacrifice for who?"*

7.6.3 The role of cold stores and "salmon" in Cape Coast

Just over 100 miles to the west of Tema harbour, Ashante sells "salmon" on the streets close to Kotokuraba market in the city of Cape Coast. "Salmon" is confusingly the common name for herring, a popular and often-consumed small pelagic fish in Ghana. Ashante owns a business in Cape Coast and tells me how she goes to Tema harbour every two weeks to buy the "salmon," as well as sometimes tuna from the fish mothers in Tema harbour. She tells me she has been buying her fish from the same fish mother in Tema for over thirty years. I asked her why she is not able to buy the fish from the industrial trawling and tuna vessels herself. She responded:

"*The men on the trawling vessels are not allowed to sell to me, but they are allowed to sell to those fish mothers who are affiliated to the cold stores in Tema*."

I asked Ashante what challenges she faces in her work and why she prefers to buy her fish from the fish mother in Tema instead of from the artisanal fishermen at the beach in Cape Coast. She said:

"*At first when I started this business, there was a lot of fish and the prices were low. Business was booming...but now, the prices are too high! Sometimes when those boats come in there is no fish so I cannot buy any fish from the fish mothers. It is affecting my business, but when the prices are higher* [than the trawler-caught fish] *at the beach [*in Cape Coast or Elmina] *then I get a lot more customers. A lot of people are interested in the salmon, so I cannot quit."*

Cheaper prices and greater availability of fish in Tema harbour meant that Ashante saw buying "salmon" from Tema as more profitable than buying fresh fish from the small-scale fisherfolk at the local beach.

Hannah is another fish processor who mostly sells "salmon" in Cape Coast. She is not a cold store owner and has been selling salmon and tuna for four years, mostly around Kotorukaba market. She tells me how she goes to Tema harbour to buy cartons of fish herself from the cold stores there, and then transports it back to Cape Coast to sell on the streets. I asked her why she does this. She responded:

"*the price at Tema was not as expensive as buying it here, but now it is very expensive at Tema. With the beaches around here*, *we don't get enough fish, most especially the type I sell (tuna and salmon).*"

She goes on to say:

"*The biggest challenge is financial right now, because of the high rate of the inflation and the dollar, what I am doing for the business is now not enough compared to when I started.*"

A lack of fish availability at the Cape Coast beach, as well as increasing prices of fish in Tema harbour have put a financial squeeze on Hannah. Fluctuating fish prices due to inflation, fuel accessibility, and lack of fish availability mean that fish processors like Hannah are affected first, which causes a greater dependency on cold store imported/trawler-caught fish, as it is deemed as more consistently available and stably priced than the fish caught by the small-scale sector. Smoking and selling trawler-caught/imported fish is a vital means of livelihood for many fish

processors in Cape Coast, who have sought to capitalize on the supposed cheaper opportunities for business through selling fish from Tema, in the context of declining fish availability and fluctuating prices in the small-scale sector.

7.7. Discussion: Fish and Capital accumulation

Markets are constantly being remade (Ouma, 2015). However, certain compulsions within capitalism, such as the drive for profit maximization, the intensification of labour productivity, and the imperatives of competition (Wood 2002b), reorder social property relations (sometimes violently) to create and sustain capitalist market dependency. While capitalist land-based social property relations and concepts have often been transferred to understandings and social orderings of our seas and oceans (Campling & Colás, 2018), this paper focused on how certain marine capitalist social property relations in the form of marine trawling activities, in turn, impact upon and are related to smaller-scale post-harvest social relations on land.

Capital accumulation in the form of trawler intensified overfishing has affected the social metabolism (Marx, 2000) of nature-society relations between land and sea, not only impacting small-scale fishing practices at sea through the practice of 'saiko' (EJF, 2022), but by also affecting land-based post-harvest fishing practices. In this case, industrial trawling intensification in Ghanaian waters, combined with low levels of artisanal fish catch, has caused an increased market dependency on trawler-caught fish (sometimes including bycatch) and imported fish for those in the post-harvest sector; a sector which is vital to meeting regional aquatic food need (Ahwireng, 2024).

Trawler overfishing exacerbates social and economic inequities in the smaller-scale post-harvest sector. Oceanic capital accumulation in the form of trawler overfishing dispossesses some small-scale fish processors and traders from their direct means of livelihood, meaning that they become more vulnerable and subject to the global prices rises of fish, pre-mix oil (for boat engines) and external shocks such as inflation, and paradoxically become more reliant on trawlers and other capitalist inputs for their own social reproduction. As explained by the trawler license owner Kofi, for trawling companies to maximize profit, they overfish and sell bycatch to fish mothers, such as Madame Efua, who are able to benefit from this arrangement. However, as shown with the fish

processor, Hannah, in Cape Coast, trawler overfishing shapes social relations in aquatic food markets through creating an increased dependency on cold stores instead of on the coastal artisanal fishery. Viewing these examples through the lens of food sovereignty enables a holistic understanding regarding how capital accumulation in the form of trawling activities (production) *intrinsically shapes and creates* inequities in Ghanaian aquatic food markets (exchange & consumption), which then further compels a dependency on capitalist inputs to aquatic food markets.

Understanding processes of capital accumulation and how it creates and sustains inequities in aquatic food systems should therefore be central to aquatic food sovereignty literature. However, oceanic capital accumulation differs from that of land-based accumulation due to the biophysical constraints of the oceans. For example, a unique feature of capital accumulation at sea, such as the use of Flags of Convenience (FoC), (where a ship will fly a different flag to its original country of origin allowing it to dodge tax and regulations) means that the ship becomes a "floating platform of production" where, "in contrast to factories and fields, fishing circumscribes physically the labour process" in order to "transcend jurisdictions in various ways" (Campling & Colás, 2018, p. 785). Campling & Colás (2018) explain that the divorcing of production from jurisdictions (something which cannot happen in the same manner on land), can be done legally through FoC or geographically, through simply following fish between EEZs or in the High Seas.

Enclosure of the land has been an integral and historically relevant necessity to capital accumulation (Marx, 2000). However, the enclosure of the oceans has not historically occurred in the same manner. Enclosure of the oceans was consolidated with the implementation of UNCLOS (UN Convention on the Law of the Sea) in the 1980s, which meant that the state could garner rent through granting fishing licenses and access within its 200-nautical-mile Exclusive Economic Zone (EEZ). EEZ fisheries can be understood as state property, and such property can be "a site of social struggle over surplus value" (Campling & Havice, 2014, p.709).

The Ghanaian state therefore facilitates oceanic capital accumulation through the setting of property rights in its EEZ, as well as through trawler licensing and access agreements. However, it is illegal for non-Ghanaian trawling companies to fish in Ghanaian waters (excluding the tuna

industry) (EJF, 2022). Here, instead of the use of FoC, complex financial and ownership patters often facilitate the creation of 'Ghanaian' shell companies, who in theory, own the trawling vessel and are responsible for its license to fish in the Ghanaian EEZ. Ghanaian shell companies allow for the divorcing of production from jurisdictions in much the same way that FoC do, due to their complex and opaque financial and ownership patterns, and because they are not the ultimate beneficiaries of the profit made from the trawler. The creation of 'Ghanaian' shell companies by foreign fishing entities enables a bypassing of Ghanaian law regarding foreign involvement in trawling vessels, facilitates maintaining foreign fishing efforts in Ghanaian waters, and enables a lack of accountability regarding illegal trawling fishing activities.

The degradation of the marine environment through overfishing is therefore enabled through state-capital nexus (Tilzey, 2017). Small-scale fisherfolk are not solely marginalized in Ghana through raw competition for fish but are also marginalized through state licensing arrangements which benefit the industrial trawling sector at the cost of the small-scale sector. Trawling companies' drive to maximize profit through, in this instance, the sale of bycatch and other trawler-caught fish to Tema fish mothers, and the use of shell companies in Ghana, represented by license owners like Kofi, deliberately obscures the financial arrangements behind who ultimately benefits from industrial trawling in Ghana.

These examples show how key the state is for oceanic capital accumulation as well as political struggles over rent and surplus value (Campling & Havice, 2014). Yet, in food sovereignty literature, a general focus on the role of the 'local' and the 'global' has neglected the role of the nation-state (Clark, 2016), despite the market being "constructed in large part by states" that establish "international agreements and national legislation that impose the neoliberal agenda" (Otero, 2012, p. 284). A food sovereign approach to fisheries should therefore centre an understanding of how capitalist market dependencies are facilitated by the nation-state, as part of the state-capital nexus (Tilzey, 2017). In this case, this means how, through trawler licensing, the Ghanaian state facilitates the overexploitation of Ghanaian waters, which causes a market compulsion for fish processors to buy fish from capitalist inputs to sustain or better their livelihoods.

A food sovereign approach questions inequity and injustice in aquatic food systems and is attentive to "the social and political configurations around *power* over food." (Patel, 2012, p.1). Focusing on capitalist market dynamics in the Ghanaian post-harvest fishery, and the tensions between fish as food and a resource for capital accumulation, suggests the value of a food sovereign approach to fisheries, which enables a holistic exploration of socio-ecological power dynamics inherent within the production *and* consumption of fish (Levkoe *et al*., 2017; Wittman, 2023).

While the food sovereignty movement is an umbrella organisation for differing interests and organisations, this paper has understood food sovereignty as an anti-capitalist radical movement (Tilzey, 2017) and argued that a food sovereign approach to fisheries must include an analysis of how capitalism shapes social property relations in all sectors of the fishery, and therefore aquatic food production and consumption. As theorised by Wach (2021), building on Wood (2002a; 2002b), understanding the capitalist imperatives that drive capitalist market dependency is needed to point to clearer pathways to an anti-capitalist, radical food sovereign future. Confronting how capitalism produces and sustains inequities and environmental degradation through identifying situated capitalist inputs and outputs in aquatic food systems, and how these are facilitated by the state-capital nexus (Tilzey, 2017) can empirically enrichen and expand upon a food sovereign approach to small-scale fisheries.

7.8. Conclusions

This paper has explored the themes of market dependency and food sovereignty in terms of the capitalist dynamics that shape aquatic food markets in Ghana. Through the empirical examples of the impact of trawler marine activity on the Ghanaian post-harvest sector, it has examined the complexities of socio-ecological dynamics in Ghanaian aquatic food systems. It firstly utilised food sovereignty as an approach in which to understand specific capitalist dynamics in aquatic food systems *in the absence of a fish food sovereignty social movement*. Understanding complex food systems with a food sovereign approach builds upon a more holistic, socio-ecological, and political understanding of inequities in the aquatic food production and consumption nexus.

Secondly, to analyse how capitalism shapes social property relations, inequities, and environmental degradation in aquatic food systems, this paper has utilised Wood's concept of

market dependency, which it suggests is an integral component of capitalist social reproduction (2002a; 2002b). It has explored how specific capitalist logics such as the driving down of production costs and the maximization of profit in trawling companies have impacted the small-scale post-harvest sector on land, through co-opting a section of the post-harvest sector [some fish mothers] into the appropriation of scarce access to small pelagic fish. It has also emphasised how marine environmental degradation through trawler overfishing has pushed some small-scale fish processors and traders into a greater dependency on buying capitalist inputs such as cold store imported/trawler-caught fish to sustain their livelihoods. This has subjected them to the whims of the international market through fluctuations in the value of the Cedi and fish supply, and to the vagaries of the illicit sale of trawler bycatch to the fish mothers in Tema. Trawler overfishing thus becomes one significant dialectical driving factor in influencing greater capitalist market dependency in Ghanaian aquatic food systems.

Combining both a critical analysis of how capitalism shapes aquatic food systems through market dependency (Wood 2002a; 2002b) and what this means for the potential for food sovereignty (Wach, 2021), is a useful means of moving towards potential pathways to equitable and sustainable aquatic food systems, something which the food sovereignty movement and increasing fisheries governance literature calls for. This paper has therefore specifically explored the capitalist dynamics at work in the Ghanaian post-harvest sector and their relation to aquatic food markets, to make clearer the potential for the realisation of just, equitable, and food sovereign Ghanaian aquatic food systems.

Chapter 8 – Discussion & conclusions

This conclusive section will detail how I accomplished my research aims and answered my research questions. It will also outline my main theoretical and empirical contributions from each of the chapters. I will then end with reflections on the limitations of my research, a summary of my research contributions, an outline of a potential future research agenda, and some concluding remarks.

8.1. Introduction

The health of the oceans and its marine life has arguably never been more important. Indeed, today the oceans are the world largest carbon sink, play a critical role in annulling climate change impacts, and capture approximately 25% of carbon dioxide emissions[18] (DeVries, 2022). Yet, capitalist-induced climatic change, the development of the ocean as the last 'economic frontier' in the blue economy (Barbesgaard, 2018), and the proliferation of marine overexploitation in industrial fisheries (Mansfield, 2010) means that small-scale fisherfolk who rely on fish for food and livelihood face increasing marginalisation (Cohen *et al.,* 2019). The growth of aquatic food trade, geographical and technological expansion of fishing fleets, and the rising evolution of the aquaculture industry, means that who controls fisheries production and exchange is changing, amidst increasing concentrated ownership over major wild-caught fisheries stocks (Österblom *et al.,* 2015; Arthur *et al.,* 2022; Gephart *et al.,* 2024).

Furthermore, the emphasis on aquaculture is often presented as an apolitical solution to aquatic food insecurity (i.e., FAO, 2024). This trend is highly worrying, as it negates the role of political, economic, social, and environmental factors in shaping inequities in aquatic food consumption, further marginalises small-scale fisheries and their contributions (Basurto *et al.,* 2025), and has the potential to funnel power and control over fisheries production into fewer (corporate) hands (as is seen in agriculture, Clapp, 2021)). The securitised notion of fish as food needs to be expanded upon urgently in research and policy to incorporate how the social, economic, and political contexts in which fish are produced and exchanged shapes aquatic food insecurities.

[18] Which leads to ocean acidification.

I have contributed to knowledge regarding how power dynamics shape fisheries socio-ecological relations through detailing *how* and *why* inequality and environmental degradation occur in Ghanaian aquatic food systems. Through identifying and analysing the social, environmental, and economic interrelated processes that go into making aquatic food markets, I have drawn connections through showing *how* production dynamics in aquatic food markets are interrelated with fish market exchange patterns (and vice versa). I have also shown *why* this may be the case through exploring how capital's contradictory relationship with fisheries, and the ocean environment, spawns the remaking of aquatic food markets in the Ghanaian small-scale pre- and post-harvest sectors. This thesis has therefore responded to calls for centring power and politics in our understandings of food and nutrition inequities in fisheries (Hicks *et al*., 2019), a feminist political economic approach to labour in fisheries (Williams, 2019), and has also built on broader heterodox political economic approaches to aquatic food systems and fisheries (De Schutter, 2019).

I have also centred ethical considerations throughout this research process and have questioned the politics of fieldwork in the neoliberal university in relation to my own in Ghana. I have explored how safety fears, gendered, health, and racialised experiences intersected with my fieldwork and research process. I have sought to situate how I participated in the racialised hegemonic power structures which perpetuate colonial legacies and inequities, with particular reference to researchers from the global North conducting research in the global South.

In this doctoral thesis, I have therefore fulfilled the stated and interrelated contributions I set out in the introduction. These were:

1) *To advance understandings of the gendered implications of industrial fishing in SSF*

Throughout this PhD thesis, I have advanced critical knowledge regarding how the effects of industrial (over) fishing shape gendered fish production and market exchange dynamics. To grasp the complexities and interrelationships between the production of fish and its exchange in Ghanaian markets, as well as the gendered nature of the Ghanaian fishery, throughout fieldwork I explored how and by whom fish was bought, processed, and then sold 'onwards' in Ghanaian coastal small-scale fisheries. Importantly here, I note that the effects of industrial fishing

exacerbate pre-existing power relations and inequalities along intersectional lines (such as class and culturally defined hierarchies) within the post-harvest sector. This means that fish mothers in Tema are more likely to be able secure their livelihoods than a fish processor who sells fish bought from a cold store in Cape Coast. Those who belong to associations are often 'elites' in fishing communities (Interview 3 with government employee). As such, while there are gendered effects of industrial (over) fishing, these effects also fall along intersectional axes, which only serves to exacerbate inequalities in the production and exchange (and potentially consumption) of fish.

A critical and heterodox approach to deconstructing markets in aquatic food systems is under researched in social scientific literature, potentially due to a masculinist bias in fisheries research (Basurto *et al.,* 2020). I have taken a step towards countering the prevalent assumption that the market is a naturalised and neutral entity 'out there,' which simply mediates supply and demand dynamics in aquatic food systems. I have done this through showing how the aquatic food market in West Africa is inherently gendered and is imbued with a heterogenous assemblage of multiple dynamic environmental, social, and economic contingencies. I have also shown the significant amount of labour that goes into the making of aquatic food markets in Ghana.

2) *To move towards a food sovereign approach to fisheries.*

I have advanced the established but tentative relationship between food sovereignty and fisheries in academic literature (i.e., Levkoe *et al.,* 2017) through arguing that current academic literature detailing the relevance of food sovereignty to fisheries omits how capitalism perpetuates inequity in fisheries socio-ecological relations. As a means of building on a critical food sovereign approach to fisheries, I centre how the crises and contradictions inherent to industrial fisheries shape the dynamic and heterogenous assemblage of aquatic food markets 'in-the-making', and the governmental effects of these markets on small-scale post-harvest social relations. I have centred how capital's contradictory, dialectical relationship with the ocean and 'nature,' facilitates further expansion of capitalist social relations through market dependency and market-led development initiatives in Ghanaian small-scale fisheries.

In chapter 7, I then show how the market is a central organising principle in the expansion of capitalist relations in Ghanaian aquatic food markets through the notion of market dependency

(Wood 2002a; 2002b). Here, I show how industrial marine overexploitation creates a market dependency on capitalist inputs, such as fish imports or trawler bycatch, into Ghanaian fisheries. What I mean to show here is that expanding a focus from fisheries production (i.e., trawlers) to where fish is bought and sold, can better illuminate how capitalist relations shape all sectors of the fishery and its respective aquatic food markets. This enables a better understanding regarding how capitalism continues to compel aquatic food producers and consumers to partake in its organisational, exploitative system. Focusing on the complexities and contradictions of industrial fisheries and their effects on small-scale fisheries could more clearly illuminate the pitfalls and potentials for aquatic food sovereignty in small-scale fisheries.

3) *To develop theoretical understandings of the structural tendencies and cultural contingencies of aquatic food markets through cultural political economy.*

My contribution to research has been to look through the window of aquatic food markets to take in the view of the complex political, social, economic, and environmental processes that constitute Ghanaian small-fisheries and their food markets. Cultural political economic theory (Sum & Jessop, 2013) has enabled me to understand the structural crises tendencies of industrial fisheries in capitalism, as well as the heterogenous cultural contingencies and imaginaries that subsequently spawn from such crises. I have always importantly situated the complex processes that go into the making of aquatic food markets in relation to capital's internal contradictory relationship with the ocean and its fisheries. I have also taken the governmental effects of markets seriously (Ouma, 2015), to comprehend how they restructure Ghanaian small-scale social-property relations.

I have made a theoretical contribution through situating how blending performativity and Marxian approaches to markets through cultural political economy (Sum & Jessop, 2013) can aid in understanding the cultural contingencies and structural tendencies that shape aquatic food markets. Importantly, Sum & Jessop (2013) allude to how cultural political economy may be useful in exploring markets with an STS, or performativity perspective, but do not detail how this may be done. As such, I have made a theoretical contribution in this thesis through advancing how the complexities of aquatic food markets can be read with and through cultural political economy.

As is more empirically explored in chapter 5, and theoretically in chapter 6, the role of the market in alleviating the central contradictions of capital's relationship with the sea is not explicitly

recognised by development agencies as due to industrial overfishing, but rather problematized as due to a deficit of knowledge or practice on the part of Ghanaian small-scale fisherfolk.

This was evident in chapter 5, which details how development agencies such as USAID lead the implementation of hygiene and quality standards in the Ghanaian post-harvest fishery due to a perceived lack of hygienic handling and care of fish by women fish processors and traders, to mitigate income loss due to low levels of fish landings. This is also the case in chapter 6, where financial inclusion initiatives, explored in this chapter through the example of VSLA, are deemed necessary by development agencies because of a perceived lack of savings culture (as explained by Osei, the NGO officer in Cape Coast). Again, as is reiterated throughout my empirical chapters, I do not suggest that unhygienic fish should be eaten, or that small-scale fisherfolk should not be better supported financially. I rather question the mode through which these market-led initiatives are developed and argue that more attention should be paid to combatting the exploitative and unsustainable mode of industrial overfishing in Ghanaian waters, rather than using the market as a techno-social fix in small-scale fisheries to alleviate the contradictions inherent to industrial fishing.

I will now turn to how I fulfilled each of my stated aims, answered my research questions, and made contributions in this thesis through detailing the main contribution in each of my chapters.

8.2. Overview of research aim and questions

Based on my empirical, qualitative approach to data collection, my research aim was to identify and analyse the social, economic, and environmental dynamics of Ghanaian aquatic food systems. The following sections detail how each chapter addressed the research questions and the main point of each specific chapter. Each of these more specific chapter points fulfils the overall thesis contributions highlighted above.

For clarity, my research questions were:

1) How does industrial fishing in Ghana affect small-scale fisheries?
2) What is the relationship between the aquatic food market(s) and industrial fishing in Ghana?
3) Can a critical understanding of the market be advanced in analyses of aquatic food systems, and how can this relate to debates regarding food sovereignty in fisheries?

Main point of chapter 2 - A political economic approach must be integrated with the growing 'fish as food' consensus.

To uncover the environmental, economic, and social dynamics that underpin aquatic food systems (my research aim), I firstly turned to how fish has, or is, understood as food in policy, research, and governance. The second chapter of my thesis provided a mapping of literature which has detailed the necessity of understanding fish as food. Yet, I argue in this chapter that while fish are food, the politics of aquatic food systems, which small-scale fisherfolk involved in the food sovereignty movement call attention to, is a vital yet little explored research topic. There is, in essence, a lack of critical engagement in the 'fish as food' consensus with the political, economic, and social drivers of inequity in aquatic food systems. Underneath and hidden amongst the 'fish as food' consensus lies a whole host of political, social, and economic processes, which risk being ignored in current and significant literatures which emphasise the importance of fish to food and nutrition security. This chapter argued that a political economic approach to the 'fish as food' consensus is necessary to understand the power structures that shape inaccessibility of aquatic foods and oceanic environmental degradation. Situating fish in a food systems framework may not ultimately tackle broader drivers of food and nutrition insecurity if the power structures that perpetuate these inequities are not challenged. A food sovereign and political economic approach to fisheries and their aquatic food systems may allow for a political questioning of the conditions of the production of food.

Main point of chapter 3 - To build on a food sovereign approach to fisheries, it is important to deconstruct how markets are made in aquatic food systems to move towards combatting inequity.

In my third chapter, to accomplish my stated research aim, it was necessary to understand **what role markets have in aquatic food systems**. This chapter also contributed to answering my third research question. Viewing fisheries through the lens of market exchange allows for a more holistic incorporation of gendered relationships in fisheries, due to women mostly dominating labour in the pre- and post-harvest fisheries sectors, including trade and exchange in markets. Markets are a pervasive feature of contemporary life, and permeate every sphere of society (Ouma, 2015). This chapter overviewed dominant approaches to understanding markets as institutions. It highlighted how Marxian political economy has often deprioritised markets in lieu of a focus on the productive realm (Harvey, 2012; Christophers, 2014; Braun, 2016). In doing so it set up the theoretical underpinnings of this PhD, which has problematized and deconstructed the existence of aquatic food markets in Ghana, through breaking down *how* and *why* they are made. It argues that while markets have been key to progressing understandings of the financialisation of fisheries management (Christiansen, 2023), markets and their making in aquatic food systems have been relatively ignored. It argues that a food sovereign approach to fisheries can be furthered if a critical understanding of how and why markets are made is taken into account.

Main point of chapter 4 - Fieldwork is risky and political. Universities need to acknowledge and act upon this.

Chapter 4 detailed my methodological and ethical approach. It highlighted how critical realist philosophy and critical grounded theory, moulded my approach to my methodology. It also described the embodied, affective aspects of fieldwork, as well as the masculinist and colonial underpinnings of my research. It noted the primary methods in which data was obtained, and detailed ethical decisions and quandaries in the 'field.' This has been with the aim of exploring in greater detail the often hidden and little-discussed aspects of ethnographic methodology, to better illuminate the power dynamics inherent to my own research process, and how this concurrently shaped my research into the economic, environmental, and social power dynamics of Ghanaian

fisheries and their respective aquatic food systems. The **politics of fieldwork is nothing new but needs a greater re-examination by universities**. Fieldwork is particularly risky, and universities need to set up processes that would assist doctoral researchers in the field in case of accident, violence, or death. Pre-fieldwork training and post-fieldwork care would also be beneficial for all, but particularly for those who fall outside of the able-bodied, cis, straight, white, male, and middle/upper-middle class norm.

Main point of chapter 5 – Market-led development through hygiene and quality standards risks embedding inequality in the Ghanaian post-harvest sector

I answered the first and second research questions through particularly focusing on the **social dynamics** of market-led development in small-scale fisheries. Here, I show that in the making of a higher value-added market for the post-harvest sector, the implementation of hygienic certification and quality standards risk creating a two-tier system in which the **relative affordability and accessibility of small pelagic fish for the poorest in Ghana** would be compromised. In the context of declining small pelagic fish catch, market-led developmental policies in the Ghanaian post-harvest sector bypass confronting the industrial overexploitation of Ghanaian waters and may do little towards fulfilling their stated aim of mitigating the ecological collapse of the small pelagic fishery in Ghana.

Main point of chapter 6 - 'Informal' economic practices are vital in supporting changing pre- and post-harvest livelihoods in small-scale fisheries systems

I have answered the first and second research questions primarily through exploring the complexities of **informal and formal economic relations** in small-scale fisheries. This paper has shown how small-scale fish processors and traders in Ghana navigate livelihood challenges caused by national economic crises, political challenges through the rise of fuel costs, and oceanic ecological crises caused by industrial overfishing, through utilising different forms of susu, such as 'informal' social group susu, or more hybridized forms of susu (VSLA) available through development agencies.

Main point of chapter 7 - Trawler overfishing alters gendered post-harvest social relations which causes market dependency in the Ghanaian post-harvest sector

While it is evident that this chapter also detailed how **the social dynamics** of changes to the post-harvest fishery, it primarily focused on how marine overexploitation shaped **the environmental dynamics that** have changed social-property relations in the post-harvest fishery, through the concept of market dependency.

It answered the first research question through specifically relating the how the industrial fisheries affect the Ghanaian small-scale fishery, specifically in the post-harvest sector. This contributes to advancing **gendered implications of industrial fishing**. This chapter also answered the second research question through advancing a **critical understanding of the market** through the notion of market dependency and food sovereignty. This is in terms of the capitalist dynamics in the industrial fishery that shape aquatic food markets in Ghana. Through the empirical examples of the impact of trawler marine activity on the Ghanaian post-harvest sector, it examined the complexities of socio-ecological dynamics in Ghanaian aquatic food systems. I then answered my third research question, through building on food **sovereignty as an approach** in which to understand specific capitalist dynamics in aquatic food systems *in the absence of a fish food sovereignty social movement*. Understanding complex food systems with a food sovereign approach builds upon a more holistic, **socio-ecological, and political understanding of inequities** in the aquatic food production and consumption nexus.

8.4. A summary of thesis chapter findings and arguments

This thesis has explored several complex and cross-cutting themes. Through engagement with significant amounts of literature, policy debates and processes, and qualitative research with relevant stakeholders, its main contributions, which could be turned into recommendations for future directions in discussions in research or policy, are therefore summarised below:

- Integrating political economy more explicitly in the growing fish as food consensus is vital for a greater, and more in-depth understanding of the drivers of aquatic food insecurity, particularly for fish-dependent communities in the global South (Chapter 2).

- Examining how markets are made is an important and vital step towards understanding the politics of inequality and hunger in aquatic food systems (Chapter 3).
- Market-led development for small-scale fisheries is not a panacea and needs to be questioned in relation to its potential to embed inequality, particularly for already vulnerable small-scale fisherfolk (Chapter 5).
- Informal economics, such as susu, are not always predatory, but vital to small-scale fisheries. Informal and formal economic practices are mutually dependent. This should be better reflected in governance, policy, and fisheries literature which seeks to improve financial inclusion for small-scale fisherfolk (Chapter 6).
- Industrial and small-scale fisheries are becoming increasingly intertwined. Tackling industrial overfishing can reduce furthering inequities in the Ghanaian post-harvest sector. An increasing dependency on buying fish from import companies, cold stores, or trawler-caught bycatch is changing social-property relations in the post-harvest fishery, and is shaping aquatic food market processes, which may affect fish consumption. Fisheries policy and research need to further examine the complexities and interrelationships between the industrial and small-scale fisheries sectors to better illuminate the complex dynamics of unequal fisheries development in capitalism (Chapter 7).

8.5. Limitations

There are several limitations to my research which should also be noted. Firstly, participant recruitment in the field was highly dependent on the interpersonal relationships already established by the research assistants on the project. This shaped my research in many positive ways, but also meant that I did not manage to interview a wide range of people, and participants recruited may not have been able to give a clear overview of the challenges facing fisheries. There remained several misunderstandings, where I was not able to communicate clearly. This was mostly because of language and translation errors, which impacted my ability to fully grasp what was going on during and after interviews. This limitation was due to my inability to speak Fante or Asante Twi. Furthermore, it was not feasible to include detailed research into consumptive dynamics of aquatic foods in my research design. This was due to my focus on understanding the labour and social processes that go into the pre- and post-harvest sectors and their relation to the effects on small-scale fisheries. Analysis of consumption patterns may have also required a different approach to

the qualitative research methodology I employed, which was not factored into my research design. However, I believe that this is something future research could build upon.

Research participant recruitment, research scope, language issues, compensation, and cultural misunderstandings were some of the weaknesses in this research. I do not feel I was able to grasp the full depth and nuances of fishing culture and life in Ghana due to who I was able to interview in this study (or who was willing or able to speak to me), and my inability to understand the language and the culture. As such, I do not seek to assert in this doctoral research that I have gained a full and comprehensive understanding of the issues facing Ghanaian fisheries. For example, in chapter 7, I was not able to fully capture the complex nuances, uses, and meaning of susu in small-scale fisheries. This is something that future research could seek to explore. Better planning and better contacts to set up connections with research participants would have helped to make sure that fieldwork research was more collaborative, rigorous, and not so 'unwieldy.'

8.6. Future research agenda: how are aquatic food markets made?

8.6.1. The role of the state in co-creating aquatic food markets

The implications of state involvement in the fisheries sector, as well as the effects of state subsidies, are manifold for aquatic food systems in respect to both food security and food sovereignty. Yet, the state and its relationship to facilitating capital accumulation and in engineering markets, has received little critical attention when it comes to how it shapes both the productive, exchange, and consumptive aspects of aquatic food systems. State and market pressures can shape fisheries ecological resources because "world market cost structures and emergent standards shape power relations in fisheries production systems" (Campling *et al*., 2012, p. 184). States garner rent from fishing activities conducted within 200 nautical miles, defined as a nation's Exclusive Economic Zone (EEZ). States and are also able to regulate fishing activities through "time, technology, technique, catch volume and/or space" (Campling *et al.,* 2012, p.179). States, particularly lower-income states in the global South, also often wish to maximize rent from their fisheries resources through foreign fishing arrangements (Virdin *et al*., 2019). Foreign fishing access agreements can come in multiple forms, however foreign fishing companies are often involved in access agreements between varying governments to fish in a nation's waters (Virdin *et al*., 2019). Subsidies from states, which can be understood as in the form of governmental

financial support to the fishing sector (Sumaila, 2013), can be particularly harmful and can contribute to overfishing (Skeritt *et al*., 2023). The state is thus key to facilitating oceanic capital accumulation, and its relationship to aquatic food market exchange and fisheries production is a worthwhile future research avenue to explore.

8.6.2. Financial flows and mechanisms in the creation of aquatic food markets

Understanding the financial mechanisms and flows that are intrinsic to fisheries and aquatic food markets are vital to connect how such mechanisms (or even market devices) impact and shape aquatic food production, exchange, and consumption. Financial flows and mechanisms are integral to the creation of aquatic food markets. Hidden financial flows have been noted as interwoven in several blue economic initiatives (Schutter *et al.,* 2024). It is also estimated that certain companies benefit from approximately $11.49 billion dollars every year due to IUU fishing (FTC, 2022). The top 10 companies involved in IUU fishing own 23.7% of total vessels (FTC, 2022).

8.6.3. Sustainability, certification, and ecolabeling in producing aquatic food markets and their unequal developmental effects in small-scale fisheries

Connecting the dots between sustainability labels, production and consumption would be a worthwhile future research avenue to explore. The relation of markets to production in fisheries has been explored through the creation of the Marine Stewardship Council's (MSC) label for sustainable fisheries and the rise of standards and certification as tools of marine market-based management (Ponte, 2012; Miller & Bush, 2015). The creation of 'sustainable' fish through market-based standards and certification therefore shape both fisheries production and consumption patterns. Sustainability initiatives through ecolabelling are often shaped by powerful interests (Herrmann *et al.,* 2024). Yet research which details how these labels impact small-scale fisheries and their respective aquatic food systems has been less understood. Furthermore, how such labels may engineer demand in a certain type of fish is also less examined.

8.6.4. How do corporations ensure profit through the engineering of aquatic food markets and how does this impact consumption patterns?

A comprehensive analysis of aquatic foods from production to consumption has not been undertaken (Campling *et al.,* 2012). As such, there is a need to develop research that focuses on

not only production in fisheries, but also how this is connected to the realms of exchange and consumption. A good starting point may be to explore how consumption patterns in aquatic foods are engineered by corporations (i.e., the increase in global demand for salmon) and build on a political economic approach which centres how and why an increase in aquatic food consumption inequity has occurred. Another starting point could be a comprehensive analysis of small pelagic fish value chains, due the fish species being vital to many food systems worldwide, as well as being increasingly valued as 'fodder' for the burgeoning aquaculture industry (Isaacs, 2016).

8.6.5. What role does science (particularly fisheries science) have in creating aquatic food markets?

Focusing on how science contributes to the making of aquatic food markets may illuminate the potentially unequal power structures and dynamics that shape not only fisheries management, but also post-harvest handling of fish as food. Based in more performativity approaches to markets, how does scientific knowledge contribute to the making of aquatic food markets? What knowledge is counted and discounted, and how is fisheries science produced?

8.6.6. The potential of food sovereignty for small-scale fisheries. Are there points of connection in a globalised aquatic food system?

Food sovereignty activists in small-scale fisheries have centred their campaign against ocean grabbing (particularly under the banner of blue growth), gender inequality, and undemocratic, corporate control over fish harvesting, processing, and trade, to name but a few. The growing capitalist encroachment of ocean space and resources threatens the food security of the very people who need fish the most, contributing particularly to the marginalisation of small-scale fisheries' livelihoods and aquatic food systems. However, "the politics of unequal fisheries development and resource use are not well understood" (Campling *et al*., 2012, p. 187). Can the marginalisation of small-scale fisheries and their aquatic food systems be understood and systematized according to a political economic perspective? What may differ regarding how small-scale fisherfolk experience dispossession and marginalisation compared to small-scale farmers? How does a changing ocean environment due to climate change and industrial overfishing alter and shape gendered and other intersectional relations in fisheries in the global North?

8.6.7. Migrant and racialised labour in industrial fishing firms in the global North

Industrial fishing fleets in the global North are often reliant on 'cheap' labour provided by migrants. As an example, a group of Ghanaian fishermen recently won a £20,000 pay-out from the UK government for working in conditions of modern slavery on a Scottish-based scallop trawling company (BBC, 2024). How did these Ghanaian fishermen end up working for this firm? Why did this firm employ Ghanaian fishermen in such miserable conditions? How does this speak to the dynamics of global capitalism and labour exploitation at sea, and *how* does this relate to aquatic food exchange and consumption patterns (i.e., where are these scallops sold? Who eats them?).

8.7. Concluding remarks

There remains a lot of work to do to advance critical understandings of hunger and inequity in aquatic food systems. The large and complex questions of the politics of inequity in aquatic food production, exchange, and consumption are not only relevant for those of us who eat aquatic foods, but also relevant for all life on Earth. Countering capital's extractive, contradictory and damaging relationship with aquatic and oceanic life will be vital in the coming decades, particularly for fish-dependent communities and small-scale fisherfolk in the global South. In exploring the politics of Ghanaian aquatic food markets, this research has illuminated the power structures that marginalise (particularly, but not only women) in small-scale fisheries, and the inequities in fish production and exchange shaped by industrial overfishing in West African waters. It has dissected a tiny slice of the chaos of aquatic food systems through showing how capital shapes the interrelationships between production and market exchange in Ghanaian small-scale fisheries.

The impact of industrialised fishing has profound gendered and classed implications for Ghanaian small-scale fisheries. The women fish processors and traders I spoke to had crafted complex strategies, multiple business relationships, and collective savings practices to navigate the socio-ecological and economic uncertainties inherent to their increasingly marginalised small-scale fisheries' livelihoods. Some were able to benefit from the presence of industrial trawlers, many were unable to. Many of the strategies and practices employed by women fish processors and traders occurred at that pesky "threshold of exchange" (Agnew, 1979).

The compulsion for capital to accumulate in the industrial sector enables the further embedding of capitalist social-property relations in the post-harvest sector's aquatic food market(s). Consequent low levels of fish landings and price rises are changing the nature of the Ghanaian aquatic food value chain. Development and governance actors purportedly intervene to mitigate these adverse conditions by implementing certain 'new' market practices. However, this only extends the reach of neoliberal and capitalist social-property relations into Ghanaian aquatic food systems. This comes amidst an increased dependency on buying fish from import companies, trawlers, and cold stores instead of from the small-scale sector, which only serves to propel the expansion of capitalist social-property relations in Ghanaian fisheries. The contradictions and crises inherent to oceanic capital accumulation also alter small-scale fishing practices at sea (such as staying out at sea longer), which subsequently drives changes and embeds inequalities in the post-harvest sector and Ghanaian territorial aquatic food markets (through degraded fish and price rises). Importantly, changes in aquatic food market dynamics cyclically and dialectically drive changes to fisheries production relations, in as much as production relations dialectically drive changes to aquatic food markets.

Markets are constituted of multiple labour processes, social characteristics, and economic practices. It is thus vital to shed light on how capital shapes aquatic food markets to expand upon current (albeit limited) social science literature which details how capitalism shapes fisheries production relations. If we wish to combat the increasing marginalisation, vilification, and dispossession of small-scale fisherfolk's livelihoods and ways of life, examining the complex and contradictory effects of oceanic capital accumulation on small-scale fisheries could move towards clarifying the pitfalls and potentials of aquatic food sovereignty for small-scale fisheries.

Further research which examines the politics and power dynamics of fisheries in relation to heterodox political economy and aquatic food markets is of crucial importance. We stand in dire need of dismantling the powerful interests that create polarising inequities in aquatic food systems, which degrade the ocean environments, and which prevent the flourishing of all human and other-than-human life on Earth.

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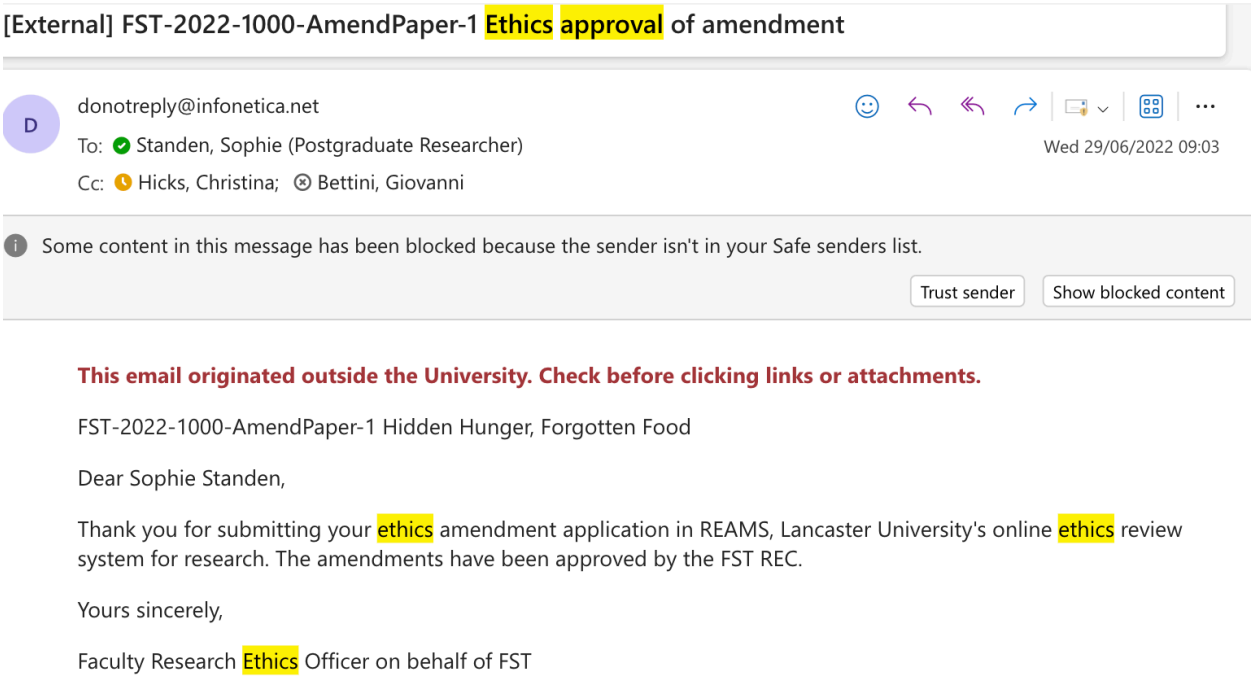
Appendices

Appendix A - Interview guide

1) Tell me a bit about who you are, and what you do for a job. How do you trade and/or process/and/or other (I.e. carry) fish?
2) Are you from here originally? If not, what drew you to this place?
3) Why did you decide to trade/process/other fish?
4) Where do you buy your fish from?
5) Who do you sell to mostly? How do you price your products?
6) What are the challenges you currently face with processing/trading fish (if any)?
7) What sorts of food do you normally eat? Is it common for you to also eat the same types of the fish you also sell? What types are those?
8) What kinds of things do you need to make your job of fish trading/processing easier?
9) What kinds of women's fisheries organisations are present in your district? (i.e. union, community-based organisation, credit/savings/loan group, association)
10) Are you part of a fisheries organisation and if so, what kind of group?
11) When did this group start, and why was it formed?
12) If yes, what are the benefits for you of being part of this group?
13) Do you have any questions you would like to ask me?

Appendix B - Ethics approval



[External] FST-2022-1000-AmendPaper-1 Ethics approval of amendment

D donotreply@infonetica.net

To: Standen, Sophie (Postgraduate Researcher)

Cc: Hicks, Christina; Bettini, Giovanni

Wed 29/06/2022 09:03

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FST-2022-1000-AmendPaper-1 Hidden Hunger, Forgotten Food

Dear Sophie Standen,

Thank you for submitting your ethics amendment application in REAMS, Lancaster University's online ethics review system for research. The amendments have been approved by the FST REC.

Yours sincerely,

Faculty Research Ethics Officer on behalf of FST

Appendix C - Study introduction for participants

Participant information sheet

For further information about how Lancaster University processes personal data for research purposes and your data rights please visit our webpage: www.lancaster.ac.uk/research/data-protection

I am a researcher at Lancaster University and I would like to invite you to take part in a research study about the contributions fisheries make to food security and how these can be better realised.

Please take time to read the following information carefully before you decide whether or not you wish to take part.

What is the study about?

This study aims to understand how nutritious different species of fish are, and how they are prepared supports human health. We are also interested in who across the community can access these species.

Why have I been invited?

I have approached you because I am interested in understanding how fish is distributed across your communities because I understand that fishing is an important livelihood activity here.

I would be very grateful if you would agree to take part in this study.

What will I be asked to do if I take part?

If you decided to take part, this would involve the following: I will conduct some focus groups, face to face interviews, spend some time with you and your community as you go about your day to day activities, and conduct some household surveys. We will ask questions about what you eat, what your occupation is, how many people you live with. You would most probably only be involved on one of the methods mentioned above (i.e. focus group or interview or survey) and this should take less than an hour of your time.

What are the possible benefits from taking part?

Taking part in this study, will contribute to our understanding of how important fish is in coastal communities, to what extent fish is currently contributing to food security, and what the barriers and opportunities are to increasing this contribution.

Do I have to take part?

No. It's completely up to you to decide whether or not you take part. Your participation is voluntary and you are free to withdraw at any time, without giving any reason.

What if I change my mind?

As explained above, you are free to withdraw at any time and if you want to withdraw, I will remove any information you contributed to the study. However, it is difficult and often impossible to take out data from one specific participant when this has already been anonymised or pooled together with other people's data. Therefore, you can only withdraw up to 6 weeks after taking part in the study.

What are the possible disadvantages and risks of taking part?

It is unlikely that there will be any major disadvantages to taking part. However, taking part will mean spending 30-60 minutes in an interview, survey, or focus group. However, we will be collecting information about your diet and health status, therefore if we discover you or anyone in your household has a dietary risk we will provide you with some information and names and contacts of people you can go to for more advice.

Will my data be identifiable?

After the interview, focus group, survey, and observation, the only people who will have access to the data is our research team who have helped us in designing and conducting the surveys and a professional transcriber who enter the data or listen to the recordings and produce a written record of what you and others have said. The research team have all completed security training or signed a confidentiality agreement.

I will keep all personal information about you (e.g. your name and other information about you that can identify you) confidential, that is I will not share it with others. I will anonymise any audio recordings and hard copies of any data. This means that I remove any personal information.

Participants in the focus group will be asked not to disclose information outside of the focus group and with anyone not involved in the focus group without the relevant person's express permission.

How will my data be stored?

Your data will be stored in encrypted files (that ~~is~~ no-one other than me, the researcher will be able to access them), on password-protected computers, or in locked cabinets in my office.

I will keep data that can identify you separately from non-personal information (e.g. your views on a specific topic).

In accordance with university guidelines, I will keep the data securely for a minimum of ten years.

How will we use the information you have shared with us and what will happen to the results of the research study?

I will use the data you have shared only in the following ways:
For scientific and policy relevant publications. In presentations at academic and policy relevant meetings. Finally, I will develop visual information sheets that I will use to communicate summary findings back to yours and other communities and to relevant policy makers and managers.

When writing up the findings from this study, I would like to reproduce some of the views and ideas you shared with me. When doing so, I will only use anonymised quotes (e.g. from our interview with you), so that although I will use your exact words, you cannot be identified in our publications.

This study is funded by the European Commission. The funder expects me to make my data available for future research and use by other researchers. We will only share anonymised data in this way and will exclude all personal data from archiving. We intend to archive/share our data via GitHub.

Who has reviewed the project?

This study has been reviewed and approved by the Faculty of Science and Technology Research Ethics Committee at Lancaster University.

What if I have a question or concern?

If you have any queries or if you are unhappy with anything that happens concerning your participation in the study, please contact myself Sophie Standen s.standen@lancaster.ac.uk

If you have any concerns or complaints that you wish to discuss with a person who is not directly involved in the research, you can also contact:

Head of Department
Xxxx Lancaster University

Sources of support
I will add public health sources of support relevant for each community

Thank you for considering your participation in this project.

Appendix D - Confidentiality agreement with Research Assistants

Hidden Hunger, Forgotten Food

Food Security is a grand challenge of our time, but three factors inhibit our ability to meet global targets. First, interdisciplinary approaches incorporating ecological, social, and health sciences are fundamental, but lacking. Second, a disproportionate focus on food quantity overlooks 'hidden hunger', or micronutrient deficiencies, which are implicated in over a million deaths annually. Third, small-scale fisheries (SSF) reach 100s of millions of people in the developing world, hold potential for achieving food security, but remain 'forgotten food' in global discourse. Consequently, an interdisciplinary approach that tackles hidden hunger within SSF is a critical frontier for food security research.

Fish are particularly high in many micronutrients, but a systematic understanding of which species have the greatest concentrations of key nutrients is needed. Inadequate access to nutritious food is one of the most significant problems of the modern age, which can be illuminated through analyses of power. The failure to realise the tremendous potential for improving food security through fisheries stems from a lack of understanding of how social drivers exacerbate or ameliorate nutritional inequalities. Consequently, an in-depth analysis that quantifies how key social drivers impact nutritional inequality, is essential.

FAIRFISH will address these gaps to uncover the ecological and socio-cultural determinants of the contributions SSF make to human health:

1. Establish the ecological and environmental determinants of nutrient availability among fish species using a traits based approach.

2. Advance social practice theory, by integrating an analysis of power, to determine what power relations enable or constrain access to nutritious food.

3. Progress interdisciplinary science, by integrating findings from 1 and 2, to quantify the impact

of key social drivers on nutritional inequality, and uncover opportunities to meet nutritional needs.

CONFIDENTIALITY FORM FOR RESEARCH ASSISTANT

Project Title: European Research Council. Hidden Hunger: Forgotten Food. Fairfish Project

Name of Research Assistant:
Name of Researcher: Sophie Standen
Supervisors/Principle investigator:

Please tick each box

1. I confirm that I have read and understand the Information Sheet for the above study. ☐
2. I confirm that I have read and understand the Research Consent Form for the above study. ☐
3. I confirm that it is my responsibility to ensure safety of myself, co-researchers and research participants while data collection, handling and processing. ☐
4. I confirm that I shall never engage in any form of data manipulation.
5. I confirm that I shall present and deposit all project-related data and/or information collected with the PhD researcher. ☐
6. If advised by the PhD researcher, I shall share relevant project data and/or information with members of the research team. ☐
7. I confirm that without prior written approval from the PhD researcher/Principal Investigator, I shall not share any project data and/or information with anyone outside the project team. ☐
8. I confirm that I shall handover all data to the PhD researcher/ Principal Investigator by the project completion date or my departure from the ☐

research team – whichever comes first. I also confirm I shall not keep any data with me, in digital or in hard copy, after the data handover date.

9. I understand that all digital data will have to be protected on encrypted devices and kept secure. All physical data will also be kept secure. ☐

10. I understand that data will be kept according to Lancaster University guidelines for a minimum of 10 years after the end of the project. ☐

11. I agree to be a part of the above research team. ☐

12. The research assistant will be recompensed $60 USD per day worked, and all extra expenses such as accommodation, travel, and food during those days worked will also be covered by project funding.

Signature of Researcher _____ Date _____

Signature of Research Assistant…….

Date……

A signed copy of this form will be given to the researcher and the original kept in the files of the Principal Investigator at Lancaster University.

Appendix E – Letter of introduction to conduct research in Ghana

Dear Sir/Madam,

LETTER OF INTRODUCTION FOR RESEARCH

This letter is to confirm that the Department of Nutrition and Food Science of the University of Ghana is in collaboration with the European Research Council and Leverhulme Trust funded research projects on fisheries and nutrition. These projects are led out of Lancaster University, U.K., and involve [redacted], [redacted], [redacted], and Ms Sophie Standen.

The research sits at the intersection of human nutrition, social science, and fisheries science and sets out to understand how fisheries can better address malnutrition in Ghana. ln particular, this research will examine how gender and power relations enable or constrain access to nutritious food and the importance of dried fish as a low-cost nutritious food.

This research is of value to Ghana as it will help to strengthen our commitment to meeting SDG 1: No Poverty; SDG 2: Zero Hunger; SDG 5: Gender Equality; and SDG 14: Life Below Water. The University of Ghana's relationship with the University of Lancaster will also help strengthen ongoing research collaborations between these two countries.

[redacted], [redacted], and Ms Sophie Standen will undertake research within this theme in collaboration with the department of Nutrition and Food Science at the University of Ghana. Ms Sophie Standen is a PhD student who is undertaking research as a part of this project and her PhD[redacted] is also a PhD student who will be assisting on this project.

Thank you for your understanding.
Yours faithfully,

Professor Christina Hicks
Lancaster Environment Centre, Lancaster University

Appendix F – Letter of research invitation

UNIVERSITY OF GHANA

SCHOOL OF BIOLOGICAL SCIENCES

DEPARTMENT OF NUTRITION AND FOOD SCIENCE
COLLEGE OF BASIC AND APPLIED SCIENCES

25 November 2021

Ghana High Commission
104 Highgate Hill
London N6 5HE

Dear Sir

LETTER OF INVITATION FOR RESEARCH

This letter is to confirm that the Department of Nutrition and Food Science of the University of Ghana is in collaboration with the European Research Council and Leverhulme Trust funded research projects on fisheries and nutrition. These projects are led out of Lancaster University, U.K., and involve **Professor Christina Hicks, Dr. James Robinson, Dr. Antonio Allegretti, and Ms Sophie Standen.**

The research sits at the intersection of human nutrition, social science, and fisheries science and sets out to understand how fisheries can better [redacted] in [redacted]. In particular, this research will examine how gender and power relations enable or constrain access to nutritious food and the importance of dried fish as a low-cost nutritious food.

This research is of value to Ghana as it will help to strengthen our commitment to meeting SDG 1: No Poverty; SDG 2: Zero Hunger; SDG 5: Gender Equality; and SDG 14: Life Below Water. The University of Ghana's relationship with the University of Lancaster will also help strengthen ongoing research collaborations between these two countries.

This research collaboration will start in January 2022 and run initially for three years, until January 2025. We welcome **Christina Hicks, James Robinson, Antonio Allegretti, and Sophie Standen** to the University of Ghana for an in-person meeting to discuss modalities of the research.

I humbly ask your good office to grant them visas to Ghana and any relevant information that will be of help to them while in Ghana.

Thank you for your understanding

Yours faithfully,

[redacted]

Prof. Matilda Steiner-Asiedu
Project Coordinator

P. O. Box LG 134, Legon, Accra, Ghana. | Tel: +233 (0) 303 965 367
Email: nfs@ug.edu.gh | Website: www.ug.edu.gh

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