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Livelihoods in Crisis: Threats to Senegal's Artisanal Fishing Communities

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Abstract

Senegal's artisanal fishing sector is crucial for employment and food security nationwide. Available data on the state of Senegal's fish stocks paints a picture of dwindling marine resources — a phenomenon supported by the experiences of those living and working in the coastal West African country's fishing communities, whose livelihoods are increasingly threatened by fish scarcity. This thesis identifies the interconnected national, regional, and international variables driving fish stock decline in Senegal from a policy and environmental standpoint. By analyzing the political economy context shaping the state of Senegalese fisheries and through extensive interviews with Senegalese fishers and civil society groups, this study dispels common misconceptions that identify overfishing among artisanal fishers as the root of Senegal's fish scarcity crisis, pointing instead to the influence of production-oriented national policies and international aid patterns that encourage overexploitation of fish stocks. This thesis provides essential research to inform further local-level studies of indigenous survival systems and adaptation strategies, as well as African fisheries studies in a comparative regional context.

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Finally, thank you to my friends and family for their encouragement throughout this research process. To my mom, dad, and brother: thank you for your love and support. Thank you to my housemates for bearing with me during my many early-morning calls and for being by my side through the ups and downs of a uniquely challenging academic year.

This thesis is dedicated to my Senegalese host family in Ouakam, who welcomed me into their home and lives for four months in 2019, and who sparked my love for Senegal.

Introduction

Abdoulaye Ndiaye grew up in the fishing village of Ngaparou. Throughout his childhood in this coastal town in the department of M'Bour just south of Dakar, Ndiaye recalls going out to sea and returning with a full pirogue — a vibrantly colored wooden canoe used by Senegal's artisanal fishers. There were about twenty pirogues in Ngaparou when he was a child. The fishers of Ngaparou would succeed in filling their pirogues using simple line fishing techniques. Despite some indications of decline in catches, fish was plentiful throughout the 1990s.

Visions of rich waters and full pirogues are now distant memories for Ndiaye; fishing activities in Ngaparou have changed dramatically since the turn of the century. Ndiaye has observed the mere twenty pirogues multiply to about 200. He has simultaneously noticed a notable decrease in landings among Ngaparou's fishers over the past ten years, despite the use of more sophisticated fishing techniques. Large commercial fishing vessels are now more commonly spotted in fishing zones off the coast of Ngaparou, resulting in more frequent interactions — some harmful — between industrial vessels and small-scale boats. “What's happening in my hometown is what's happening everywhere,” Ndiaye said.¹

This thesis is anchored in the experiences of artisanal fishers such as Ndiaye, whose communities are undergoing rapid transformation as their livelihoods are jeopardized by depletion of fish stocks. My research seeks to answer a two-part question: first, what are the primary drivers of fish stock decline in Senegal in recent years? Second, how is fish scarcity affecting artisanal fishing livelihoods in this West African country? I have adopted a political economy approach to studying Senegal's fisheries sector, with the understanding that policy — national, regional, and international — has direct implications for those living and working in Senegal's small-scale fishing communities, largely determining the extent to which they can

¹ Abdoulaye Ndiaye, interview by author, January 28, 2021.

maintain their livelihoods. By analyzing international fisheries policy and assessing the Senegalese government's economic development priorities, I argue that short-term political interests — driven by a global economic system and international aid patterns that incentivize export-oriented commercial fishing activities — are prioritized at the expense of long-term food and livelihood security for the Senegalese population. My research thus dispels common, simplistic misconceptions that falsely identify overfishing among artisanal fishers as the root of Senegal's fish scarcity crisis. This thesis underscores the need for fisheries scholarship to focus instead on broader political economy frameworks and policies — offshore oil and gas concessions, subsidies from Northern governments to their distant-water fishing fleets, and fishing access agreements, to name a few — as the key drivers of livelihood insecurity.

My analysis of political and economic dynamics is rooted in the following primary sources: reports produced by both Senegalese and international NGOs, interviews with Senegalese activists and fishing association leaders, Senegalese government reports and public statements, domestic and international news reports, and publicly available databases on fisheries development aid. I selected a diverse range of sources — journalistic and advocacy-oriented, qualitative and quantitative — to paint as comprehensive a picture as possible of the varied dynamics that together create a system of overexploitation of fish stocks.

In addition to a comprehensive political economy analysis that touches on the national, regional, and international dimensions of fisheries policies impacting Senegalese communities, my research illustrates the rapidly expanding civil society landscape in Senegal's fisheries sector. This component of my research is first and foremost informed by about ten remote interviews I conducted, primarily via messaging platform WhatsApp, with Senegalese activists and fishing association leaders. I conducted the interviews in French and translated them to English to

include relevant reflections in this thesis. I identified a diverse array of civil society groups active in Senegal's fisheries sector to include the perspectives of a wide range of actors, from fishers to women fish processors. These interviews offered substantive, firsthand insights into national fisheries policies, such as joint ventures allowing Chinese vessels access to Senegalese territorial waters and capacity-enhancing subsidies from the Senegalese government to modernize artisanal fleets. Moreover, my interviews with Senegalese activists — many of whom are employed in the fishing sector themselves, or grew up in coastal fishing communities — allowed me to better understand the on-the-ground realities in Senegal's artisanal fishing communities, as well as the expansion of civil society activities over the course of the past decade. This study of fisheries would be incomplete without centering the experiences and perspectives of those most directly affected by fish scarcity.

I began this research with an interest in studying survival strategies among those living in Senegal's rural artisanal fishing communities, particularly in the Sine Saloum delta region and the Senegal River coastal region along the northern border with Mauritania. My intention was to conduct community-based research in these specific localities, including extensive interviews with various actors in these small-scale fisheries, in order to analyze the system of dynamics shaping and altering livelihoods in these fish-dependent communities. However, in recognition of the historical realities of Senegal's fisheries and the constraints regarding access to information amid the COVID-19 pandemic, I realized that the national and international dynamics are critical to understanding the local ones — and that a focus on the broader political economy picture is a necessary first step to eventually delving into local-level livelihood systems.

Literature Review

Senegal is West Africa's largest producer of marine fish, with recorded exports increasing from 500,000 tonnes in 1950 to 5.5 million tonnes in the early 2000s,² and with the majority of this fishing activity occurring among artisanal fishers who target small pelagic fish species such as sardines and mackerel.³ Yet unsustainable growth of Senegal's fisheries sector in recent decades threatens the livelihoods of hundreds of thousands of people employed in the domestic fishing industry, simultaneously raising concerns about food insecurity as the price of fish continues to mount. It is crucial to consider existing literature on the global, regional, and local dimensions of fish stock decline in Senegal in order to understand the causes of the crisis and the shifting adaptation strategies within the country's artisanal fishing communities.

On a global scale, fisheries management can be treated as a case study in sustainable development; core issues of natural resource conservation are of particular importance in fisheries literature. Consensus around fishery policy is undermined by conflicting views on the elements of sustainability, as scholars view fisheries management through a wide range of divergent sustainability paradigms. Biological scientists often define sustainability in the fisheries context through the "conservation paradigm," which relies on protection of fish stocks as a measure of sustainability. This framework calls for fisheries management rather than a laissez-faire system of deregulation and open access, as open access is deemed to inhibit conservation objectives.⁴ In the 1950s, a new paradigm — the "rationalization paradigm" — challenged the conservation paradigm, advocating for increasing economic profitability from fisheries and emphasizing economic factors rather than ecological sustainability.⁵ The

² André Standing, "Mirage of Pirates: State-Corporate Crime in West Africa's Fisheries" (State Crime Journal, 2015), 176.

³ Ibid., 177.

⁴ Anthony Charles, "Towards sustainability: The fishery experience" (Ecological Economics, 1994), 202.

⁵ Ibid., 204.

“social/community” paradigm focuses on human concerns, identifying small-scale community-based fisheries as the best path to achieving sustainability and long-term resilience — the primary goal being to preserve ways of life in fishing communities.⁶

In light of these various sustainability paradigms, scholar Anthony Charles suggests a view of sustainable development that takes into account four primary objectives: ecological sustainability, socioeconomic sustainability, community sustainability, and institutional sustainability.⁷ Development policy, he argues, must incorporate all four of these facets of long-term sustainability. Other researchers — particularly those approaching fisheries management from sociological or anthropological perspectives, such as John Poggie and Richard Pollnac — underscore the social and cultural dimensions of sustainable fisheries development.⁸ Conservation paradigms, beginning in the 1950s and throughout much of the latter half of the 20th century, largely omitted mention of the socio-cultural dimensions of sustainable development. Tim Acott and his co-authors of *Social Issues in Sustainable Fisheries Management* thus argue that sustainable development in the context of fisheries must emphasize the linkages between marine fishing and social and culture issues, such as community ties and well-being. The authors define sustainability as “negotiating a balance between environmental, economic and socio-cultural domains”⁹ — a paradigm that views humans as crucial actors in the development process, and as an integrated component of ecosystems.

The last three decades of the 20th century saw the emergence of the notion of sustainable fisheries on an international scale, primarily through the 1972 UN Conference on Human Environment and the 1982 UN Convention on the Law of the Sea (UNCLOS), as well as

⁶ Ibid.

⁷ Ibid., 204-205.

⁸ John Poggie and Richard Pollnac, *Small-Scale Fishery Development: Sociocultural Perspectives* (Kingston: International Center for Marine Resource Development, 1991), 3.

⁹ Tim Acott et al., “Social Issues in Sustainable fisheries Management” (Dordrecht: Springer, 2014), 2.

additional international milestones including the development of Agenda 21 on sustainability in the 21st century. However, while these treaties are notable in their recognition of the social and cultural dimensions of fisheries management, the social impacts of fisheries policy remain undervalued within social science research.¹⁰

Global Frameworks for Fisheries Management

The concept of property rights as applied to living marine resources has emerged over the past 50 years, marking a major transition away from an open access regime to a system of exclusive economic zones (EEZs) managed by coastal states.¹¹ This “closure of the ocean commons” began in the 1970s with unilateral decisions by a number of coastal states to declare jurisdiction over 200 nautical mile EEZs, out of fear of distant water fleets depleting local stocks.¹² Soon after, the 1982 UN Convention on the Law of the Sea, or UNCLOS, legitimized coastal state sovereignty over marine resources; most states now consider fisheries provisions within UNCLOS as reflective of customary international law.¹³ The intention behind EEZs as outlined in UNCLOS was to provide a framework for states to more effectively manage and conserve marine living resources.¹⁴ Under UNCLOS, coastal states have jurisdiction over resources within their EEZ — unless the state does not have the capacity to exploit these resources, in which case it is required to allow access to third party states to exploit resources within its 200 nautical miles of territorial waters.¹⁵ International treaties impose additional requirements for EEZ fisheries management — guidelines that states that have ratified the treaties are obliged to follow in the management of their EEZ resources. The state sovereignty

¹⁰ Ibid., 3.

¹¹ Ibid., 5.

¹² Ibid., 6.

¹³ Marion Markowski, “The International Legal Standard for Sustainable EEZ Fisheries Management” (Gland: IUCN, 2009), 13.

¹⁴ Ibid., 3.

¹⁵ Gerd Winter, “Towards a Legal Clinic for Fisheries Management ” (Gland: IUCN, 2009), 328.

guaranteed through Article 5 of UNCLOS is thus not absolute; states are bound by environmental standards.

Marion Markowski argues that existing international law of fisheries, most notably UNCLOS, provides effective international standards for sustainable management of fisheries resources if fully and coherently implemented.¹⁶ Markowski asserts the value of specific legally binding norms related to fisheries conservation, including: a coastal state's obligation to ensure EEZ resources are not threatened by overexploitation; a coastal state's duty to restore populations of target species at sustainable levels; the obligation among states to use the precautionary principle in conservation efforts; and the obligation among coastal states to cooperate in order to conserve transboundary species.¹⁷ Along with laws governing fisheries management, Gerd Winter stresses the importance of societal conditions — a culture of respecting legal codes, adequate administrative capacity, and economic circumstances — in creating the conditions necessary for the implementation of fisheries legal codes that encourage conservation.¹⁸ Winter argues in favor of states adopting “monist” or “dualist” approaches to international law, both of which converge on the direct applicability of international rules, including in the realm of fisheries management. National authorities, Winter claims, must explore in greater depth the potential within international standards for sustainable use of marine resources — and implement such legal codes, incorporating them into national fisheries law.¹⁹

Beyond the overarching UNCLOS legal framework, scholars studying marine resource management in social science disciplines have, in recent years, emphasized the value in a participatory approach to fisheries management. International institutions have increasingly

¹⁶ Markowski, “International Legal Standard,” 24.

¹⁷ *Ibid.*, 228.

¹⁸ Winter, “Towards a Legal Clinic,” 321.

¹⁹ *Ibid.*, 322.

recognized the importance of small-scale fisheries for food security and poverty eradication globally, as exemplified by the UN Food and Agriculture Organization’s adoption of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in 2014.²⁰ Now, the question becomes how to implement these guidelines in a manner that upholds the human rights of all those involved in small-scale fisheries. The issue of how to ensure that regional, national, and local level policymakers uphold the human rights values stated in the FAO guidelines is, according to Ratana Chuenpagdee and Svein Jentoft, an issue of governance. They advocate “interactive governance” as a theoretical framework through which to view sustainable management of small-scale fisheries. At the core of this theory is the development of partnerships between the governing body and the entity that is to be governed, partnerships between government and civil society organizations, academia, and small-scale fisheries stakeholders to expand the decision-making knowledge base.²¹ They assert that both identifying and solving problems related to small-scale fisheries, through the lens of this interactive framework, must involve a wide array of actors and the empowerment of marginalized groups.²² Globally, the management of fisheries often takes a top-down approach in which fishers and local fishing communities have relatively limited decision-making power. This, Anthony Charles argues, must change; local community involvement is essential to sustainable management of fisheries.²³

The participatory approach is linked to the human rights framework through which some scholars view fisheries management — an analytical framework that centers the well-being of fishers and fishing communities. Other scholars criticize this human rights approach to

²⁰ Ratana Chuenpagdee and Svein Jentoft, “The Quest for Transdisciplinarity in Small-Scale Fisheries Governance” (Cham: Springer International Publishing, 2019), 4.

²¹ *Ibid.*, 5.

²² *Ibid.*

²³ Charles, “Towards sustainability,” 207.

small-scale fisheries development, arguing that applying a human rights framework reflects Western ethical values and thus has the potential to undermine traditional norms and practices. Alternative criticisms question the emphasis on rights within the human rights framework, which some scholars argue can be misinterpreted to encourage privatization — in line with neoliberal fisheries policies.²⁴ Nicole Franz and her co-authors, however, view the human rights framework as a counter force against neoliberal policy centered on market-led economic growth.²⁵ Fishers and supporting NGOs have invoked human rights discourses to defend their access to fishery resources, in advocacy efforts and in pursuit of legal recourse,²⁶ indicating a connection between human rights and livelihood protection.

The past 50 years of fisheries research has exhibited a general disregard for the significant role of fisheries in local, regional, and global food systems; instead, fisheries are often portrayed as production systems for markets, or alternatively as livelihood systems for coastal communities. The many links between these varied roles that fisheries play, as well as the role of fisheries in providing culturally-relevant food for human consumption, are often overlooked — and the impacts of this omission are reflected in fisheries management policies.²⁷ Melinda Agapito and her co-authors thus call for an understanding of fisheries systems as food systems,²⁸ with the food system operating as an analytical concept. This framework that links fisheries with food systems emphasizes the importance of using human rights and sovereignty as guiding principles in sustainable fisheries management.²⁹

²⁴ Nicole Franz et al., “A Human Rights-Based Approach to Securing Small-Scale Fisheries: A Quest for Development as Freedom” (Cham: Springer International Publishing, 2017), 16.

²⁵ *Ibid.*, 18.

²⁶ *Ibid.*, 22.

²⁷ Melinda Agapito et al., “Fish and Food Security in Small-Scale Fisheries” (Cham: Springer International Publishing, 2019), 56.

²⁸ *Ibid.*

²⁹ *Ibid.*, 70.

A core tension in recent studies of fisheries is the extent to which humans — and human impacts — should be centered in management policies and programs. One example of scholarship that centers the health of marine ecosystems, with less emphasis on the health of human communities reliant on marine resources, is Davor Vidas and Peter Johan Schei's book *The World Ocean in Globalisation*. Schei and Vidas focus on the devastating impacts of rising ocean temperatures on marine ecosystems.³⁰ Similarly, Yvon Le Maho and Joel Durant employ large-scale climate patterns as a conceptual framework for analyzing changes to local physical environments.³¹ Studying the impact of climate change on marine ecosystems is a crucial component of understanding shifting dynamics among fish-dependent communities, and thus should be factored into any calculus of sustainability; however, some scholars tackling fisheries from a social science perspective argue that human impacts should be taken into greater consideration. According to Rosemary Ommer and Ian Perry, fishery management tends to unduly separate fish from fishers, humans from nature — a dichotomous framework that, they argue, overlooks the interdependence between the two and the impacts of fish stock decline on fish-dependent communities.³²

Fishery Dynamics in the West African Context

Orthodox scholarly discourse on the sustainability crisis in West Africa's fisheries tends to place emphasis on illegal, unreported, and unregulated fishing (IUU) as the primary driver of unsustainable trends in fish stock decline. Take, for example, a 2017 study in *Frontiers in Marine Science* entitled *Assessing the Effectiveness of Monitoring Control and Surveillance of Illegal Fishing: The Case of West Africa*, which states Mauritania, Senegal, The Gambia, Guinea

³⁰ Peter Johan Schei and Davor Vidas, "The World Ocean in Globalisation: Challenges and Responses for the Anthropocene Epoch" (Leiden: BRILL, 2011), 8.

³¹ Joel Durant and Yvon Le Maho, "Impacts of Climate Change on Marine Ecosystems" (Leiden: BRILL, 2011), 134.

³² Ian Perry and Rosemary Ommer, "Social-Ecological Systems in Fisheries" (West Sussex: Wiley-Blackwell, 2011), 3.

Bissau, Guinea, and Sierra Leone collectively lose an estimated 2.3 billion USD annually due to IUU fishing.³³ Illegal fishing, according to the study, amounts to 65 percent of the reported catch from West Africa, raising concerns about both food security and economic stability.³⁴ The authors argue that economic gain is the primary incentive for illegal fishing, especially in the EEZs of countries with weak monitoring systems, such as Senegal and its neighbors.³⁵ They cite the main obstacles to combating IUU fishing in West Africa as poor governance, corruption, and high monitoring costs.³⁶

Similarly, the 2014 Africa Progress Report identifies IUU fishing as a primary driver of overexploitation of coastal fisheries in Africa.³⁷ The report states that most African governments have limited capacity to patrol their coastal waters, allowing IUU fishing to flourish.³⁸ Moreover, Northern governments — notably, the EU, Russia, and East Asian states — provide subsidies to support their domestic fishing fleets, many of which are involved in IUU fishing.³⁹ Senegal’s artisanal fishers are, according to the report, the “worst affected victims” of illegal commercial fishing in West Africa, as illegal catch continues to grow rapidly in the country.⁴⁰ According to the Overseas Development Institute, IUU fishing causes unsustainable exploitation of marine resources, erodes ocean ecosystems, and jeopardizes food security. Putting an end to illegal fishing, the Institute thus claims, is a crucial way to conserve ocean resources;⁴¹ its recommendations to combat IUU fishing on a regional level include improving transparency,

³³ Alkaly Doumbouya et al., *Assessing the Effectiveness of Monitoring Control and Surveillance of Illegal Fishing* (Frontiers in Marine Science 4, 2017), 1.

³⁴ Ibid.

³⁵ Ibid., 2.

³⁶ Ibid.

³⁷ Africa Progress Report, *Grain, Fish, Money: Financing Africa’s Green and Blue Revolutions* (Africa Progress Report, 2014), 87.

³⁸ Ibid., 92.

³⁹ Ibid., 89.

⁴⁰ Ibid., 93.

⁴¹ Overseas Development Institute, *Western Africa’s missing fish* (London: Overseas Development Institute, 2016), 10.

enhancing port measures, scaling up international aid and technical support for West African countries, and strengthening regulation.⁴²

Some scholars, however, raise the question: should illegal fishing play a central role in analyses of the root causes of fish stock decline in West Africa? Researcher André Standing points out that legality is ambiguous in the context of fisheries, so a focus on activity that is technically illegal fails to address the broader set of dynamics that shape unsustainable fishing activity. Legal fishing, Standing argues, contributes to the very problems highlighted in the illegal fishing discourse.⁴³ An emphasis on illegal fishing therefore works to “distract attention from more progressive movements and narratives.”⁴⁴ Standing offers an alternative framework to challenge the orthodox illegal fishing discourse — the framework of state-corporate crime. Standing underscores the “criminogenic relationships between corporate and state actors in fisheries, which in wider perspective can be read as an example of how natural resources are integral to the process of neo-colonialism in Africa”; in other words, political and business elites jointly pursue profit maximization at the expense of environmental sustainability and the well-being of fishers.⁴⁵

This concept of state-corporate crime also challenges the orthodox wealth-based approach to Africa’s fisheries crisis promoted by the World Bank and others, which advocates for transferable user rights for companies, citing open access, or the “tragedy of the commons,” as the root cause of the fisheries crisis.⁴⁶ The orthodox approach among international organizations also focuses on illegal fishing, pointing to the weak law enforcement capabilities of poorer countries as another root cause of the crisis — a “fish pirates” rhetoric.⁴⁷ Standing, on the other

⁴² Ibid., 32.

⁴³ Standing, *Mirage of Pirates*, 193.

⁴⁴ Ibid., 194.

⁴⁵ Ibid., 176.

⁴⁶ Ibid., 175.

⁴⁷ Ibid., 176.

hand, asserts that both the state where fishing takes place (the host country) and the foreign government (the home country) are implicated in the damage caused by corporations, either through direct action or omission.⁴⁸ For example, firms pay bribes to host country governments to circumvent the law, and fishing firms achieve regulatory capture through political lobbying and ties with political elites. Standing provides case studies of state involvement in corporate crime; foreign nations, for instance, often make aid payments conditional on fisheries access, as is the case with Russian development assistance to Senegal which was used to pressure the Senegalese government to authorize industrial fishing, consequently threatening sustainability.⁴⁹ Foreign distant water fishing nations also provide subsidies to their domestic fishing firms — and efforts to reform these damaging fisheries subsidies through the WTO have been slow.⁵⁰

Fishery Dynamics in the Senegalese Context

Fish and fish products are Senegal's main export, accounting for more than 10 percent of GDP.⁵¹ Senegal's artisanal fishing sector lands 80 percent of fish in the country.⁵² Expansion of Senegal's domestic fishing industry has been among the Senegalese government's policy priorities in recent decades, in recognition of the economic value of the industry. At the core of this industry expansion since the late 1970s is a fraught history of access agreements with foreign fishing fleets, contributing in a significant way to depletion of fish stocks in Senegal's EEZ.

In the 1970s and 1980s, the Senegalese government's strategy to expand the domestic fishery was two-pronged: first, providing small-scale fishers with motors to allow them to fish

⁴⁸ Ibid., 186.

⁴⁹ Ibid., 189.

⁵⁰ Ibid., 190.

⁵¹ Jori Lewis and Randy Olson, *Rough Seas: Senegal's Threatened Fisheries* (The Virginia Quarterly Review, 2010), 34.

⁵² CAOPA and REJOPRAO, *Voices from African Artisanal Fisheries*, 8.

farther out at sea and thus further exploit fish stocks for export to Europe or Asia,⁵³ and second, opening up territorial waters to foreign fleets. In 1979, the EU signed its first bilateral access agreement with Senegal, and China and the Soviet Union followed suit shortly thereafter.⁵⁴ Access agreements with foreign fleets sparked a massive increase in total catch, from about 50,000 metric tons in 1965 to 390,000 metric tons in 2000.⁵⁵ The late 1990s marked a shift in national fishery policy, as the government phased out authorizations for industrial fishing vessels targeting small pelagics; industrial fishing in Senegal became theoretically limited to bottom dwelling species and migratory tuna and billfish for export to Europe and Asia.⁵⁶ In 2005, Senegal's fishing authorities rejected bilateral fishing agreements in favor of joint-venture partnerships between foreign and Senegalese firms instead, encouraged through tax incentives.⁵⁷

However, despite seemingly positive policy changes to somewhat limit the industrial fishing presence in Senegalese waters, controversy erupted in 2010 when Senegal's minister of maritime affairs authorized several Russian super trawlers to target small pelagic fish species; the process was opaque and authorities resisted releasing updated information about the legal status of foreign trawlers.⁵⁸ Along with Russian super trawlers, several vessels owned by China Fisheries — a subsidiary of Pacific Andes, the world's largest fishing company — gained authorizations to fish in Senegalese waters in 2011 and 2012,⁵⁹ sparking protests in the capital city, Dakar, in March 2011⁶⁰ and allegations of corruption due to the secretive nature of the licensing arrangement.⁶¹ In 2012, newly-elected President Macky Sall promised to quell unrest

⁵³ Lewis and Olson, *Rough Seas*, 30.

⁵⁴ Standing, *Mirage of Pirates*, 177.

⁵⁵ Lewis and Olson, *Rough Seas*, 32.

⁵⁶ Standing, *Mirage of Pirates*, 177.

⁵⁷ *Ibid.*

⁵⁸ *Ibid.*, 178.

⁵⁹ *Ibid.*, 181.

⁶⁰ *Ibid.*, 182.

⁶¹ *Ibid.*, 183.

by ending licenses with foreign trawlers — he was even awarded the Peter Benchley Award for ocean conservation — before later clarifying that revoking fishing agreements was merely a temporary measure.⁶²

Joint ventures between Senegalese and foreign industrial fishing companies is another domestic fisheries practice of great concern. Foreign vessels can carry the Senegalese flag, though most of the fish caught through these joint ventures is exported to foreign markets, thus failing to address local food insecurity. A lack of transparency adds an additional layer of concern when it comes to joint ventures. Since 1996, Senegal has not required joint venture vessels to have observers on board to monitor compliance with Senegalese law regarding fishing activity, including respect for authorized fishing areas and allowed quantity of catch.⁶³

Beyond analyzing fisheries policy and access agreements, scholars and research centers have attempted to tackle the question: how are Senegalese fishers responding to depleted fish stocks? Thomas Binet and his co-authors identify three overarching categories of adaptation strategies: local and regional migration in search of fish in more remote areas, intensification of fishing activities in zones that are already overexploited by using more destructive techniques or targeting new under-exploited species, and illegal migration to Europe.⁶⁴ The intensification of fishing activities includes turning to more efficient yet ecologically demanding fishing practices in response to fish stock decline; these include fishing with dynamite and with nylon mono-filament nets.⁶⁵ Migratory patterns are also a central topic within literature on fishers' adaptation strategies — migration as a dual phenomenon comprising seasonal movements on the one hand, and long-distance movements for longer-term settlement on the other.⁶⁶ Some scholars

⁶² Ibid., 184.

⁶³ CAOPA and REJOPRAO, *Voices from African Artisanal Fisheries*, 11.

⁶⁴ Thomas Binet et al., *Migration of Senegalese Fishers: A Case for Regional Approach to Management* (Maritime Studies, 2012).

⁶⁵ CAOPA and REJOPRAO, *Voices from African Artisanal Fisheries*, 9.

⁶⁶ Binet et al., *Migration of Senegalese Fishers*.

identify migration of Senegalese small-scale fishers since the 1970s as a primary cause of fish stock decline in West Africa, the proposed solution being a regional fisheries management framework.⁶⁷ In the 1980s, seasonal part-time movement morphed into forced long-term migration due to environmental changes.⁶⁸ Migration to the Canary Islands and then Europe has become a survival mechanism for fishers, a last — and often dangerous — resort in the face of threats to their livelihoods.⁶⁹ A devastating shipwreck off the coast of Senegal in October 2020, in which a boat destined for the Canary Islands sank and killed at least 140 migrants, marks just the latest tragedy linked to forced migration to Europe among Senegalese fishers.⁷⁰

⁶⁷ Ibid.

⁶⁸ Ibid.

⁶⁹ Lewis and Olson, *Rough Seas*, 41.

⁷⁰ Michael Levenson, “At Least 140 Drown in Worst Shipwreck of 2020, U.N. Agency Says” (New York Times, 2020).

Chapter 1: Overview and History of Senegalese Fisheries

Overview of Senegalese Fisheries

Though fishing has been a core activity throughout West Africa for centuries, Senegal's economic reliance on its fisheries sector dates back to the 1980s, when a severe drought in the Sahel drastically decreased rainfall in the region.⁷¹ An agriculture crisis ensued as cash crop farming dwindled; many Senegalese whose livelihoods were previously dependent on agriculture were forced to move to the coast in a search of work in fisheries, given the relative availability of opportunities in this sector — a shift that prompted a notable increase in fishing activity in Senegalese waters.⁷² In 1986, fisheries surpassed groundnut products and phosphate to become the country's largest exporting sector; it now comprises more than one third of the value of foreign sales, an indication of the Senegalese government's efforts to improve the balance of trade through fisheries exports. Data from the Food and Agriculture Organization of the United Nations (FAO) reveals a steady increase in exports of fish and fishery products since 1980.⁷³

The drought and subsequent agricultural crisis of the 1980s was coupled with growing marine resource scarcity throughout this same decade. Commercial stocks began to exhibit indications of depletion by the 1980s, both in Senegal's Exclusive Economic Zone (EEZ) and those of neighboring countries, prompting a significant shift in migration strategies among Senegalese fishers. During this time, long-term migration to exploit new fish stocks replaced the seasonal part-time movement that had previously dominated migratory patterns. This transition

⁷¹ Steff Gaulter, "Analysis: Understanding the Sahel drought," *Al Jazeera*, June 22, 2012, <https://www.aljazeera.com/news/2012/6/22/analysis-understanding-the-sahel-drought#:~:text=The%20most%20severe%20drought%20was,average%20for%20the%20past%20century.&text=The%20onset%20is%20usually%20in,falling%20between%20July%20and%20September>.

⁷² Laurence Grun and Pierre Vannestem "The Senegalese fishermen trapped between hunger and exile," *Equal Times*, September 12, 2020, https://www.equaltimes.org/the-senegalese-fishermen-trapped?lang=en#_YD1YkZNKib8.

⁷³ "Fishery and Aquaculture Country Profiles: The Republic of Senegal," *FAO Fisheries Division*, <http://www.fao.org/fishery/facp/SEN/en>.

was an indication that fishing migration was becoming a type of forced migration due to resource scarcity.⁷⁴

The decline of agriculture and livestock breeding in recent decades has also heightened the importance of fisheries for domestic food security, with fish products accounting for about seventy-five percent of animal protein intake for Senegalese populations. As the price of meat increases, low-income households in particular are becoming increasingly reliant on fish as a source of protein. Moreover, Senegal's fisheries sector is deeply linked to employment nationwide. Beyond the estimated 63,000 direct jobs for Senegalese nationals as fishers, the sector employs about fifteen percent of the country's labor force — approximately 600,000 people, including fish processors and merchants, among others.⁷⁵

Senegalese fisheries can be divided into two categories: artisanal and industrial. The Food and Agriculture Organization of the United Nations (FAO) defines artisanal fisheries as “traditional fisheries involving fishing households (as opposed to commercial companies), using relatively small amount of capital and energy, relatively small fishing vessels (if any), making short fishing trips, close to shore, mainly for local consumption,” though artisanal fishing activities can encompass landings for both local consumption and export.⁷⁶ Artisanal fisheries in Senegal account for about ninety percent of all landings, making artisanal fishing the country's predominant sub-sector in terms of catches. The Senegalese artisanal fishing fleet is also the largest in the sub-region.⁷⁷ Coastal pelagic species — that is, fish species found in waters near neither the bottom of the ocean nor the shore⁷⁸ — account for the majority of landings in

⁷⁴ Thomas Binet, Pierre Failleur, and Andy Thorpe, “Migration of Senegalese fishers: a case for regional approach to management,” *Maritime Studies*, June 6, 2012, <https://link.springer.com/article/10.1186/2212-9790-11-1>.

⁷⁵ “Senegal,” *Sub-Regional Fisheries Commission*, <https://spsrpf.org/en/senegal>.

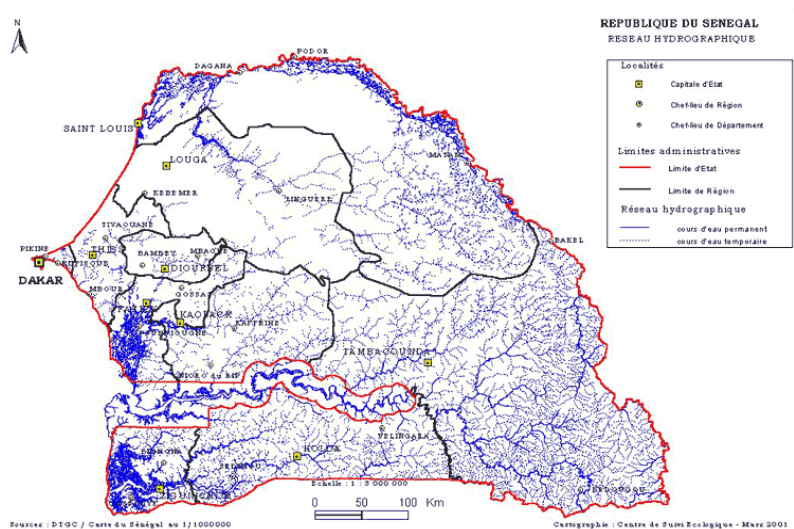
⁷⁶ “Family Farming Knowledge Platform: Artisanal Fisheries,” *FAO*, <http://www.fao.org/family-farming/detail/en/c/335263/>.

⁷⁷ “Senegal,” *Sub-Regional Fisheries Commission*, <https://spsrpf.org/en/senegal>.

⁷⁸ “What are pelagic fish?” *National Ocean Service*, <https://oceanservice.noaa.gov/facts/pelagic.html>.

Senegal’s artisanal sector; among these pelagic species are sardinella, bonga, anchovies, horse mackerel and mackerels. The inland artisanal sector, active in Senegal’s river deltas, mainly targets finfish, crustaceans and molluscs.⁷⁹ Senegalese industrial fishing vessels, on the other hand, include trawlers and tuna boats. According to the Sub-Regional Fisheries Commission, the national industrial fleet amounted to 104 trawlers and eight tuna boats in 2015.⁸⁰

Senegal’s coastal fisheries consist of three geographic regions: north, central, and south. In the northern zone, the village of Kayar is the most significant fishing center; the Senegal River, which runs along the northern border with Mauritania, is another hotspot for fishing activity in this region. The towns of Mbour and Joal are the two primary coastal fishing centers in the central zone, which also encompasses the Sine Saloum delta region — an important site for inland fishing activity. Lastly, the southern fishing zone situated south of The Gambia includes the Casamance region and, notably, the Casamance River.⁸¹



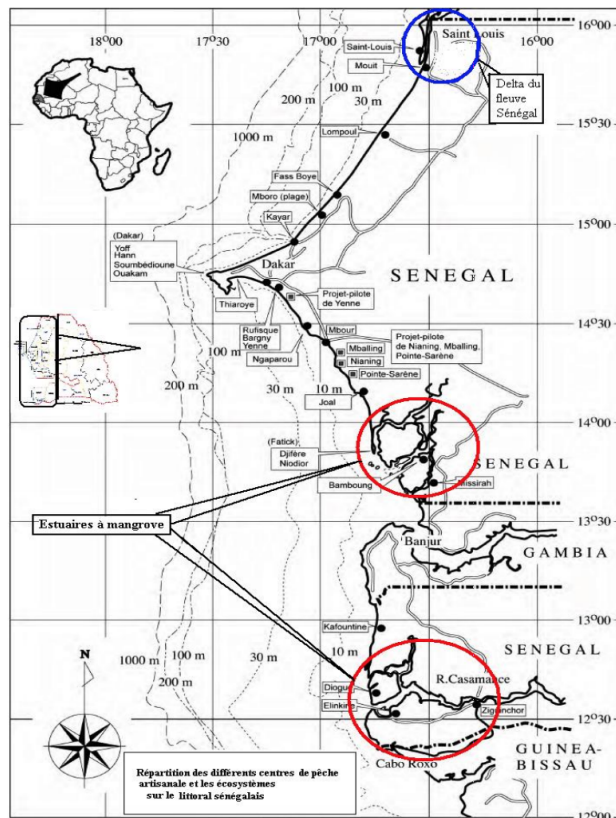
Hydrographic map of Senegal.⁸²

⁷⁹ “Fishery production system report 2008: Senegal Artisanal fisheries sub-sector,” *Fisheries and Resources Monitoring System*, <http://firms.fao.org/firms/fishery/473/en>.

⁸⁰ Ibid.

⁸¹ Massal Fall, “Pêcherie démersale côtière au Sénégal – Essai de modélisation de la dynamique de l’exploitation des stocks,” *Université Montpellier 2*, November 6, 2009, 20-21.

⁸² “Plan National d’Adaptation du Secteur de la Pêche et de l’Aquaculture Face au Changement Climatique: Horizon 2035,” *République du Sénégal*, October 2016, <http://extwprlegs1.fao.org/docs/pdf/Sen186289.pdf>, 23.



Map of Senegal's artisanal fishing zones.⁸³

Since the 1970s, Senegal has experienced a steady increase in marine protected area coverage — that is, areas where certain human activities, such as destructive fishing practices, are prohibited or limited to protect marine ecosystems. These marine protected areas (MPAs) include waters near the fishing communities of Saint Louis, Kayar, and Joal-Fadiouth, among others. In 2004, Senegal's former Fisheries Minister Pape Diouf announced the creation of four MPAs in country's coastal zone by stating, "These marine protected areas will be crucially important for Senegal to preserve the rich biodiversity of our coastal resources and to protect our fisheries, which are being depleted by excessive fishing."⁸⁴

⁸³ Ibid., 25.

⁸⁴ "Senegal declares four new marine protected areas," *World Wildlife Fund*, September 16, 2003, https://wwf.panda.org/wwf_news/?8817/Senegal-declares-four-new-marine-protected-areas#:~:text=Four%20marine%20protected%20areas%20have%20covering%20more%20than%207%2C500km2.&text=The%20new%20marine%20protected%20areas.in%20the%20last%20five%20decades.

Assessing Fish Stock Decline

Yet despite conservation initiatives such as MPAs, FAO data and academic studies indicate notable declines in numerous fish stocks off the coast of Senegal. Although an absence of recent, comprehensive data on the state of Senegal's fish stocks makes it difficult to quantify fish stock decline with precision, the data that is available paints a picture of dwindling resources. These findings are in line with artisanal fishers' personal observations of and struggles with intensified resource scarcity. A 2018 study on the state of coastal demersal stocks in Senegalese waters — species found near the bottom of the sea — concludes that “the biomass [total weight of the stock in the ecosystem] of many coastal demersal stocks has drastically fallen and alarming signs of overfishing are currently known,” adding that this observed fishing pressure is due to activity by both small-scale and industrial fleets targeting demersal fish. According to the study, three fifths of demersal stocks in Senegal are overexploited. Moreover, assessments of five coastal demersal fish stocks thought to be key indicator species — *Epinephelus aeneus*, *Pagellus bellottii*, *Galeoides decadactylus*, *Pseudupeneus prayensis*, and *Sparus caeruleostictus* — reveal a fourfold decline in abundance from 1983 to 1998.⁸⁵

A 2004 FAO report on the general situation of the world's fish stocks — in which fish stocks worldwide are ranked as either "overexploited," "depleted," or "recovering" — identifies flatfish stocks and octopus in Senegal and Mauritania as being overexploited. The FAO defined overexploited stocks as those that are “exploited at above a level which is believed to be sustainable in the long term, with no potential room for further expansion and a higher risk of stock depletion/collapse.”⁸⁶ In a 2019 report, the FAO's Fishery Committee for the Eastern Central Atlantic (CECAF) published an assessment of the state of small pelagic stocks in the

⁸⁵ Kamarel Ba et al, “Long-term fishing impact on the Senegalese coastal demersal resources: diagnosing from stock assessment models,” *Aquatic Living Resources*, 2018.

⁸⁶ “General situation of world fish stocks,” *FAO*, <http://www.fao.org/newsroom/common/ecg/1000505/en/stocks.pdf>.

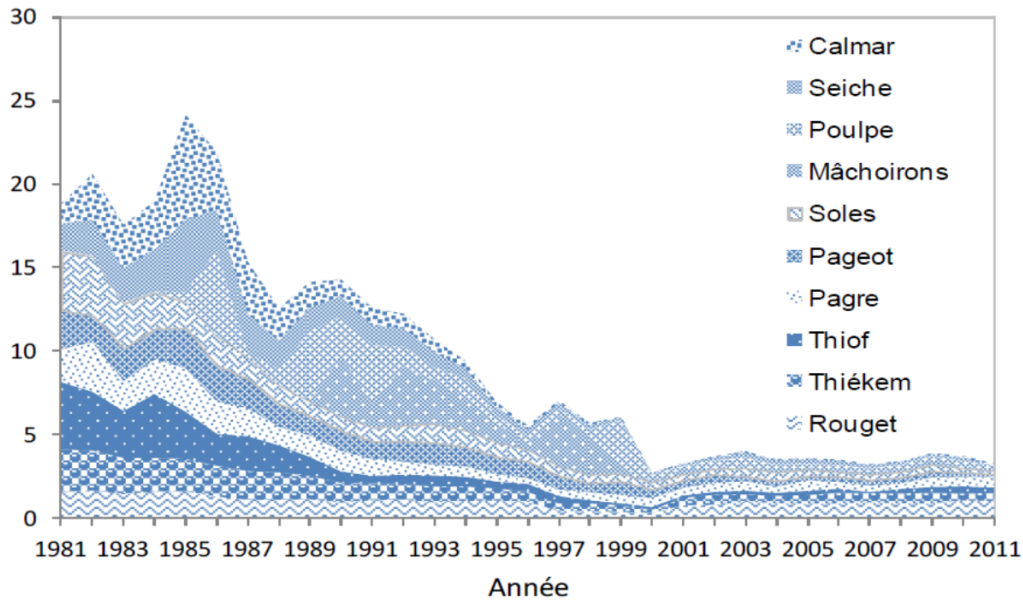
region. Though this report excludes data from Senegalese waters, it nonetheless provides a relevant analysis of regional stocks, many of which are migratory and thus impact Senegalese livelihoods as well. Among the report’s key findings is that three species — bonga and two sardinella species — are overexploited in the Eastern Central Atlantic region, where Senegal is situated. The report states, “While no formal assessment could be conducted for the two species of sardinella due to lack of data, other indicators point to overexploitation. Urgent action is needed to rebuild the stocks of round sardinella.”⁸⁷

According to a study on fisheries catch misreporting in Senegal published in 2014, artisanal catches from Senegalese waters have decreased despite increasing fishing activity in the artisanal sector, which points to over-capacity.⁸⁸ A 2016 report from the Senegalese government on threats to the country’s fisheries states that since the 1960s, there has been a fifty to eighty percent reduction in the quantity of fish in Senegal’s territorial waters.⁸⁹ Moreover, since the 1980s, there has been a decline in indices of abundance — estimates of the size of populations in a particular ecosystem — for ten fish species of high commercial value in Senegal’s EEZ:

⁸⁷ “FAO Working Group on the Assessment of Small Pelagic Fish off Northwest Africa 2019,” *Fishery Committee for the Eastern Central Atlantic*, 2019, <http://www.fao.org/3/cb0490en/cb0490en.pdf>.

⁸⁸ Dyhia Belhabib et al., “Fisheries catch misreporting and its implications: The case of Senegal,” *Fisheries Research*, Vol. 151, March 2014, <https://www.sciencedirect.com/science/article/abs/pii/S0165783613003007>.

⁸⁹ “Plan National d’Adaptation du Secteur de la Pêche et de l’Aquaculture Face au Changement Climatique: Horizon 2035,” *République du Sénégal*, October 2016, <http://extwprlegs1.fao.org/docs/pdf/Sen186289.pdf>, 10.



Indices of abundance for species of high commercial value in Senegal.⁹⁰

This data on fish stock decline underscores the need to center marine resource conservation in policy making, given the mounting threats to food and livelihood security posed by such a notable reduction in the quantity of fish in Senegal’s EEZ.

The Impact of Climate Change on Marine Ecosystems

Fisheries are particularly vulnerable to the impacts of climate change, and West Africa’s fisheries are no exception. Studies on the impact of climate change on regional fisheries highlight ocean warming, as evidenced by increases in warmer water species in landings. The composition of species in fish catches in West Africa have changed in recent years due to climate change.⁹¹ As climate change causes rising sea temperatures, fish stocks tend to migrate to colder waters farther from the equator, which in turn influences the abundance of fish stocks in equatorial regions. If CO2 emissions remain high in the coming years, fish catches could diminish by 7.7 percent globally by 2050. Along with ocean warming, rising sea levels is another

⁹⁰ Ibid., 28.

⁹¹ Dyhia Belhabib et al., “Overview of West African fisheries under climate change: Impacts, vulnerabilities and adaptive responses of the artisanal and industrial sectors,” *Marine Policy*, Vol. 71, September 2016. <https://www.sciencedirect.com/science/article/abs/pii/S0308597X16302901>.

direct impact of climate change; this phenomenon has the potential to cause flooding of coastal zones and thus put coastal populations at risk, as has already been the case in West African countries like Sierra Leone.⁹²

Rising sea levels can also disrupt certain marine species' natural migration patterns and even cause the disappearance of some species. According to an article from the Brookings Institution, during the twentieth century, the sea level in West Africa rose by an average of 1.7 mm per year, or 17 cm in 100 years. The article goes on to make a worrying projection: "This trend is quickening, with current estimates projecting around a 30 to 50 cm rise between 1990 and 2100."⁹³ Further harms to coastal infrastructure and marine ecosystems in West Africa are inevitable if sea levels continue to rise rapidly in the region.

A 2016 government report, jointly issued by Senegal's Ministry of Environment and Sustainable Development and its Ministry of Fisheries and Maritime Economy, identifies adaptation to the effects of climate change as a primary challenge that must be addressed in the domestic fisheries sector. According to the report, the already-visible obstacles driven by climate change include: coastal erosion, destruction of coastal infrastructure, flooding, and the reduction or migration of resource-rich marine zones that play a crucial social, economic, and ecological role for the country as a whole.⁹⁴ A study conducted by the Oceanographic Research Center of Dakar-Thiaroye from 1970 to 1997 found an increase in the salinity — the salt concentration — of Senegalese waters during this time period in four coastal regions: Saint Louis, Kayar,

⁹² Magda Lovei, "Climate Impacts on African Fisheries: The Imperative to Understand and Act," *World Bank Blogs*, November 11, 2017, <https://blogs.worldbank.org/nasikiliza/climate-impacts-on-african-fisheries-the-imperative-to-understand-and-act>.

⁹³ Ahmadou Aly Mbaye, "Africa's climate crisis, conflict, and migration challenges," *Brookings Institution*, September 20, 2019, <https://www.brookings.edu/blog/africa-in-focus/2019/09/20/africas-climate-crisis-conflict-and-migration-challenges>.

⁹⁴ "Plan National d'Adaptation du Secteur de la Pêche et de l'Aquaculture Face au Changement Climatique: Horizon 2035," *République du Sénégal*, October 2016, <http://extwprlegs1.fao.org/docs/pdf/Sen186289.pdf>, 10.

Thiaroye, and Mbour.⁹⁵ This finding is relevant to climate change adaptation plans, since rising salinity could lead to severe flooding in the near future, thus putting a further strain on Senegal's already-struggling fisheries.⁹⁶ As stated in the 2016 government report on climate change adaptation, poverty and food insecurity are among the key risks linked to climate change in the country's fisheries sector, as the aforementioned ecological changes and damage to coastal communities continue to threaten fishing livelihoods nationwide.⁹⁷

Marine Pollution: An Additional Harm to Ecosystems

Hann Bay, a coastal neighborhood in the Senegalese capital once known for its expansive beaches, is now overwhelmed by industrial waste. Oil reservoirs and chemical factories situated near the coast are the source of much of this pollution in the bay, which is the location of seventy percent of the factories on the Dakar peninsula.⁹⁸ Hann Bay's polluted shores are a clear indication of the threat to marine ecosystems, and thus to artisanal fishing livelihoods, posed by pollution. Marine pollution from industrial and plastic waste is, in tandem with climate change, a mounting environmental concern with direct impacts on artisanal fisheries.

Water pollution, enabled by an insufficient municipal waste collection system in many coastal areas, is driving fish stocks further offshore, away from artisanal fishing zones. Single-use plastics are widely used in Senegal; large quantities of plastic waste end up on Senegal's beaches, eventually making their way into the ocean and damaging marine ecosystems.⁹⁹ In 2015, the Senegalese government banned single use plastic bags in an effort to

⁹⁵ Ibid., 13.

⁹⁶ "With a pinch of salt," *NASA: Global Climate Change*, April 19, 2009, <https://climate.nasa.gov/news/58/with-a-pinch-of-salt/>.

⁹⁷ "Plan National d'Adaptation du Secteur de la Pêche et de l'Aquaculture Face au Changement Climatique: Horizon 2035," *République du Sénégal*, October 2016, <http://extwprlegs1.fao.org/docs/pdf/Sen186289.pdf>, 15.

⁹⁸ "Once pristine waters now a health hazard," *The New Humanitarian*, May 23, 2005, <https://www.thenewhumanitarian.org/fr/node/222123>.

⁹⁹ Nic Bothma, "Senegal Plastic Waste Crisis," *European Pressphoto Agency*, 2019, <https://www.epa.eu/photo-essays/2019/senegal-plastic-waste-crisis>.

reduce plastic waste, though these efforts have failed to curtail the litter still seen across Senegal's beaches and coastal waters.¹⁰⁰ Industrial waste from factories and plastic waste are two of the main drivers of the water pollution posing a mounting threat to marine ecosystems.

'We're Losing Hope': Observations of Fish Scarcity

Ibrahima Mar spent his youth as a fisherman in Rufique, a coastal city in Senegal's Dakar region. In 1986, he dropped out of school to devote his time to pursuing a livelihood out at sea. Mar lives and works in his hometown of Rufique to this day, now in an advocacy role as coordinator of the city's local artisanal fisheries council. His interest in advocating on behalf of local artisanal fishing communities stems from his personal observations of increasing marine resource scarcity since his childhood. "There have been many changes in regards to fishing," Mar explained. "Since I've been a fisherman, I've been hopeful to make enough to keep my family afloat. But this past decade, fishing has really diminished, and we're losing hope." It would typically be natural for Mar's son to take his place and go out to sea, continuing the family's history of fishing. Mar, however, does not want him to do so. "The ocean doesn't pay anymore," he said.

Mar has noticed fishing practices change dramatically since the 1980s, with a particularly notable shift beginning in the early 2000s. When he first took up fishing in the 1980s, he did not have to go far to secure a sizable catch — fifteen to twenty-five kilometers according to his estimates, compared to the nearly forty kilometers fishers now often have to travel to find fish. Distance is just one factor in flux; time spent at sea is another. Today, Mar said many fishers need to spend two days at sea to find enough fish to sustain their livelihoods. Among the fish he has observed decline in recent years are mackerel species and tuna. These species, he said, were

¹⁰⁰ "Top plastic polluter Senegal pledges to clean up its act," *Africa News*, July 30, 2019, <https://www.africanews.com/2019/07/30/top-plastic-polluter-senegal-pledges-to-clean-up-its-act/>.

abundant when he first entered the fishing sector a few decades ago. “All these fish — we don’t see them anymore,” Mar lamented.¹⁰¹

Mor Mbengue, who is now the national coordinator of the Union Nationale des Pêcheurs Artisans du Sénégal (UNAPAS), grew up in the coastal fishing town of Kayar. He entered Kayar’s fishing sector in 1998 — a decade after Ibrahima Mar took up fishing in Rufisque — thanks to an abundance of fish at the time. Mbengue’s father was a fisherman, too; his decision to follow in his father’s footsteps was influenced by the general sense of optimism in Kayar in the 1990s regarding the ability to make a decent livelihood from fishing. Now, like Mar, Mbengue worries about the future of the sector. “We used to fish less and gain much more. The fish has diminished,” Mbengue explained. Mbengue has also taken note of a tendency among fishers to spend more time at sea and travel greater distances, practices that are spurred by necessity as resources become increasingly depleted.¹⁰²

Observations of fish scarcity extend far beyond fishers; Senegal’s artisanal fish processors, almost all of whom are women, are also experiencing the devastating effects of resource depletion on their livelihoods. Artisanal fish processors purchase fish caught by fishers, often small pelagic species, and process it for local consumption. Diaba Diop is president of the Réseau des Femmes de la Pêche Artisanale du Sénégal (REFEPAS), a network of women in Senegal’s artisanal fishing sector that advocates for women’s participation in public policy related to fisheries. Diop expressed concern about a notable decline in abundance of fish and, consequently, a dramatic increase in the price of fish, making it increasingly difficult for fish processors to afford the resources they need to sustain their livelihoods. “Those places where we used to process large quantities of fish, we no longer can,” Diop explained. “It’s so expensive

¹⁰¹ Ibrahima Mar, interview by author, February 1, 2021.

¹⁰² Mor Mbengue, interview by author, February 2, 2021.

that we can't access the resource, especially small pelagics. And the population lives on small pelagics." According to Diop, "everyone knows that in Senegal, fish is becoming more and more rare."¹⁰³ For Diop, fish stock decline is evident in her daily work as an advocate and as a professional fish processor herself. Even without comprehensive data on the state of fish stocks in Senegalese waters, her personal observations leave no room for doubt about the strain on marine resources and the subsequent impacts on livelihoods in artisanal fisheries.

¹⁰³ Diaba Diop, interview by author, March 9, 2021.

Chapter 2: National Policy and Civil Society

The Senegalese government has in recent years made public gestures aimed at cultivating an image of support for the country's artisanal fishing communities. In June 2020, in the midst of compounded economic strain from the COVID-19 pandemic, the Ministry of Fisheries and Maritime Economy launched an initiative in collaboration with the European Union to distribute modern equipment — including geolocation technology and motors, as well as fiberglass boats to replace the traditional wooden pirogues, life vests, and weather forecast technology — to artisanal fishers in the southern Ziguinchor and northern Saint-Louis regions.¹⁰⁴ Alioune Ndoye, Senegal's Minister of Fisheries, referred to this modernization effort as a step towards improved security for artisanal fishers. However, at a ceremony announcing the 2020 equipment distribution initiative, Ndoye characterized security at sea as being first and foremost an individual responsibility, stating in a comment directed towards the recipients of the equipment, "I therefore appeal to your sense of responsibility and urge you to comply with the regulatory provisions in this area."¹⁰⁵

Artisanal fisher Abdoulaye Ndiaye, on the other hand, said he sees broader public policy failures as being at the root of increasing strain on Senegal's artisanal fishing livelihoods. He now works as an oceans campaigner for Greenpeace Africa, his personal observations of the dramatic shifts in his hometown's fishing sector over the past decade having propelled him to a career in advocacy — to fight for policies, both national and regional, that promote the sustainability of artisanal fishing in the years to come. Among Ndiaye's priorities in his political advocacy: fighting against fishing agreements between the Senegalese government and foreign

¹⁰⁴ Mamadou Gueye, "Des équipements modernes aux pêcheurs artisans de Ziguinchor et Saint-Louis," *Le Soleil*, June 28, 2020, <http://lesoleil.sn/des-equipements-modernes-aux-pecheurs-artisans-de-ziguinchor-et-saint-louis/>.

¹⁰⁵ Ibid.

distant water fishing fleets (DWFs),¹⁰⁶ which allow foreign industrial fleets to fish in Senegal's 200 nautical mile Exclusive Economic Zone (EEZ).

EU-Senegal Bilateral Fishing Agreement: Recent History and Controversy

The European Union is among the foreign entities with permission, through Sustainable Fisheries Partnerships Agreements (SFPAs), to fish in Senegalese territorial waters. Senegal's first fishing agreement with the EU dates back to 1979.¹⁰⁷ According to the European Commission, these EU bilateral agreements with African states provide “financial and technical support in exchange for fishing rights”¹⁰⁸ — a framing that promises responsible fishing practices and alludes to benefits for African states' development. Yet the past fifteen years have seen growing resistance to the presence of EU industrial vessels in Senegalese waters, prompting a volatile push-and-pull dynamic in which Senegalese government officials have at times been pressured to revoke or suspend EU access agreements in the name of sustainability of marine resources. In 2006, the Senegalese government refrained from renewing its previous agreement with the EU in an effort to reduce pressure on coastal demersal fish stocks.¹⁰⁹ This move came in the context of particularly perilous and deadly attempts by Senegalese fishers to reach Spain's Canary Islands in search of economic opportunities on European soil.¹¹⁰ However, despite such attempts from the Senegalese government to alleviate pressure on fish stocks from EU industrial fishing, Senegal's former Minister of Fisheries Haidar Al-Ali told Public Radio International that

¹⁰⁶ Abdoulaye Ndiaye, interview by author, January 28, 2021.

¹⁰⁷ “Senegal,” *Sub-Regional Fisheries Commission*, <https://spsrpf.org/en/senegal>.

¹⁰⁸ “Bilateral Agreements with Countries Outside the EU,” European Commission, September 16, 2016. https://ec.europa.eu/fisheries/cfp/international/agreements_en.

¹⁰⁹ “Joint answer given by Mr Borg on behalf of the Commission,” Parliamentary questions - European Parliament, September 15, 2006.

<https://www.europarl.europa.eu/sides/getAllAnswers.do?reference=E-2006-3216&language=EN>.

¹¹⁰ Meaghan Beatley and Sam Edwards, “Overfished: In Senegal, Empty Nets Lead to Hunger and Violence,” *Medium*, May 30, 2018.

<https://gpinvestigations.pri.org/overfished-in-senegal-empty-nets-lead-to-hunger-and-violence-e3b5d0c9a686>.

European companies found a loophole: partnering with Senegalese businesses to continue exporting their catch.¹¹¹

In 2012, newly-elected Senegalese president Macky Sall responded to outcry from civil society organizations by rejecting fishing authorizations for 29 foreign vessels, five of which were EU vessels. Of the remainder, 12 were from Russia's distant water fleet and the rest were flying flags of convenience.¹¹² Addressing the nation on April 3, 2018 after his election to the presidency, Sall proclaimed his commitment to addressing concerns surrounding fishing agreements with foreign vessels, stating: "There is an urgency to take action in the fishing sector. I am determined to revisit the conditions for granting fishing licenses and fight against pirate vessels that plunder our resources."¹¹³

Macky Sall's rejection of EU fishing licenses at the very start of his presidency, while indicative of a notable shift towards recognition of the need for policies that promote the sustainability of the country's artisanal fishing sector, was short-lived. Just two years later, in November 2014, Sall's administration signed a new fishing agreement with the EU, described by the European Commission as a "tuna fishery agreement with a limited demersal hake component." Under this five-year agreement, vessels from France and Spain — 28 tuna seiners, 10 pole-and-liners, 5 longliners, and two trawlers — were granted access to Senegal's EEZ. While focused primarily on tuna, the agreement also allowed for access to fishing for black hake, a deep demersal species.¹¹⁴ According to the European Commission, this agreement, which was in effect from 2014 to 2019, "contributes to sustainability of the fish stocks, protection of the

¹¹¹ Ibid.

¹¹² Charlotte Bozonnet, "Contrôle des pêches : le Sénégal ouvre le ban," *Le Monde*, July 6, 2012. https://www.lemonde.fr/international/article/2012/07/06/controle-des-peches-le-senegal-ouvre-le-ban_1730373_3210.html.

¹¹³ Ibid.

¹¹⁴ "Senegal: Sustainable fisheries partnership agreement," Fisheries - European Commission, September 16, 2016, https://ec.europa.eu/fisheries/cfp/international/agreements/senegal_en.

local fishermen and food security, strict controls and support to the fight against illegal, unreported and unregulated fishing (IUU).¹¹⁵ An agreement with similar provisions, including EU financial contributions to the Senegalese government amounting to 1.7 million euros in exchange for fishing rights, was renewed for an additional five years in 2019.¹¹⁶ The Delegation of the European Union to Senegal released a statement in November 2020 asserting that the fishing quotas outlined in the new EU-Senegal agreement do not interfere with artisanal fishing activity.¹¹⁷ At a meeting in November 2020, Irene Mingasson — Ambassador of the European Union to Senegal — affirmed in reference to the recently-renewed agreement: “Our objective is to ensure, in this framework, sustainable management of fisheries and especially to not empty the oceans ... we will only fish if there is enough fish for everyone.”¹¹⁸

Some artisanal fishers and environmental activists disagree with the EU’s characterization of the agreement’s impacts. According to Mor Mbengue, the national coordinator of artisanal fishing association UNAPAS (Union Nationale des Pêcheurs Artisanaux du Sénégal), European vessels do not actually limit their catch to just tuna and hake; Mbengue said that in the course of their fishing activities, they also catch small pelagic fish, the same species on which the artisanal sector is dependent. He sees weak surveillance of industrial fishing activity in Senegalese waters as a core obstacle to ensuring that EU vessels comply with the stipulations and scope of their access agreement.¹¹⁹ In a November 2020 press release, the EU

¹¹⁵ Ibid.

¹¹⁶ “Un accord de pêche transparent et réglementé entre le Sénégal et l’Union européenne,” Delegation of the European Union to Senegal, November 13, 2020, https://eeas.europa.eu/delegations/senegal/88680/un-accord-de-p%C3%A0che-transparent-et-r%C3%A9glement%C3%A9-entre-le-s%C3%A0n%C3%A0gal-et-l%E2%80%99union-europ%C3%A9enne_fr.

¹¹⁷ Ibid.

¹¹⁸ Oumar Ndiaye, “Irène Mingasson de l’UE sur les accords de pêche: « La ressource concernée n’est pas celle dont dépend la pêche artisanale »,” *Le Soleil*, November 20, 2020, <http://lesoleil.sn/irene-mingasson-de-lue-sur-les-accords-de-peche-la-ressource-concernee-nest-pas-celle-dont-depen-d-la-pecherie-artisanale/>.

¹¹⁹ Mor Mbengue, interview by author, February 2, 2020.

delegation to Senegal responded to similar concerns raised by various civil society groups in regards to the 2019-2024 EU-Senegal fishing agreement. The press release affirms the EU's commitment to transparency regarding the number of EU vessels in Senegalese waters and the quantity and species of catch, emphasizing that EU fishing activity does not foster competition with the local artisanal sector.¹²⁰

Joint Ventures: Transparency and Accountability

Ahmed Senhoury, executive director of the Regional Partnership for Coastal and Marine Conservation (PRCM), said the European Union is more transparent about its fishing activities in West African waters than other foreign entities, especially those that gain access to the region's marine resources through murky joint ventures. Senhoury stands behind the EU's affirmation that all fishing agreements are based on scientific knowledge regarding fish stock status in order to avoid fishing overexploited stocks; he said individual EU vessel owners are to blame for any potential violations of the agreement's limitations,¹²¹ an assertion that again raises questions about the efficacy of the Senegalese government's monitoring of fishing activity within its EEZ. According to Senhoury, the EU is not the biggest threat when it comes to industrial fishing in Senegalese waters. Joint ventures between Senegalese and foreign fishing companies, a majority of them Chinese, are shrouded in greater secrecy and pose more serious obstacles to effective surveillance of industrial fishing. Through the establishment of joint ventures, foreign vessels are reflagged to West African coastal states. Under international law, the coastal states become responsible for ensuring the vessels abide by relevant laws, as well as ensuring the conservation

¹²⁰ "Droit de réponse - Accord de pêche Sénégal - Union européenne," Delegation of the European Union to Senegal, November 30, 2020, https://eeas.europa.eu/delegations/senegal/89585/droit-de-r%C3%A9ponse-accord-de-p%C3%A0che-s%C3%A9n%C3%A9gal-union-europ%C3%A9enne_fr.

¹²¹ Ahmed Senhoury, interview by author, February 4, 2021.

of resources within their territorial waters.¹²² A 2015 report published by the Coalition for Fair Fisheries Arrangements (CFFA) cites Senegal as the principal African country engaged in joint ventures, with 27 joint ventures involving a total of 41 vessels set up at the time.¹²³

Activists echo Senhoury's concerns about the opacity of these arrangements. Mor Mbengue of UNAPAS said Chinese vessels, under the guise of a joint venture with a Senegalese firm, adopt new Senegalese names and fly the Senegalese flag — effectively obscuring their Chinese ownership and the extent to which their activities benefit foreign entities instead of domestic ones.¹²⁴ Ibrahima Mar, coordinator of the local artisanal fisheries council (CLPA) in the coastal city of Rufisque, said none of the industrial vessels he sees at the dock are Senegalese; these vessels are mainly Chinese, despite their facade of Senegalese nationality.¹²⁵ Under Senegal's Merchant Marine Code, a foreign vessel can only fly the Senegalese flag — in other words, gain Senegalese status — if at least fifty-one percent of its value is attributed to Senegalese nationals, or to those belonging to the Economic Community of West African States (ECOWAS); alternatively, the vessel can belong to a firm with at least fifty-one percent of its capital under Senegalese or ECOWAS possession.¹²⁶ However, legal stipulations aimed at ensuring Senegalese firms benefit from joint ventures are not systematically enforced, and evidence from NGO investigations reveals widespread illegal practices that prevent West African states like Senegal from reaping the proclaimed benefits from joint venture arrangements.

¹²² “Joint ventures in African fisheries: What challenges for sustainable development?” CFFA and CAOPA, July 2015, <https://static1.squarespace.com/static/5d402069d36563000151fa5b/t/5dad9c7951bf6e19d66b83fa/1571658881290/CFFA%2BCAOPA%2Bpaper%2Bon%2Binvestments.pdf>.

¹²³ Ibid.

¹²⁴ Mor Mbengue, interview by author, February 2, 2021.

¹²⁵ Ibrahima Mar, interview by author, February 1, 2021.

¹²⁶ “LOI n° 2002-22 du 16 août 2002 portant Code de la Marine marchande,” *Republique du Senegal: Secretariat General du Gouvernement*, August 17, 2002, <http://www.jo.gouv.sn/spip.php?article1661>.

Among the illegal practices that deprive the Senegalese government of revenue from joint ventures is under-declaring of gross tonnage among industrial vessels — that is, under-declaring the total volume of a ship’s enclosed spaces.¹²⁷ A 2015 Greenpeace investigation found that China’s largest distant water fishing company, the China National Fisheries Corporation (CNFC), under-declared the gross tonnage of its vessels to Senegalese authorities by an average of 43 percent annually from 2000 to 2014, causing significant financial losses in license fees for Senegal. Furthermore, according to the report, estimates of the licensing fees CNFC avoided by under-declaring gross tonnage do not take into account “the ecosystem damage caused and the fish illegally caught by CNFC by gaining undue access to coastal fishing grounds which are crucial for local fishing communities’ livelihood.”¹²⁸ The detriment to the Senegalese economy, and to the artisanal fishing sector in particular, from this illegal practice is therefore more far-reaching than licensing fee estimates indicate. The under-declaring of gross tonnage among Chinese vessels flying the Senegalese flag is a central component of concerns surrounding lack of transparency in joint ventures.

Local activists like Ibrahima Mar are calling on the Senegalese government to conduct a comprehensive audit of industrial vessels operating in Senegal’s territorial waters — foreign vessels re-flagged to Senegal through joint ventures, as well as vessels flying foreign flags. They say regulating foreign industrial fishing, and combating illegal practices, is impossible without accurate and transparent information regarding the number of foreign vessels active in the same waters on which the local artisanal sector is reliant.¹²⁹ Thus far, the Senegalese government has

¹²⁷ Britannica, T. Editors of Encyclopaedia, "Tonnage," *Encyclopedia Britannica*, September 16, 2019, <https://www.britannica.com/technology/tonnage>.

¹²⁸ “Scam on the African Coast: The hidden Face of Chinese and joint-venture vessels Tonnage Fraud in Senegal, Guinea Bissau and Guinea.” *Greenpeace Africa*, May 2015, 6. <https://static1.squarespace.com/static/5d402069d36563000151fa5b/t/5ee22b3b75f0d9614cf88059/1591880520636/Scam%2Bon%2Bthe%2BAfrican%2BCoast%2BFINAL%2BPROOF%281%29%2B%281%29.pdf>.

¹²⁹ Ibrahima Mar, interview with author, February 1, 2021.

not yet initiated the type of comprehensive, transparent audit that Mar advocates. Gaoussou Gueye, president of the African Confederation of Artisanal Fishing Professionals (CAOPA) and president of the Association for the Promotion and Accountability of Actors in Maritime Artisanal Fishing (APRAPAM), echoed Mar’s concerns about lack of transparency in joint venture arrangements. Gueye said he is not calling for an end to all joint ventures, but rather complete transparency surrounding the provisions of these arrangements to ensure they do not put further pressure on already overexploited marine resources.¹³⁰

Pushback Against China-Senegal Joint Ventures

Concerns about joint ventures, especially with Chinese vessels, bubbled up in Senegal with heightened fervor in the early months of the COVID-19 pandemic, in April 2020. Civil society groups, artisanal fishers, and industrial shipowners alike responded in an uproar when the Senegalese government announced its intention to issue fishing licences to fifty-two Chinese and two Turkish vessels — a move seen as particularly egregious given the compounded economic hardship caused by COVID-19 restrictions. The two Turkish seiners and fifteen of the Chinese-owned vessels requested licenses to fish small pelagic species, including sardinella, which is crucial for the artisanal sector and for local food security; thirty-six of the Chinese vessels requested to licenses to fish for hake, another over-exploited resource.¹³¹ Never before had Senegal’s commission for the allocation of fishing licenses promised this many licenses to foreign vessels.¹³²

¹³⁰ Gaoussou Gueye, interview with author, February 10, 2021.

¹³¹ Joelle Philippe, “Senegalese fisheries stakeholders protest against its government intention to issue 54 fishing licenses to Chinese and Turkish vessels,” *CFFA*, April 20, 2020, <https://www.cffacape.org/news-blog/senegalese-civil-society-protests-against-its-government-intention-to-issue-fishing-licenses-to-54-chinese-and-turkish-vessels>.

¹³² Groupement des Armateurs et Industriels de la Pêche au Sénégal (GAIPES), “Lettre ouverte du GAIPES à Monsieur Alioune NDOYE, Ministre des Pêches et de L’Economie maritime sur 52 demandes de promesses de licences de pêche destinées à des navires chinois,” *GAIPES*, April 16, 2020, <https://aprapam.org/storage/articles/April2020/4KZFMGT7hsvTOa9kJcyK.pdf>.

An open letter from the Senegalese Association of Fishing Companies and Ship Owners (GAIPES) to Senegal’s Minister of Fisheries and Maritime Economy, published on April 16 2020, denounced what the association characterized as a “fictive and swift Senegalization” of these vessels to grant them access to Senegalese waters by shrouding their true ownership in secrecy.¹³³ Similarly, an April 17 letter written by the Association for the Promotion and Accountability of Actors in Maritime Artisanal Fishing (APRAPAM) states, “we have no doubt about the true nationality of these boats, which we consider to be foreign boats.”¹³⁴ In its letter, APRAPAM highlighted that some of these Turkish and Chinese vessels have a history of engaging in transshipment at sea and fishmeal production on board — practices that, according to APRAPAM, “will make these operators escape all control: an open door for illegal, unreported and unregulated fishing.”¹³⁵ Moreover, the APRAPAM letter raises concerns about the specific fish stocks targeted by the licensing requests: coastal pelagics — which are crucial for women fish processors’ and fish merchants’ livelihoods — and deep-sea hake, a species that is already overexploited and could open the door for unregulated deep-water shrimp fishing as well.¹³⁶ Despite claims from Senegalese authorities that licenses with industrial vessels would not be detrimental to the artisanal sector, APRAPAM concludes its letter by proclaiming, “The granting of these licences will jeopardise the activities and the future of the small-scale fisheries sector, which is so important at this time of crisis to ensure food security for our populations.”¹³⁷

The National Interprofessional Council for Small-Scale Fisheries in Senegal (CONIPAS) also issued a statement in condemnation of the proposed licenses with Chinese and Turkish

¹³³ Ibid.

¹³⁴ Association for the Promotion and Accountability of Actors in Maritime Artisanal Fishing (APRAPAM), “Massive arrival of Chinese and Turkish boats: Threat to resources and artisanal fishing communities,” *APRAPAM*, April 17, 2020.

¹³⁵ Ibid.

¹³⁶ Ibid.

¹³⁷ Ibid.

vessels, in which it underscores APRAPAM’s concerns about industrial fishing for small pelagic stocks, especially sardinella. According to CONIPAS, “the fishing effort on this species is already too high in our sub-region.”¹³⁸ The CONIPAS letter raises alarm about a lack of information from Senegalese authorities as to the total number of existing fishing licenses granted to industrial vessels; CONIPAS writes, “We believe this is an important requirement and should be done early in the year before any new licensing action is taken.”¹³⁹ Greenpeace, an international NGO, voiced its support for local groups in their condemnation of the licensing promises, writing in a public statement in April 2020, “The license application process is adding pressure to fishermen, female fish processors and an entire artisanal economy that is already struggling to compete with large-scale fishing and fishmeal companies.”¹⁴⁰

This degree of coordinated pushback from Senegalese fisheries stakeholders and civil society groups was an unprecedented response to what many saw as an affront to the artisanal sector on a national policy level. The Senegalese government was forced to respond. In June 2020, Senegalese authorities went back on their initial decision and announced they had rejected the permits.¹⁴¹ However, NGO and media investigations indicate that Chinese vessels gained access to Senegal’s EEZ nonetheless, in the midst of the pandemic. According to a local media report, Senegalese authorities granted certificates of Senegalese nationality to seven Chinese vessels even after publicly announcing they would refrain from doing so.¹⁴² Another local media

¹³⁸ National Interprofessional Council for Small-Scale Fisheries in Senegal (CONIPAS). “CONIPAS REPLY TO THE DIRECTOR OF MARITIME FISHERIES.” *CONIPAS*, April 2020.

¹³⁹ *Ibid.*

¹⁴⁰ “Greenpeace Africa to Senegal’s Minister of Fisheries, Mr. Alioune Ndoye: licensing new fishing vessels is an onslaught against fish stocks and artisanal sector,” *Greenpeace Africa*, April 23, 2020, <https://www.greenpeace.org/africa/en/press/9366/greenpeace-africa-to-senegals-minister-of-fisheries-mr-alioune-ndoye-licensing-new-fishing-vessels-is-an-onslaught-against-fish-stocks-and-artisanal-sector/>.

¹⁴¹ “Senegal Rejects Dozens of Foreign Trawler Permits,” *Agence France Presse*, June 9, 2020, <https://www.barrons.com/articles/senegal-rejects-dozens-of-foreign-trawler-permits-01591711506>.

¹⁴² Khalil Kamara, “Enquête/L’ANAM “Sénégalaise” 7 navires chinois en l’espace de 3 jours: Sur la piste des “Fu Yuan Yu”,” *Senego*, October 10, 2020,

investigation published in June 2020 revealed that Senegal’s Minister of Fisheries, Alioune Ndoye, granted at least four licenses to vessels in China’s Fu Yuan Yu fleet — in contradiction to Ndoye’s public claims of refusing to sign fishing licenses since the start of his mandate.¹⁴³ A Greenpeace report published in October 2020 confirms what local news outlets were reporting: that one licence each for the Fu Yuan Yu 9885 (licence 170), the Fu Yuan Yu 9886 (licence 171), and the Fu Yuan Yu 9888 (licence 173) were issued on 17 April, 2020. Moreover, the report states, “Neither the Fu Yuan Yu 9885 or the Fu Yan Yu 9888 were on the list of the 56 vessels presented to the CCAL as requesting a licence, nor are they featured in any other vessel lists or documents available to Greenpeace.”¹⁴⁴ The clear disconnect in 2020 between rhetoric among Senegalese fisheries authorities in condemnation of foreign fishing licences and concrete evidence of licenses continuing to be issued to Chinese vessels underscores the joint venture transparency concerns about which many local activists are raising alarm. Despite a notable success from civil society organizations in pressuring authorities to publicly reject licenses with foreign industrial vessels, the extent to which authorities are following through with their proclaimed actions remains unclear, as Chinese-owned vessels continue to plunder resources in Senegal’s territorial waters.

Restrictions on Artisanal Fishing Capacity: Blaming the Right Actors?

In 2012, Senegal’s Minister of Fisheries enacted a freeze on all new registrations for artisanal fishing vessels in the name of limiting artisanal fishing capacity and access to marine

<https://senego.com/enquete-lanam-senegalaise-7-navires-chinois-en-lespace-de-3-jours-sur-la-piste-des-fu-yuan-yu-1168393.html>.

¹⁴³ “Signature de licences de pêche : les preuves qui démontent «les contrevérités» du ministre Alioune Ndoye,” *ActuSen*, June 12, 2020,

<https://actusen.sn/signature-de-licences-de-peche-les-preuves-qui-demontent-les-contreverites-du-ministre-alioune-n-doye/>.

¹⁴⁴ “Seasick: As COVID locks down West Africa its waters remain open to plunder,” *Greenpeace Africa*, October 2020, 8,

https://storage.googleapis.com/planet4-africa-stateless/2020/10/7fef91ec-eng_report_1007.pdf?_ga=2.131629833.728482148.1602177055-2049969189.1602177055.

resources. Under this article, which is still in effect, new construction of artisanal boats is forbidden.¹⁴⁵ Gaoussou Gueye of fishing associations CAOPA and APRAPAM said he sees these restrictions on the artisanal sector's capacity as hypocritical, given the Senegalese authorities' continued issuing of fishing licenses to foreign industrial actors. He wonders, "How can you forbid artisanal fishers from constructing boats, and at the same time give licenses to foreign vessels?"¹⁴⁶ Local activists, fishing associations, and NGOs are calling into question domestic policies that limit artisanal fishing capacity while failing to enact similar measures to safeguard fish stocks through restrictions on industrial fishing.¹⁴⁷

Rhetoric from aid organizations, on the other hand, tends to be comparatively favorable towards national policies aimed at limiting artisanal fishing capacity. A World Bank article published in 2016 lauded a campaign launched that year by Senegalese authorities to place identification plates on almost 20,000 registered artisanal boats, citing the monitoring of the capacity of the artisanal fleet as a "first step toward a better governance of the fisheries sector."¹⁴⁸ The article states that "Senegal's open access regime to artisanal fisheries has contributed to the depletion of marine resources and the increase of fish prices,"¹⁴⁹ an assertion that identifies overfishing by the artisanal sector as a primary cause of mounting fish scarcity. The World Bank's focus on artisanal rather than industrial overfishing as a driving force behind marine resource depletion stands in contradiction to local activists' emphasis on industrial overfishing as the more significant culprit.

¹⁴⁵ Ministère de la Pêche et des Affaires Maritimes, "Arrêté Ministériel n° 6397 en date du 29 août 2012," *Republique du Senegal: Secretariat General du Gouvernement*, January 26, 2013, <http://www.jo.gouv.sn/spip.php?article9597>.

¹⁴⁶ Gaoussou Gueye, interview by author, February 10, 2021.

¹⁴⁷ "Seasick," *Greenpeace Africa*, 6.

¹⁴⁸ Madjiguene Seck, "Senegal Takes Steps to Establish a Sustainable and Better-Governed Fisheries Sector," *World Bank*, August 8, 2016, <https://www.worldbank.org/en/news/feature/2016/08/08/senegal-takes-steps-to-establish-a-sustainable-and-better-governed-fisheries-sector>.

¹⁴⁹ Ibid.

Chapter 3: West Africa Regional Fisheries Management

The waters off Senegal’s northern border with neighboring Mauritania — one of the world’s richest fishing grounds — have in recent years become a site of tension between Senegalese and Mauritanian fishing interests. In 2018, the absence of an agreement between these two states over fishing rights proved fatal: nineteen-year-old Fallou Diakhaté, a Senegalese fisherman, was shot dead by Mauritanian coast guards, who claimed Diakhaté had been illegally fishing in Mauritanian waters. Diakhaté’s death sparked riots in the Saint Louis fishing community, which involved the looting of boutiques owned by Mauritanian immigrants.¹⁵⁰ Video footage of an attack in February 2018 depicts a crowd of infuriated Senegalese fishermen gathered outside a Mauritanian-owned business, chanting, “Arabs out. Go home, you don’t belong here.” The killing of Diakhaté was not an isolated incident; Mauritanian coast guard boats are known to shoot Senegalese fishermen caught in their territorial waters. As of April 2018, dozens of Senegalese fishermen had died at the hands of Mauritania’s coast guard. Hundreds had been arrested, their catches seized.¹⁵¹ Again, in February 2020, mounting tensions in fishing communities in this border region amounted to violent protest in Saint Louis. Images posted on Twitter depict smoke billowing from burning pirogues, cars, and buildings — the result of protests against Mauritania’s failure to respect fishing licenses granted to Senegalese fishers.¹⁵²

Conflicts at the Senegal-Mauritania border illustrate with particular clarity that regional management is equally as important as national policy to ensure a sustainable future for artisanal fisheries in Senegal and its neighboring countries. While national policy is a crucial factor

¹⁵⁰ “Les poissons ‘disparaissent’ des côtes du Sénégal,” *BBC News*, November 1, 2018, <https://www.bbc.com/afrique/region-46060586>.

¹⁵¹ Nicolas Haque, “Mauritania-Senegal tension over fishing territories heating,” *Al Jazeera English*, April 7, 2018, <https://www.youtube.com/watch?v=ZvHlnSk2ypI>.

¹⁵² “Sénégal : nouveaux affrontements à Saint-Louis sur fond de crise entre les pêcheurs et la Mauritanie,” *France 24*, February 7, 2020, <https://observers.france24.com/fr/20200207-senegal-saint-louis-guet-ndar-affrontements-pecheurs-mauritanie>.

impacting marine resources in Senegal’s territorial waters, fish stocks are by no means confined by the bounds of exclusive economic zones. Many of the small pelagic fish that sustain Senegal’s artisanal fishing sector, such as sardinella, are shared migratory species found throughout the West Africa region in the territorial waters of several countries on the Atlantic coast. Round sardinella, for example, occur off the coasts of Morocco, Mauritania, The Gambia, and Senegal, though some stationary sub-groups do exist as well.¹⁵³ Given the migratory nature of fish stocks, shortcomings in the regional fisheries management mechanisms currently in existence are a notable driver of fish scarcity in Senegal’s artisanal fishing communities; failures from regional fisheries bodies to adopt a participatory model centered on the needs of artisanal fishing communities, as well as their limited management capacities, directly impact the status of fish stocks and thus the sustainability of artisanal fishing livelihoods.

For decades, civil society groups and artisanal fisheries professionals have been calling for strengthened regional management of shared small pelagic stocks in West Africa to end cycles of overfishing in the region. Such calls for reform are anchored in studies indicating that the state of small pelagics — among them, sardinella — is in decline, in part due to the absence of effective regional management.¹⁵⁴ Currently, the three notable bodies for regional fisheries management of which Senegal is a member state are the Sub-Regional Fisheries Commission (SRFC), the Fishery Committee for the Eastern Central Atlantic (CECAF), and the Ministerial Conference on Fisheries Cooperation Among African States Bordering the Atlantic (ATLAFCO). According to Béatrice Gorez of the Coalition for Fair Fisheries Arrangements, these bodies lack management capacities in their current forms.¹⁵⁵ Ibrahima Mar, coordinator of

¹⁵³ “Round sardinella: NW Africa,” *FishSource*, August 29, 2017, https://www.fishsource.org/stock_page/2241.

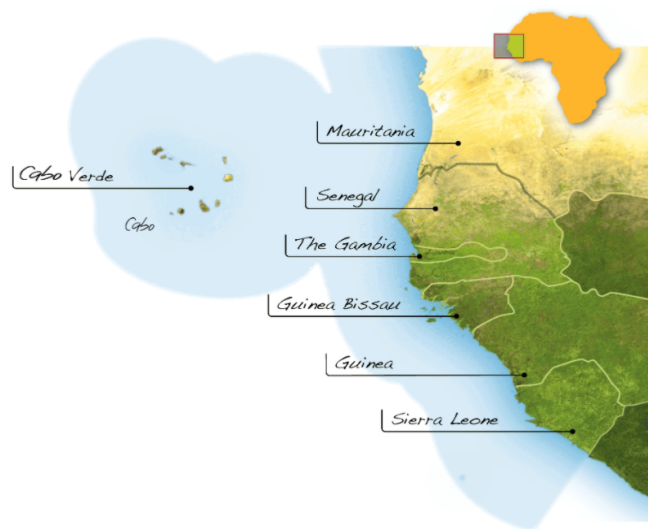
¹⁵⁴ “New effort for a regional management of small pelagics in West Africa?” *CFFA*, October 9, 2020, <https://www.cffacape.org/news-blog/new-effort-for-a-regional-management-of-small-pelagics-in-west-africa>.

¹⁵⁵ Béatrice Gorez, interview with author, February 9, 2021.

the local artisanal fisheries council (CLPA) in Rufisque, highlighted another shortcoming: lack of access to information about these management mechanisms in artisanal fishing communities — that is, among the groups most directly affected by fish scarcity. In an interview, Mar was initially unable to recall the name of the SRFC. “Fishers like me do not know what [the commission] does,” Mar explained. “We do not have enough information about this commission. If you asked 200 fishers what the commission is, they would not know about it. [The commission] has never organized a meeting, and I have never heard about a memorandum from this commission.”¹⁵⁶

Sub-Regional Fisheries Commission (SRFC)

The SRFC, established in 1985, is an inter-governmental fisheries cooperation organization comprising seven member states: Cabo Verde, The Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal, and Sierra Leone.



Screenshot from SRFC website.

Its stated mandate is to strengthen regional cooperation to “enhance the sustainable management of fisheries resources in maritime waters under the jurisdiction of member States,” and to

¹⁵⁶ Ibrahima Mar, interview by author, February 1, 2021.

“ensure harmonization of national policies of Member States on the preservation, conservation and exploitation of fisheries resources and strengthen cooperation for the well-being of the populations.”¹⁵⁷ The commission’s legal power is limited; only three legal instruments are listed on the SRFC website, the most recent one being a 2014 declaration on illegal, unregulated and unreported (IUU) fishing, described by the commission as a “strong political commitment to the international community to sensitize it to the efforts made by the Member States of the SRFC to fight IUU fishing and sustainably preserve fisheries resources of the sub-region.”¹⁵⁸ Even this so-called legal instrument is a mere non-binding declaration. Similarly, the SRFC’s “harmonization of policies and legislation” objective is primarily an advisory task; it revolves around offering advisory support to member states and promoting coordinated regional fisheries policies. The SRFC describes this harmonization objective in vague terms, referencing the development of “shared tools for sustainable and fair fisheries management” and “principles for effective, fair and transparent management of fishing capacity in the SRFC region” without providing concrete details on the nature of these tools and principles.¹⁵⁹

Alongside harmonization of policies and legislation, two additional programs fall under the SRFC mandate: first, the “research and information system” program aimed at knowledge building surrounding ecosystems in the region,¹⁶⁰ and second, the monitoring, control and surveillance of fisheries development to support member states in monitoring their territorial waters.¹⁶¹ The SRFC has also partnered with the World Bank on its West Africa Regional Fisheries Program (WARFP), the goal being to “sustainably increase the overall wealth generated by the exploitation of the marine fisheries resources of West Africa, and the proportion

¹⁵⁷ “Presentation,” *SRFC*, <https://spcsrp.org/en/presentation>.

¹⁵⁸ “Legal instruments,” *SRFC*, <https://spcsrp.org/en/legal-instruments>.

¹⁵⁹ “Harmonization of policies and legislation,” *SRFC*, <https://spcsrp.org/en/harmonization-policies-and-legislation>.

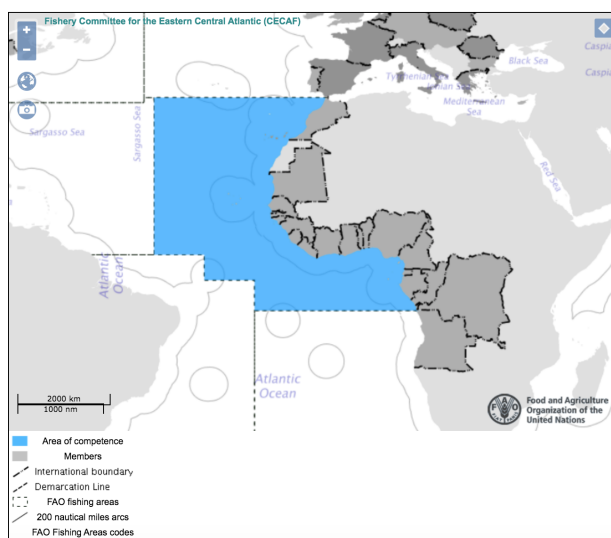
¹⁶⁰ “Research and Information System,” *SRFC*, <https://spcsrp.org/en/research-and-information-system>.

¹⁶¹ “Monitoring, Control and Surveillance of Fisheries Development (MCSD),” *SRFC*, <https://spcsrp.org/en/monitoring-control-and-surveillance-fisheries-development-mcsd>.

of that wealth captured by West African countries.”¹⁶² It is important to note the SRFC’s interest in aid-funded projects that prioritize wealth generation through fisheries exports, with this World Bank initiative being one crucial example.

Fishery Committee for the Eastern Central Atlantic (CECAF)

Similar to the SRFC, CECAF’s mandate is almost entirely advisory and research-oriented in nature. The committee, which is an initiative of the Food and Agriculture Organization of the United Nations (FAO), describes its functions using the terms “promote,” “provide advice,” and “encourage” — for example, “promote, encourage and coordinate research on the living resources,” and “provide advice on monitoring control and surveillance.”¹⁶³ Established by the FAO Council in 1967, CECAF comprises a broader range of African member states than the SRFC; members include all African states on the Atlantic coast from Angola in the south to Morocco in the north, with the exception of disputed territory Western Sahara.¹⁶⁴



Screenshot from FAO website.

¹⁶² “West Africa Regional Fisheries Program (WARFP),” *SRFC*, <https://spsrpf.org/en/west-africa-regional-fisheries-program-warfp>.

¹⁶³ “Fishery Committee on the Eastern Central Atlantic (CECAF),” *FAO*, <http://www.fao.org/cecaf/en/>.

¹⁶⁴ *Ibid.*

Three working groups exist under the CECAF umbrella: one group to assess the state of small pelagic fish stocks within the CECAF region, another to analyze the state of demersal species, and a third group focused on artisanal fishing with the goal of improving regional knowledge on small-scale fisheries. These working groups are tasked with gathering data and conducting stock assessments to ultimately determine if certain stocks are not fully exploited, fully exploited, or overexploited — information that CECAF relies upon to formulate management advice for the stocks.¹⁶⁵ While valuable in providing concrete data on the state of fish stocks in the region, CECAF rests firmly in an advisory role and, as such, lacks the legal authority to enforce compliance among member states with its management advice.

Ministerial Conference on Fisheries Cooperation Among African States Bordering the Atlantic (ATLAFCO)

Founded in 1989, ATLAFCO is an intergovernmental organization with twenty-two member states spanning the Atlantic coast of Africa, from Namibia in the south to Morocco in the north.



Screenshot from ATLAFCO website.

According to its mission statement, ATLAFCO’s primary objective is “the effective and active cooperation between Member States for the preservation of fishery resources and the sustainable

¹⁶⁵ Ibid.

development of fisheries in the region.” Among the actions under ATLAFCO’s mandate are strengthening maritime technical training; developing fisheries research; enhancing the value of fishery products; and implementing regulations for responsible fishing.¹⁶⁶ Like the SRFC and CECAF, this regional body is limited in its management capabilities, remaining primarily in the realm of research and consultation.

Proposals for Reform

Abdoulaye Ndiaye of Greenpeace and PAPAS is calling for a regional management mechanism with the power to draft and enforce laws governing fisheries in states across the region. The current framework for regional cooperation is, in his view, insufficient. “[The SRFC] is solely consultative. Nobody has to respect what it says,” Ndiaye explained. He believes West African elected officials must have more political will to strengthen the management capabilities of existing regional bodies, and is calling on politicians to implement stronger tools for regional cooperation in the name of marine resource conservation.¹⁶⁷ Ibrahima Mar of the CLPA stressed the importance of awareness campaigns as a first step in ensuring fishing communities are familiar and in direct contact with regional management bodies, thus allowing for a participatory approach to regional cooperation centered on the needs of the most vulnerable communities. “What’s missing in Senegal is communication and meetings with fishing communities,” Mar explained. “Even if what you’re doing is good for them, they don’t know about it.”¹⁶⁸

One approach to reform is the granting of management competences to existing organizations. Proposals to enhance the management authority of an existing body like the SRFC of CECAF have emerged in the past, although the Coalition on Fair Fisheries Arrangement claims a lack of political will is at the root of the failure of such proposals to materialize thus

¹⁶⁶ “Introduction,” *ATLAFCO*, <https://www.comhafat.org/en/presentation.php>.

¹⁶⁷ Abdoulaye Ndiaye, interview by author, January 28, 2021.

¹⁶⁸ Ibrahima Mar, interview by author, February 1, 2021.

far.¹⁶⁹ In September 2020, ATLAFCO published a report outlining potential pathways to elevating this intergovernmental organization to the status of a Regional Fisheries Management Organization (RFMO), thereby giving it the authority to adopt binding management and conservation measures. The report details how the proposed management body would diverge from the current framework for the management of shared small pelagic and demersal species:

“While the current management framework for shared resources allows States to cooperate, either bilaterally or through sub-regional organizations, there is no adequate provision for such cooperation to be translated into management and conservation measures and to be regularly organized. The current status of some shared resources reinforces the perception that the current management framework is not sufficiently effective to prevent overexploitation. The establishment of a new RFMO will improve the framework for the management of shared resources by allowing the adoption of management and conservation measures that coastal State Contracting Parties will be obliged to implement.”¹⁷⁰

In a letter sent to European Union High Representative Josep Borrell in November 2020, three fishing associations and NGOs — CAOPA, CFFA, and PRCM — lauded ATLAFCO’s interest in establishing a binding international legal framework for regional fisheries management.

However, these organizations stressed in their letter that “a real political impetus and EU involvement are needed” in order to turn such ideas for new mechanisms into reality. They are

¹⁶⁹ “New effort for a regional management of small pelagics in West Africa?” *CFFA*, October 9, 2020, <https://www.cffacape.org/news-blog/new-effort-for-a-regional-management-of-small-pelagics-in-west-africa>.

¹⁷⁰ “Examination of the possibilities of raising ATLAFCO to the status of a Regional Fisheries Management Organization (RFMO),” *ATLAFCO*, September 22, 2020, 27, https://www.comhafat.org/en/files/actualites/doc_actualite_05200982.pdf.

calling on the EU to support initiatives to establish the first fisheries management organization covering the waters off West Africa with concrete legal authority.¹⁷¹

¹⁷¹ “EU-AU Partnership - Urgent need for a regional fisheries management organisation in West Africa.” *CAOPA, CFFA, and PRCM*. November 2020.

Chapter 4: Global Political Economy Context and Dynamics

Development Aid: Analysis of Fisheries Projects

The publicly available FAO AIDmonitor database aggregates information from diverse sources to track Official Development Assistance (ODA) flows worldwide, with an emphasis on food security, nutrition, agriculture, and rural development. The FAO defines ODA as grants and concessional loans to developing countries “provided to advance development in areas such as health, sanitation, agriculture, forestry, fishery, among others.”¹⁷² The AIDmonitor database does not appear to be a comprehensive list of aid-funded fisheries projects in Senegal given the notable absence of World Bank and United Kingdom projects, among other multilateral and bilateral agencies whose projects are not reflected; nonetheless, despite its shortcomings, the database does offer an overview of fisheries aid patterns on a country-by-country level. Filtered for ODA funding for fisheries projects in Senegal from 2014 to 2018, the AIDmonitor database reveals a notable trend: development aid projects in Senegal’s fisheries sector tend to lean heavily towards capacity building, revealing the role of international aid in promoting a production-oriented approach to fisheries management and thus incentivizing over-exploitation of fish stocks as opposed to conservation measures.

A broad analysis of fisheries projects from 2014 to 2018 points to the prevalence of projects geared towards infrastructure and construction of fisheries facilities, which in turn promote over-exploitation by building up industrial fishing capacity. Two of the highest-value projects funded during this five-year period fall under the category of infrastructure and construction. For instance, a project funded by Japan in 2018, entitled “The Project for the Improvement of Advanced Fish Landing Facilities for Adding Value to Fishery Products in the Department of Mbour,” is a clear example of development aid funding aimed at increasing

¹⁷² “AIDmonitor,” *FAO*, 2021, <http://www.fao.org/aid-monitor/en/>.

catches for export to international markets, through infrastructure projects. This Japanese project, valued at 11.84 million USD, is by far the highest-value project funded throughout the five-year period, which further reinforces the fact that the largest sums of development aid often end up being used for capacity building purposes. Similarly, a 2017 Korean-funded project called “The Construction of Refrigerated Warehouse Project” is valued at five million USD, making it among the highest valued projects since 2014. This project is another clear indication of development aid funds used to construct infrastructure with the goal of increasing industrial fishing capacity; refrigerated warehouses allow fish to be stored for transport, indicating that these resources are being exported to international markets rather than being used for local consumption.¹⁷³

In contrast, environmental protection projects are few and far between, according to an analysis of the AIDmonitor dataset. The only project during this five-year period that appears to be clearly situated in the realm of conservation is an initiative called “Reducing vulnerability and increasing resilience of coastal communities in the Saloum Islands (Dionewar),” funded by the Adaptation Fund — an international fund that finances projects to help vulnerable communities in developing countries adapt to climate change. This project in the rural Saloum Islands region of Senegal aims to “improve the resilience of the productive sectors such as fishing, oyster farming and forestry to natural hazards.” The project includes the implementation of protective measures to assist rural communities in their response to the adverse effects of climate change.¹⁷⁴ However, it is important to note that this project is only valued at 0.27 million USD — a significantly lower value than many of the infrastructure projects, such as the aforementioned Japanese-funded fish landing facilities project.¹⁷⁵

¹⁷³ Ibid.

¹⁷⁴ “Reducing vulnerability and increasing resilience of coastal communities in the Saloum Islands (Dionewar and Fadial),” *Adaptation Fund*, <https://www.adaptation-fund.org/project/reducing-vulnerability-increasing-resilience-coastal-communities-saloum-islands-dionewar/>.

¹⁷⁵ “AIDmonitor,” *FAO*, 2021, <http://www.fao.org/aid-monitor/en/>.

The Illegal Fishing Discourse

Beyond specific aid-funded projects, rhetoric among aid agencies as to the root causes of fish stock decline also tends to bolster industrial fishing activities, albeit in a more indirect manner. A common focus among aid agencies on the role of illegal, unreported, and unregulated (IUU) fishing in the depletion of marine resources works to divert attention away from the environmental — and, consequently, socio-economic — damage caused by legal industrial fishing activities, thus shifting public attention away from policies such as fishing agreements and subsidies that result in the decimation of ecosystems while technically remaining in the realm of legality.

A video produced by the World Bank in 2014, entitled “Using Community-based Fisheries Management to Fish Smarter and Sustainably in Senegal,” paints a picture of one World Bank-funded initiative aimed at improving community-based fisheries management. This project, implemented in the coastal town of Ngaparou just south of Dakar, is centered on the creation of a Local Fishing Committee, enabling town residents to participate in the World Bank’s West Africa Regional Fisheries Program. As stated in the video, the funding provided to the Ngaparou fishing community is intended for three primary purposes: creating protected fishing zones, decreasing the number of artisanal fishers in the town by promoting education for youth, and providing better fish processing equipment. A fisherman interviewed in the video offers a positive assessment of the project, stating, “When we realized that the ocean was exhausted of its resources, we decided to reduce the number of fishermen and encourage youth to go to school instead.”¹⁷⁶

¹⁷⁶ “Using Community-based Fisheries Management to Fish Smarter and Sustainably in Senegal,” *World Bank*, June 24, 2014, <https://www.youtube.com/watch?v=Slwo3rqy0vg&t=2s>.

While the Local Fishing Committee project in Ngaparou has, according to the World Bank, been successful in prompting “significant weight increases in recent catches” — an indication of a greater abundance of fish in nearby waters — it reveals a key pattern in fisheries aid to Senegal, from not only the World Bank but also other multilateral, as well as bilateral, development agencies: a focus on shortcomings in local-level surveillance and management of fisheries, rather than broader domestic and international policy failures, as the driver of fish scarcity. This emphasis on the need for small-scale fishing communities to more effectively manage their own fishing activity underscores the reluctance among development agencies to center policy in their fisheries discourse, thus overlooking the role of the global industrial fishing industry and the political economy context that enables it to flourish. The narrator of the World Bank video on the Ngaparou community project captures this common development rhetoric by pointing to IUU fishing as the main cause of fish stock decline, stating, “Like many areas in Senegal, Ngaparou has experienced an increase of illegal, unregulated, and unreported fishing, leading to the reduced catch rate or disappearance of several species, unemployment, and poverty.”¹⁷⁷ By singling out IUU fishing as the main driver of marine resource depletion, the World Bank is implying that the solution to fish stock decline lies firmly in the realm of surveillance on a local and national level, the goal being to monitor fishing and crack down on illegal activity. Another implication is clear: that legal fishing — which includes industrial fishing that technically lies within the bounds of the law despite mounting evidence of its harms to local ecosystems — should not be the focus of efforts to protect artisanal fishing livelihoods.

Existing research does point to significant economic losses stemming IUU fishing in West Africa. A 2017 study assessing the effectiveness of monitoring of illegal fishing in West Africa indicates a loss of revenues for Mauritania, Senegal, The Gambia, Guinea Bissau, Guinea,

¹⁷⁷ Ibid.

and Sierra Leone, estimated at 2.3 billion USD annually.¹⁷⁸ In recognition of the prevalence of IUU fishing in West African waters, some researchers are utilizing new technologies to monitor and crack down on illegal activity in the territorial waters of coastal states like Senegal. Kwame Agyekum, a lecturer in the University of Ghana’s Department Marine and Fisheries Sciences, is one such researcher. Agyekum is an expert in utilizing satellite automatic identification system (AIS) data to track IUU fishing in West Africa. By analyzing vessel tracking information, Agyekum aims to understand vessels’ behavior — where they are speeding up towards fishing grounds, where they are stopping and for how long, which vessels are coming in close contact with one another to engage in transshipments, meaning transferring catch directly from one boat to another at sea. Agyekum said he sees IUU fishing as a source of additional competition with artisanal fishers, further threatening their livelihoods.¹⁷⁹

Illegal fishing, and the fact that coastal West African states have limited resources to monitor illegal activity in their territorial waters, is cause for concern. However, too great an emphasis on the role of IUU fishing in threatening artisanal fishing livelihoods overshadows the ecological and socio-economic harms caused by legal commercial fishing activity, facilitated by fishing agreements and incentivized by capacity-enhancing subsidies for industrial fleets. It is equally as important — even *more* crucial, I would argue — to assess the broader political economy context and the policies attached to this current global fishing industry in order to understand the most significant drivers of fish scarcity in the Senegalese context.

¹⁷⁸ Alkaly Doumbouya et al., “Assessing the Effectiveness of Monitoring Control and Surveillance of Illegal Fishing: The Case of West Africa,” *Frontiers in Marine Science*, March 7, 2017, <https://www.frontiersin.org/articles/10.3389/fmars.2017.00050/full>.

¹⁷⁹ Kwame Agyekum, interview by author, January 12, 2021.

Capacity-Enhancing Subsidies

Among the broader global forces that incentivizes overfishing in West Africa is subsidies for Northern distant water fishing (DWF) fleets. A 2019 study defines a subsidy as “a direct or indirect financial transfer from public entities that creates a benefit for the fisheries sector, which enable enterprises to make more profit than they would have otherwise.” The study differentiates between beneficial and capacity-enhancing subsidies, stating, “Beneficial subsidies can be considered investments in the promotion of fishery resource conservation and management. Capacity-enhancing subsidies include programs that currently, or have the potential to, encourage fishing capacity to develop to a point where resource exploitation exceeds the maximum sustainable yield (MSY), effectively resulting in the overexploitation of natural capital assets.”¹⁸⁰ Capacity-enhancing subsidies — that is, those that incentivize commercial overfishing — include boat construction and modernisation, fisheries development programs, fishing port development, marketing and storage infrastructure, tax exemptions, fuel subsidies, and fishing access agreements, among others.¹⁸¹ In 2018, public entities globally provided 35.4 billion USD as subsidies; capacity-enhancing subsidies constituted the highest category provided, valued at more than 22.2 billion USD. Fuel subsidies constituted 22 percent of the total global subsidy, making this the largest subsidy type in 2018. Asia was the greatest subsidising region (55% of the total), followed by Europe (18% of the total) and North America (13% of the total).¹⁸²

Although Asian, European, and North American countries with large DWF fleets are the largest subsidizers of commercial fishing activity on a global scale, Southern states like Senegal

¹⁸⁰ Ussif Rashid Sumaila et al., “Updated estimates and analysis of global fisheries subsidies,” *Marine Policy*, Vol. 109, November 2019, <https://www.sciencedirect.com/science/article/pii/S0308597X19303677#:~:text=We%20estimate%20global%20fisheries%20subsidies,subsidies%20are%20USD%2022.2%20billion.&text=The%20updated%20global%20figure%20has,billion%20in%202018%20constant%20dollars.>

¹⁸¹ Ussif Rashid Sumaila et al., “A global dataset on subsidies to the fisheries sector,” *Data in Brief*, Vol. 27, December 2019, <https://www.sciencedirect.com/science/article/pii/S2352340919310613>.

¹⁸² Ussif Rashid Sumaila et al., “Updated estimates and analysis of global fisheries subsidies,” *Marine Policy*, 2019.

engage provide capacity-enhancing subsidies as well. A 2018 dataset on subsidies to the fisheries sector globally offers insights into the types of subsidies provided by the Senegalese government domestically, a process by which taxpayer money is used to render commercial fishing more profitable. Researchers found seven examples of capacity-enhancing subsidies in Senegal in 2018, compared to only three beneficial subsidies during this same year. The capacity-enhancing subsidies recorded in the dataset are varied in nature, with a range of purposes: boat construction and renovation, fisheries development projects, fishing port development, marketing and storage infrastructure, tax exemptions, fishing access, and fuel subsidies.¹⁸³ The high number of capacity-enhancing subsidies provided by the Senegalese government relative to beneficial subsidies — more specifically, subsidies for fisheries management, research and development, and marine protected areas — points to the government’s prioritization of commercial capacity building rather than conservation measures, through the use of public funds.

The harmful impacts of the provision of various capacity-enhancing subsidies — particularly by Northern distant water fishing countries, but also by developing countries like Senegal for their domestic fleets and infrastructure — have prompted a global movement to put an end to these subsidies worldwide, in line with UN Sustainable Development Goal 14.6, which states: “By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation.”¹⁸⁴ World Trade Organization (WTO) member countries fell short of reaching an agreement to end harmful

¹⁸³ Ussif Rashid Sumaila et al., “A global dataset on subsidies to the fisheries sector,” *Data in Brief*, December 2019.

¹⁸⁴ “Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development,” *United Nations Department of Economic and Social Affairs*, <https://sdgs.un.org/goals/goal14>.

fisheries subsidies by the United Nations' 2020 deadline; however, negotiations are set to extend into 2021.¹⁸⁵ Organizations like the Pew Charitable Trusts — a public charity with a conservation agenda — are attempting to maintain momentum to pressure the WTO to reach an agreement this year. Reyna Gilbert, Senior Associate with Pew's Harmful Fisheries Subsidies Project, said Pew has been at the forefront of the Stop Funding Overfishing Campaign — a coalition of almost 200 NGOs worldwide advocating for the WTO to sign a ban on harmful subsidies. Gilbert said the campaign classifies a subsidy as harmful if it encourages overcapacity or excess fishing pressure, as it distorts the market and creates an unnatural advantage for fishing fleets. A positive subsidy, on the other hand, contributes to the conservation of the resource.¹⁸⁶ With these definitions in mind, NGOs are continuing their advocacy efforts in conjunction with WTO negotiations surrounding a ban on harmful subsidies.

¹⁸⁵ “Pew: WTO Misses Opportunity This Year to Reduce Harmful Fisheries Subsidies,” *Pew Charitable Trusts*, December 15, 2020, <https://www.pewtrusts.org/en/about/news-room/press-releases-and-statements/2020/12/15/pew-wto-misses-opportunity-this-year-to-reduce-harmful-fisheries-subsidies>.

¹⁸⁶ Reyna Gilbert, interview by author, April 12, 2021.

Chapter 5: Emerging Concerns

Offshore Oil and Gas Development

An Imminent Risk to Fisheries and Marine Ecology

The Plan for an Emerging Senegal — in French, Plan Sénégal Emergent (PSE) — has been the framework for economic development under President Macky Sall’s administration since 2014. The PSE is aimed at propelling Senegal to the status of a so-called “emerging country” by 2035 through a focus on foreign investment and exports, all in the name of economic growth measured primarily through traditional indicators like GDP. Senegal is now in Phase 2 (2019-2023) of the PSE.¹⁸⁷ Among the focus issues in this current phase of Senegal’s economic policy plan is reducing inequality in adaptation to climate change¹⁸⁸ — a policy priority that in many ways implicates the domestic fisheries sector, given the direct impacts of climate change on marine resources that are crucial for both industrial and artisanal fishing.

Yet the emphasis on foreign investment and exploitation of national resources for export poses a direct threat to fisheries, especially those that are small-scale. Offshore oil and gas development, in particular, is likely to become an additional major threat to the country’s artisanal fishing sector in the next few years, with exploitation of these natural resources expected to begin in earnest in 2022. President Macky Sall has publicly voiced his support for oil and gas development, painting the imminent exploitation of these natural resources as an engine for economic growth. At an economic forum in Dakar in September 2020, Sall stated, “In 2023, if all conditions are met, for the first time Senegal will achieve double-digit growth projected at 13.7%. This is simply due to the exploitation of oil and gas from 2023.”¹⁸⁹ Senegal’s GDP

¹⁸⁷ “Plan Sénégal Emergent: Plan d’Actions Prioritaires 2019-2023,” *République du Sénégal: Ministère de l’Economie, des Finances et du Plan*, December, 2018, 7, <https://en.calameo.com/read/00594870455d9c2a85efb?view=book&page=5>.

¹⁸⁸ *Ibid.*, 8.

¹⁸⁹ Diadie Ba, “Senegal president sees growth at 13.7% by 2023 thanks to oil, gas,” *Nasdaq*, September 29, 2020, <https://www.nasdaq.com/articles/senegal-president-sees-growth-at-13.7-by-2023-thanks-to-oil-gas-2020-09-29-0>.

growth rate was about 5.3% in 2019, according to World Bank data.¹⁹⁰ Sall's projection of a jump to a 13.7% growth rate in 2023 is thus a notable increase from Senegal's current economic standing.

A 2018 report issued by the Senegalese national government outlines its plans for Phase 2 of the PSE and notes the specific sites where off-shore oil and gas production is set to occur beginning in 2022. A map of licensing blocks, as well as oil and gas deposits, identifies oil blocks spanning the entirety of the Senegalese coastline — from the southern border with Guinea-Bissau to the northern border with Mauritania. Exploitation of these natural resources in the coming years is thus an imminent threat to coastal fishing communities nationwide. A multitude of foreign oil and gas companies, including British multinational company BP and Australian company Woodside Energy, have already secured oil concessions to exploit the resources in these blocks.¹⁹¹ According to the 2018 report, oil production at a rate of 75,000 to 125,000 barrels per day is set to begin in 2022; gas production at a rate of sixty to 100 million cubic feet per day will then start in 2023.¹⁹²

Laying the Groundwork for Exploitation

In January 2020, the National Oil Company of Senegal, PETROSEN, launched the country's second offshore licensing round, comprising twelve offshore exploration blocks. At the launch event, Senegal's Minister of Petroleum and Energy, H.E. Mouhamadou Makhtar Cissé, expressed in clear terms his desire to attract foreign investment in Senegal's emerging oil and gas industry, stating, "I would like to state the immense opportunities that exist in Senegal, as well as reassure a stable regulatory and investment framework. Investors should be excited and ready to

¹⁹⁰ "GDP growth (annual %) - Senegal," *The World Bank*, 2019, <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=SN>.

¹⁹¹ "Pétrole et Gaz: Fiche technique thématique," *République du Sénégal*, 2018, <http://www.finances.gouv.sn/wp-content/uploads/2019/02/FICHE-THEMATIQUE-PETROLE-GAZ.pdf>.

¹⁹² *Ibid.*, 2.

take on the challenge to take advantage of Senegal's opportunities within its oil and gas sector."¹⁹³ Among the twelve offshore blocks included in the 2020 licensing round are ultra-deep blocks in the Mauritania-Senegal-Gambia-Guinea Bissau-Conakry (MSGBC) basin, a region that has recorded high-profile oil and gas discoveries in recent years.¹⁹⁴ This most recent round of oil concessions allotted by PETROSEN and Senegal's Ministry of Petroleum and Energy to foreign investors marks a significant step towards the eventual exploitation of oil and gas in offshore zones along Senegal's coastline.

Even prior to last year's round of concessions, Senegal's plans for the development of its domestic oil and gas sector were well underway, setting the stage for what government and corporate interests hope to be a major industry shaping the Senegalese economy in upcoming years. For instance, oil and gas discoveries at the Senegal-Mauritania border were announced in 2015¹⁹⁵; the two countries signed an agreement in February 2018 to jointly develop an oil block at the border, in close proximity to the Senegalese fishing hub of Saint Louis.¹⁹⁶ In 2014, the Senegalese government announced the discovery of hydrocarbons in the offshore zone situated between the Senegalese capital city of Dakar and neighboring country The Gambia,¹⁹⁷ which has since been named the Sangomar offshore block and is set to be developed by three foreign companies: Cairn, FAR, and Woodside.¹⁹⁸ Both the Sangomar and Saint Louis blocks, among others that have been licensed to foreign investors in recent years, are located near or in marine zones that are crucial for the domestic artisanal fishing sector.

¹⁹³ "Senegal to offer 10 offshore blocks in 2020 license round," *World Oil*, November 18, 2019,

<https://www.worldoil.com/news/2019/11/18/senegal-to-offer-10-offshore-blocks-in-2020-license-round>.

¹⁹⁴ Shem Oirere, "Why Senegal's Offshore Licensing Round is Significant," *Offshore Engineer*, January 29, 2020,

<https://www.oedigital.com/news/475102-why-senegal-s-offshore-licensing-round-is-significant>.

¹⁹⁵ Abdou Gueye et al., "Discovery of oil and gas in Senegal: marine environment, protected fishing areas and marine protected areas"; Advocacy for collective prevention of ecological risks," *AWA*, March 15, 2017, https://horizon.documentation.ird.fr/exl-doc/pleins_textes/divers18-01/010072144.pdf.

¹⁹⁶ "Pétrole et Gaz," *République du Sénégal*, 2018.

¹⁹⁷ Gueye, "Discovery of oil and gas in Senegal," 2017.

¹⁹⁸ "Pétrole et Gaz," *République du Sénégal*, 2018.

Local populations and civil society groups have raised alarm not only about the licenses granted to foreign investors, but also regarding the validity of the environmental and social impact assessments (ESIAs) conducted in order to allow these companies to begin the process of natural resource exploitation. One prime example emerges in the context of the Sangomar oil block, south of Dakar. Australian company Woodside, which is among the companies that received a concession to exploit this zone, published a summary of its ESIA for the Sangomar Deep Offshore Block in November 2018 in which it claims to have consulted with local coastal fishing communities to assess and mitigate the potential social and environmental impacts of oil development in the region. The Woodside summary states:

“an extensive social baseline survey was completed, which included engagement with 57 coastal villages in the Thies and Fatick region including the Sine-Siloum islands. As part of these engagements focus group discussions and local knowledge interviews with the Conseil Local de Pêche Artisanale and other key groups were undertaken in the main coastal fishing settlements to confirm artisanal fishing zones, the most sought-after fisheries, and the frequency of fishing activities in coastal areas and the Sangomar Deep offshore area.”¹⁹⁹

The ESIA also identifies artisanal fisheries as a socio-economic risk factor. However, despite claims from Woodside that its ESIA accounts for and mitigates the potential harms of oil development on artisanal fishing, many actors and local officials in the Fatick region — located near the Sangomar offshore oil block — disagree with Woodside’s characterization of the risks.

Members of the local artisanal fisheries council have expressed concern about Woodside

¹⁹⁹ “SNE Field Development — Phase 1: Environmental and Social Impact Assessment Summary,” *Woodside*, November 2018, 2, https://files.woodside/docs/default-source/current-consultation-activities/senegal-activities/175384-woopet-sne-field-development-%CE%B3%C3%A7%C3%B4-phase-1-environmental-and-social-impact-assessment-summary.pdf?sfvrsn=1b8a78fb_12.

minimizing the negative impacts linked to oil exploitation. In 2018, the mayor of Sokone, a town in the Fatick region on the Sine-Saloum delta, called on Woodside and the other companies involved in the development of the Sangomar block to respond to the concerns raised by local populations, which center on the conservation of marine resources and the economic impacts of the oil development project.²⁰⁰

Blue Growth and Concerns for Fisheries

At the core of offshore oil and gas development in Senegal is a framework for governance of marine resources known as “blue growth.” The concept of blue growth is linked to the notion of sustainable development, dating back to the 1960s when the international community began adopting sustainable development rhetoric in discussions of the use of natural resources, with an underlying understanding of the need for holistic management of marine social-ecological systems. However, the absence of a clear definition for blue growth gives rise to a core tension: Does blue growth entail the maximization of economic growth derived from marine resources, or rather, the prevention of the degradation of marine resources?²⁰¹ As fishing association leaders and fisheries researchers explain, aid organizations and government agencies often adopt the former definition for blue growth — that is, the exploitation of marine resources for the primary purpose of economic growth, without prioritizing conservation of these resources. Offshore oil and gas extraction is just one component of the blue growth agenda

²⁰⁰ “Sénégal : Des pêcheurs et des élus locaux s'inquiètent des conséquences sociales et environnementales de l'exploitation du pétrole; les compagnies les rassurent,” *Business & Human Rights Resource Centre*, November 27, 2018, <https://www.business-humanrights.org/fr/derni%C3%A8res-actualit%C3%A9s/s%C3%A9n%C3%A9gal-des-p%C3%Aacheurs-et-des-%C3%A9lus-locaux-sinqui%C3%A8tent-des-cons%C3%A9quences-sociales-et-environnementales-de-l'exploitation-du-p%C3%A9trole-les-compagnies-les-rassurent/>.

²⁰¹ Anne Maria Eikeset et al., “What is blue growth? The semantics of ‘Sustainable Development’ of marine environments,” *Marine Policy*, Volume 87, January 2018, <https://www.sciencedirect.com/science/article/pii/S0308597X17306905>.

promoted by corporate and government interests; other components include seabed mining for the extraction of minerals and marine biotechnology for pharmaceuticals and chemicals.²⁰²

Béatrice Gorez, coordinator of the Coalition for Fair Fisheries Arrangements (CFFA), said she sees the promotion of blue growth as a continent-wide concern. Gorez explained that “particularly with COVID, you have more and more African countries saying post-COVID economic recovery will go full-frontal blue growth,” in pursuit of what governments see as the next frontier for economic growth.²⁰³ Ecological questions are at the forefront of debates surrounding oil and gas development under the blue growth agenda, especially in the context of fisheries. An article published by Senegalese news outlet *Le Quotidien* in 2017 raises questions about limited knowledge of ecological vulnerabilities²⁰⁴ — a gap that, at this key moment in the evolution of oil development in Senegal, could soon prove detrimental to the marine environment. Moreover, according to COAPA and APRAPAM president Gaoussou Gueye, local communities are forced to deal with the environmental impacts of oil development, despite limited access to information about these impacts in their native languages.²⁰⁵

Beyond the economic and ecological risks attached to oil spills, offshore development of oil and gas in Senegal could give rise to what Béatrice Gorez calls a “face-to-face between artisanal fisheries and oil companies,” resulting in the further marginalization of artisanal fishing communities.²⁰⁶ The expansion of this extractive industry will likely infringe on fishing zones, preventing small-scale and industrial fishers alike from accessing certain zones and thus sparking conflicts between local fisheries actors and the oil and gas industry. According to Gaoussou

²⁰² “The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries,” *The World Bank Group*, 2017, 13, https://sustainabledevelopment.un.org/content/documents/15434Blue_EconomyJun1.pdf.

²⁰³ Béatrice Gorez, interview with author, February 9, 2021.

²⁰⁴ <http://lequotidien.sn/elements-dalerte-face-a-la-decouverte-de-petrole-et-de-gaz-au-senegal/>

²⁰⁵ Gaoussou Gueye, interview with author, February 10, 2021.

²⁰⁶ Béatrice Gorez, interview with author, February 9, 2021.

Gueye, the corporate and government actors promoting offshore oil and gas extraction “do not take into account the impact on artisanal fishing.”²⁰⁷ In a similar vein, Papa Mamadou Cisse, who works for French NGO Le Partenariat in the northern Senegalese city of Saint Louis, said Senegal’s path to becoming a major exporter of oil and gas will likely prompt restrictions on fishing zones. Cisse cited the example of British multinational oil and gas company BP, which is planning to build an offshore drilling rig off the coast of Saint Louis, a prominent fishing region. Fishers will be prevented from entering the 500-meter zone around the BP offshore platform — a type of exclusion that he said will “fundamentally pose problems.”²⁰⁸ BP claims its oil and gas operations in Senegal, as well as in Mauritania, will offer “a significant source of domestic energy and revenue.”²⁰⁹ However, concerns about heightened pressure on the local artisanal fishing sector reveal just one of the potential detrimental consequences of offshore oil and gas exploitation on local livelihood systems.

²⁰⁷ Gaoussou Gueye, interview with author, February 10, 2021.

²⁰⁸ Papa Mamadou Cisse, interview with author, February 3, 2021.

²⁰⁹ “Senegal,” BP, <https://www.bp.com/en/global/corporate/what-we-do/bp-worldwide/bp-in-senegal.html>.

West Africa's Expanding Fishmeal and Fish Oil Industry *Disproportionate Impacts on Women*

In November 2019, dozens of residents of the town of Gandiol — women and men alike — gathered under a yellow banner with bold words capturing the essence of their protest: “No to the diversion of our fish to feed other fish.” The fishing community of Gandiol, situated in close proximity to Saint Louis in the northernmost region of Senegal, has been hard hit by the environmental, health, and economic impacts of a Chinese fishmeal and fish oil factory called Sea Production, which was installed in the area in 2016.²¹⁰ Three years after the installation of the factory, the local community decided to take action by organizing a protest with the support of NGO Greenpeace, bringing attention to the multitude of harms to local livelihoods and daily life caused by the production plant. Ndatte Diallo, a Gandiol resident interviewed at the protest, expressed concern about the factory's impacts on education in the community, explaining, “Each time the factory operates, problems arise in our classrooms because our lessons are disrupted. We are tired of the odor that the fishmeal factory causes each time. ... These students, who are our children, deserve to be in a safe environment, like all other students. We are asking the state to close this factory.” Amina Dia, another local resident, highlighted the negative health effects of breathing in toxic air.²¹¹

Apprehensions about fishmeal and fish oil factories in Senegal extend far beyond environmental and health impacts, though such concerns remain at the heart of local mobilization in opposition to the industry. Fishing livelihoods — for both fishers and fish processors — are also under heightened pressure as a direct result of these production plants, making the economic effects of the industry in the artisanal fishing sector a core issue as well. Environmental

²¹⁰ Boris Ngounou, “SENEGAL: Fish meal factory causes air pollution in Gandiol,” *Afrik 21*, November 20, 2019, <https://www.afrik21.africa/en/senegal-fish-meal-factory-causes-air-pollution-in-gandiol/>.

²¹¹ Dakaractu TV HD, “ST-Louis/Pollution de l'Usine Chinoise Sea Production : Les populations expriment leurs inquiétudes,” YouTube Video, 1:18, November 18, 2019, <https://www.youtube.com/watch?v=I4OpFx2N2Cw>.

degradation and socio-economic impacts in the artisanal fishing sector are deeply linked. Fishmeal factories incentivize overfishing, placing an additional strain on already-depleted marine resources and thus rendering artisanal fishers' jobs even more challenging; these factories also directly harm Senegal's artisanal fish processors — almost all of whom are women — by purchasing and processing the fish on which these women's livelihoods depend. It is important to assess the global forces driving the expansion of West Africa's fishmeal and fish oil industry in order to understand why this industry poses a mounting threat to artisanal fishing livelihoods, with a particularly damaging impact on women in the artisanal sector.

Expansion of the Industry in the Sub-Region

Fishmeal factories began to operate in West Africa in the 1970s and 1980s, when coastal countries signed fishing agreements with the Soviet Union in exchange for investments in the region. At first, the industry struggled. Factories in Mauritania closed due to low profits. The decades since, however, have marked a notable shift towards a booming fishmeal and fish oil industry in the region, reflecting the global growth of fish farming — also known as aquaculture — as wild fish stocks continue to collapse in the world's seas. In 1967, fishmeal production in Senegal was recorded at 2,000 tonnes; by 2016, production had risen to 14,000 tonnes.²¹² Demand for fishmeal — a yellow powder made by cooking and pulverizing fish — has skyrocketed in recent years due to its widespread use in the United States, Europe, and Asia as a protein-rich supplement in the industry of fish farming. Farmed fish account for about half of the seafood consumed globally.²¹³ In fact, the aquaculture industry is the fastest-growing segment of global food production.²¹⁴ This spike in demand has turned West Africa into one of the

²¹² Emmanuelle Landais, "Foreign-owned fishmeal factories in Senegal threaten local livelihoods," *RFI*, December 4, 2019, <https://www.rfi.fr/en/international/20191203-foreign-owned-fishmeal-factories-senegal-threaten-local-livelihoods>.

²¹³ *Ibid.*

²¹⁴ Ian Urbina, "Fish Farming is Feeding the Globe. What's the Cost for Locals?" *The New Yorker*, March 1, 2021, <https://www.newyorker.com/magazine/2021/03/08/fish-farming-is-feeding-the-globe-whats-the-cost-for-locals>.

fastest-growing producers of fishmeal in the world.²¹⁵ Senegal, along with its coastal neighbors Mauritania and The Gambia, does not have a significant domestic aquaculture industry, meaning the production of fishmeal and fish oil in the region is therefore primarily exported abroad — to other African countries and importers outside the continent.²¹⁶

Of these three West African countries, Mauritania has the largest export-oriented fishmeal and fish oil industry, with thirty-three operational factories as of March 2019, according to a Greenpeace investigation.²¹⁷ Chinese demand for fishmeal, in particular, is a driving force behind the installation of fishmeal factories in Mauritania. In 2017, China surpassed the European Union as the top importer of fishmeal from Mauritania; China has steadily increased its imports of fishmeal from the West African country since 2015, with over 53,000 tonnes imported in 2018.²¹⁸ China is by far the world’s largest aquaculture producer due to its massive carp industry, which explains the Chinese interest in installing fishmeal and fish oil factories in West Africa to sustain domestic fish farming endeavors and control the supply chain.²¹⁹

Senegal’s fishmeal and fish oil industry pales in comparison; as of March 2019, only four factories were active in the country — a fraction of the number found in Mauritania. An additional two factories were under construction, and another two were temporarily inactive.²²⁰ Nonetheless, the industry has disproportionately severe impacts on the Senegalese artisanal fishing sector, as is the case in neighboring The Gambia as well. Both countries’ reliance on their small-scale fisheries for employment and food security renders their populations particularly

²¹⁵ Ibid.

²¹⁶ “A Waste of Fish: Food security under threat from the fishmeal and fish oil industry in West Africa,” *Greenpeace*, June 2019, 22, <http://storage.googleapis.com/planet4-africa-stateless/2019/06/6097170a-a-waste-of-fish-report-en-low-res.pdf>.

²¹⁷ Ibid., 49-50.

²¹⁸ Ibid., 23.

²¹⁹ “Aquaculture: A Regional Look at a Global Industry,” *Cleantech Group*, August 14, 2018, <https://www.cleantech.com/aquaculture-a-regional-look-at-a-global-industry/>.

²²⁰ “A Waste of Fish,” *Greenpeace*, June 2019, 50.

vulnerable to the socio-economic harms stemming from factory operations. The aforementioned local mobilization against the Chinese-owned fishmeal factory in Senegal’s Saint Louis region is just one insight into the gravity of the crisis posed by the industry’s expansion — a crisis that has prompted many actors in the artisanal fishing sector to take action to protect their livelihoods and communities.

Overfishing, Competition with Women Processors, and Pollution

Béatrice Gorez, coordinator of the Coalition for Fair Fisheries Arrangements (CFFA), identified three primary concerns with fishmeal and fish oil factory operations in the context of artisanal fisheries: further overexploitation of already-scarce marine resources, a lack of raw material for women fish processors, and pollution.²²¹ When artisanal fishers intend for their catches to be sold in local markets, they have no incentive to fish more than they can sell. However, the introduction of fishmeal and fish oil factories incentivizes overfishing, since factories purchase as much as fishers can catch, with little to no regard for ecological conservation. This economic motivation for artisanal fishers to fish beyond sustainable levels only contributes to depletion of crucial marine resources, which are already endangered by industrial vessels that pillage Senegal’s territorial waters. Additionally, when artisanal fishers sell their landings to factories, they are essentially diverting scarce resources away from women fish processors who rely on the same raw materials to sustain their livelihoods. The fact that industrial factories and Senegalese small-scale fish processors have overlapping interests in securing access to fish — notably, small pelagic species — creates heightened competition, with the factories paying more for the fish than local fish processors can afford.²²²

²²¹ Béatrice Gorez, interview with author, February 9, 2021.

²²² Diaba Diop, interview with author, March 9, 2021.

Mor Mbengue, the national coordinator of artisanal fishing association UNAPAS (Union Nationale des Pêcheurs Artisanaux du Sénégal), has observed how a Spanish-owned fishmeal factory in the Senegalese coastal city of Kayar has affected the local fishing community. He said populations living near the factory have experienced illnesses linked to industrial pollution. Mbengue added that the factory has stripped many of Kayar’s women fish processors of their jobs. He wonders, “What is the point of modernizing fish processing if women can no longer access the resources?”²²³ Food insecurity is intrinsically linked to threats to fish processing livelihoods, as women employed in this field of work are a critical component of the food chain that eventually brings fish to domestic markets for local consumption.

Greenpeace Africa oceans campaigner Abdoulaye Ndiaye raised similar concerns — both environmental and socio-economic — regarding the rapid expansion of the fishmeal and fish oil industry in West Africa. He highlighted “the risk it poses in terms of environmental degradation; women’s livelihoods are threatened, livelihoods in the fishing sector are threatened, food security in Senegal is threatened.” Ndiaye also sees the mounting challenges posed by the fishmeal and fish oil industry as being linked to Senegalese artisanal fishers’ fishing activity in neighboring Mauritanian and Gambian waters out of necessity, due to depleted resources in Senegal’s EEZ. There is therefore a clear regional dimension to the industry’s expansion, only intensifying existing tensions. The Senegalese government, cash-strapped from decades of restrictive aid regime policies and forced to spend large shares of government resources to finance debt servicing, is drawn to the prospect of collecting taxes from these factories. From the government’s perspective, tax revenue is the primary incentive to allow foreign-owned fishmeal and fish oil factories to operate in Senegalese territory. Ndiaye, however, said he wishes leaders understood that the taxes these factories pay to the Senegalese state will not contribute to the

²²³ Mor Mbengue, interview by author, February 2, 2020.

country's development.²²⁴ The overfishing, livelihood and food security threats, and environmental degradation outweigh potential financial gains from tax payments.

Civil Society Responses and Mobilization

In recognition of the aforementioned ecological and socio-economic harms caused by the fishmeal and fish oil sector in West Africa, NGOs and Senegalese fishing associations have mobilized in an effort to thwart further expansion of the industry. Beginning in 2012, at a time when civil society groups were starting to rapidly augment their activities in Senegal's fishing sector, the Network of Artisanal Fishery Women of Senegal (REFEPAS) became a key player in grassroots mobilization against the factories. Diaba Diop, president of REFEPAS and an artisanal fish processor herself, said many women in her field began to realize about a decade ago that these factories were threatening their livelihoods in powerful and tangible ways, prompting the creation of REFEPAS as a mechanism for collective action against the export-oriented industry that exploits resources previously used for local consumption. REFEPAS continues to organize campaigns and meetings with fisheries authorities with the goal of ending factory operations in Senegal; the group is a member of a coalition for transparency in the management of small pelagic fish, which are crucial for the artisanal sector. Their campaigns have resulted in commitments from officials to freeze fishmeal factory operations — although Diop said there are ongoing reports of factories continuing their operations despite the alleged freeze. “We want to show the state that fish is rare, and the population needs it,” Diop said. “We have organized advocacy campaigns. But the factories are still there.” Diop warned that if actors in the fisheries sector fail to pay attention to the fishmeal and fish oil industry, the crisis will only intensify and small pelagic fish will become increasingly rare in Senegalese waters.²²⁵

²²⁴ Adboulaye Ndiaye, interview by author, January 28, 2021.

²²⁵ Diaba Diop, interview with author, March 9, 2021.

While China is the global leader in fishmeal imports, as exemplified by Chinese dominance in the Mauritanian fishmeal industry, it is by no means the only foreign actor implicated in the industry in West Africa. In fact, the European market is the most substantial destination for fish oil exports from West Africa, which are typically used in the pharmaceutical industry and among cosmetic companies. Europe is also a notable importer of fishmeal from West Africa. French cosmetic company Olvea Group, for example, owns a fishmeal processing plant in Mauritania. In light of European involvement in the industry, the Coalition for Fair Fisheries Arrangements (CFFA) has called on European industries to disinvest in West Africa's fishmeal and fish oil sector. A CFFA statement published in December 2019 asserts, "While Europe's role in this situation is not as troubling as others — particularly China, but also Turkey — there are some European firms that are investing in factories in West Africa, while others are relying on sourcing fishmeal or oil from these countries ... European companies are aware of the criticisms they face. However, rather than accepting responsibility and disinvesting, several are trying hard to justify their commercial interests and investments."²²⁶ One way in which European companies are attempting to justify their investments is through efforts to make the industry more "sustainable." Take, for instance, French company Olvea, which is engaged in a so-called "fisheries improvement project" (FIP) in Mauritania to help the fishmeal and fish oil industry there become more responsibly managed. Some Norwegian companies that supply fishmeal to European salmon farms are also engaged in this same FIP, which is aimed at ensuring eco-labelling of West Africa's fishmeal and fish oil products. CFFA, however, questions the credibility and efficacy of such attempts to legitimate European investments through claims of

²²⁶ Andre Standing, "European industries must disinvest in West Africa's booming fishmeal and fish oil sector," *CFFA*, December 10, 2019, https://www.cffacape.org/publications-blog/european-industries-must-disinvest-in-west-africas-booming-fishmeal-and-fish-oil-sector#_ftn5.

sustainable management. CFFA writes, “the push for a FIP and eventually ‘eco-labelling’, ignores the fundamental point that the rights of local artisanal fishers, food processors and traders, as well as people’s right to food in the region, must take precedence over the profits of companies in developed countries.”²²⁷ Such concerns form the foundation of calls from CFFA and other NGOs for foreign companies to completely disinvest in the industry in West Africa, rather than continue to try to justify their engagements.

In condemning the expansion of the industry in West Africa, NGO Greenpeace underscores the ways in which the development of fishmeal and fish oil production in the region undermines international commitments and legal obligations regarding fisheries management and food security. For example, the 1995 United Nations Fish Stocks Agreement (UN FSA), which focuses on migratory fish stocks, asserts that states must apply the precautionary approach to fisheries management in order to maintain fish stocks at levels capable of producing maximum sustainable yield. Under this agreement, states are also required to implement measures to prevent excess fishing capacity, with the interests of artisanal fishers in mind. In its extensive report on West Africa’s fishmeal and fish oil industry, Greenpeace raises concerns that the industry’s expansion violates the conservation-centered approach mandated by the UN FSA — which Senegal ratified in 1997.²²⁸ Additionally, Greenpeace points to the implementation guidelines for the African Charter on Human and People’s Rights — the primary international human rights instrument on the continent — as another international commitment violated by the fishmeal and fish oil industry. The Charter — which Senegal, Mauritania, and The Gambia have all ratified — includes states’ obligations to “refrain from and protect against destruction and/or contamination of food sources.” Greenpeace views the process of turning local populations’ food

²²⁷ Ibid.

²²⁸ “A Waste of Fish,” *Greenpeace*, June 2019, 38.

into fishmeal as standing in contradiction to this Charter stipulation related to food security.²²⁹

These are just two of the many international commitments leveraged by NGOs such as Greenpeace in their advocacy against the industry's expansion in West Africa.

The Gendered Impacts of Fishmeal and Fish Oil Development

Fishmeal and fish oil development in Senegal and its neighboring countries has widespread consequences, felt among those employed in artisanal fisheries and throughout local populations more broadly. Women, however, are bearing the brunt of these repercussions as fish processing livelihoods are rapidly vanishing. The UN Special Rapporteur on the Right to Food, in a 2019 report on fishery workers and the right to food, stated that globally, women comprise almost half of the secondary sector workforce in fisheries — that is, the processing, sale, and trade of fish.²³⁰ This figure is higher in Senegal, where fish processing is a profession almost exclusively reserved for women. Awa Digal, a Senegalese fish processor, said in a 2021 interview with the African Confederation of Artisanal Fishing Professionals (CAOPA), “We do not have any more products to transform, and our profession is seriously threatened.” Digal, among other female fish processors and smokers interviewed in the video, laments the challenge of juggling childcare and work — a challenge all too familiar for Senegal's female fish processors, many of whom are tasked with taking care of their children while simultaneously trying to compete with industrial fishmeal processing facilities to make a living and sustain their families.²³¹ In a society like Senegal where women are expected to take care of domestic affairs, threats to fish processing livelihoods — an important source of employment and income — have particularly severe repercussions on quality of life and financial security for women.

²²⁹ Ibid., 35-36.

²³⁰ “Report of the Special Rapporteur on the right to food,” *UN Human Rights Council*, January 25, 2019, <https://undocs.org/A/HRC/40/56>.

²³¹ CAOPA TV. “Journée Internationale des Femmes - CAOPA 2021.” YouTube Video, 3:28. March 8, 2021. <https://www.youtube.com/watch?v=OY9y1FL2m8E>.

Conclusion

This thesis identifies the interconnected components — national, regional, and international — of overexploitation of fish stocks in Senegal, with policy at the center of the analysis. Through my study of the primary drivers of fish stock decline, I conclude that production-oriented national policies and international aid patterns encourage overexploitation of Senegal's fish stocks, putting artisanal fishing livelihoods at risk.

My research also identifies the local groups at the forefront of political mobilization to protect artisanal fishing livelihoods in a country deeply dependent on its fishing sector for employment and food security, revealing how actors in the artisanal sector are functioning within this broader system. As the Senegalese government continues to encourage foreign investment in exploitative industries such as export-oriented fishmeal production and offshore oil and gas development, it will only become increasingly important in the coming years to critically examine the policies that enable industrial overexploitation of marine resources, thus bringing Senegal's artisanal fisheries even closer to the brink of collapse.

This thesis serves as a launching point for further study of threats to artisanal fishing livelihoods, as well as the varied responses and survival strategies among artisanal fishing communities. Future research on Senegal's fishing livelihoods would benefit from systems analyses within specific rural localities, including the Sine Saloum delta region, just north of The Gambia, and the Senegal River coastal region along the northern border with Mauritania. The national and international policy variables identified in this thesis will provide essential context for in-depth studies of fishing livelihoods in these rural locations. Moreover, the analysis of the role of international aid offered in this thesis lays the groundwork for future in-depth studies of how development aid funding fits into the dynamics of marine resource exploitation — a crucial

component of the global political economy system that continues to pose a direct threat to the sustainability of Senegal's artisanal fishing communities.

Glossary of Acronyms

AIS	Automatic Identification System
APRAPAM	Association for the Promotion and Accountability of Actors in Maritime Artisanal Fishing
ATLAFCO	Ministerial Conference on Fisheries Cooperation Among African States Bordering the Atlantic
CAOPA	African Confederation of Artisanal Fishing Professionals
CECAF	Fishery Committee for the Eastern Central Atlantic
CFFA	Coalition for Fair Fisheries Arrangements
CLPA	Local Artisanal Fisheries Council
CNFC	China National Fisheries Corporation
CONIPAS	National Interprofessional Council for Small-Scale Fisheries in Senegal
DWF	Distant-water fishing
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
ESIA	Environmental and Social Impact Assessment
FAO	Food and Agriculture Organization of the United Nations
FIP	Fisheries Improvement Project
GAIPES	Senegalese Association of Fishing Companies and Ship Owners
IUU	Illegal, unreported, and unregulated
MPA	Marine Protected Area
MSGBC	Mauritania-Senegal-Gambia-Guinea Bissau-Conakry basin
MSY	Maximum sustainable yield
ODA	Official Development Assistance
PETROSEN	National Oil Company of Senegal
PRCM	Regional Partnership for Coastal and Marine Conservation
PSE	Plan Sénégal Emergent
REFEPAS	Network of Artisanal Fishery Women of Senegal
SFPA	Sustainable Fisheries Partnerships Agreement
SRFC	Sub-Regional Fisheries Commission
UNAPAS	Union Nationale des Pêcheurs Artisans du Sénégal
UN FSA	United Nations Fish Stocks Agreement
WARFP	West Africa Regional Fisheries Program
WTO	World Trade Organization

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Appendix: Interview Questions

Questions in French for artisanal fishers, activists, and fishing association leaders:

- Pouvez-vous vous présenter - votre nom, votre poste?
- Quel est le statut des stocks de poissons dans les eaux sénégalaises?
 - Quels sont les stocks les plus importants?
 - Y a-t-il une baisse de ces stocks? Depuis quand? Comment le savez-vous (quelles données)?
- Avant d'aborder des sujets plus spécifiques - d'abord, une question générale: quelles sont les contraintes majeures à la durabilité de la pêche artisanale au Sénégal?
 - Comment classeriez-vous ces contraintes? Lesquelles d'entre elles sont les plus préoccupantes à votre avis?
- Quelles sont les régions du Sénégal où la pêche artisanale joue un rôle important dans les moyens de subsistance?
- La pêche illégale, non déclarée et non réglementée (INN): Quelle est l'étendue de ce phénomène?
 - Dans quelles régions du Sénégal est-elle la plus répandue?
 - A quel point la pêche illégale est-elle un déterminant du statut des stocks de poisson au Sénégal?
 - Qui est responsable - la flotte industrielle sénégalaise ou des flottes industrielles étrangères? Ou les deux? A quel point?
 - Quelles sont les activités illégales parmi ces flottes industrielles?
 - Comment estimez-vous la capacité du gouvernement sénégalais de lutter contre la pêche illégale?
 - Efficace? Y a-t-il assez de ressources? Pourquoi ou pourquoi pas?
- Accords de pêche: Parlez-moi des accords de pêche entre le gouvernement du Sénégal et des pays étrangers.
 - Combien? Avec quels pays? (Où trouvez-vous ces informations? Les informations sur les accords sont-elles transparentes?)
 - Une baisse ou une augmentation du nombre d'accords signés récemment?
 - Expliquez-moi ce qui s'est passé l'année dernière, quand le gouvernement a annoncé des dizaines de nouveaux accords. Quel est le statut de ces accords?
- Les co-entreprises (joint ventures) - navires étrangers qui utilisent le drapeau sénégalais, pêchent dans les eaux sénégalaises. Est-ce répandu?
 - Transparent?
- Instruments pour la gestion régionale des pêcheries. Y a-t-il des mécanismes en place?
 - Quelle est la nature de la mise en œuvre et l'application de ces instruments régionaux?

- Que pensez-vous de la Commission Sous-Régionale des Pêches? Cette commission est-elle efficace?
- Quels sont les défis dans le système de gestion régionale? Que fait-il faire pour améliorer la coopération régionale sur les pêcheries?
- Adaptation parmi les pêcheurs artisanaux: quelles sont leurs stratégies d'adaptation?
 - La migration?
 - Quelles sont les autres industries ou secteurs qui attirent ceux qui ne peuvent plus rester dans la pêche?
 - Changements dans les pratiques de la pêche artisanale?
- Parlez-moi de l'industrie de la farine de poisson. Quels en sont les impacts sur les communautés de pêche artisanale? Sur les transformateurs de poisson?
- Que pensez-vous de l'argument que la surpêche parmi les pêcheurs artisanaux est une des principales pressions sur les ressources halieutiques?
- L'activisme au Sénégal pour un secteur de la pêche durable: décrivez la nature de cet activisme.
- Que pensez-vous de l'avenir de la pêche artisanale au Sénégal?
 - Avez-vous de l'espoir concernant la durabilité de ce secteur?

Questions for Beatrice Gorez, Coalition for Fair Fisheries Arrangements (CFFA):

- Please introduce yourself.
- Tell me about Coalition for Fair Fisheries Arrangements (CFFA) work. What specific issues related to fishing agreements do you work on, primarily?
- Current EU-Senegal fishing agreement: European Commission says it promotes sustainable fishing practices. Do you agree? Why or why not?
- What is the nature of joint ventures in Senegal? Is it a common phenomenon? With which countries, mainly?
- What is the link between joint ventures and IUU fishing? How do joint ventures facilitate IUU fishing?
 - What is your assessment of the Senegalese government's ability to monitor IUU fishing?
- How does international aid play a role in West African governments' decision making processes in regards to signing access agreements and joint venture arrangement?
- Tell me about concerns regarding lack of transparency in joint venture arrangements.
- What are the primary consequences of joint ventures for artisanal fishing communities?
- Even in instances in which vessels carrying the Senegalese flag attribute at least 51% of their value to Senegalese nationals or nationals of an ECOWAS country (as mandated by Senegal's Code de la Marine marchande), does the Senegalese state benefit from the arrangement?
 - Is this speculation in the code respected, generally?

- Tell me about what happened in April 2020 when 52 Chinese vessels and two Turkish vessels were going to enter into an agreement with Senegal. What concerns were raised among civil society actors concerning these licenses?
 - How did civil society respond? What was the outcome of this mobilization?
- EU subsidies and other foreign states that enter in joint ventures with African states - how do these subsidies play a role in incentivizing distant water fishing? How do they impact overfishing in West African waters?
- How would you explain the reasoning behind West African governments' decisions to continue signing access agreements, despite the fact that they usually do not gain much from these agreements, and it's really the foreign states that gain?
- What should West African states do? Stop allowing joint ventures? Modify the joint venture to ensure they benefit to a greater extent?
- What is your response to the argument that artisanal fishing is among the primary forces putting a strain on marine resources?
- What do you envision for the future of Senegal's artisanal fishing industry?

Questions for Reyna Gilbert, Pew Charitable Trusts:

- Please introduce yourself and tell me about your work with the Harmful Fisheries Subsidies Project.
- Tell me about the Stop Funding Overfishing campaign. How and when was it created? With what goal?
- WTO member countries missed the 2020 deadline for an agreement. What do you envision moving forward? Are you optimistic they'll form an agreement in the coming years?
- WTO negotiations to end harmful fisheries subsidies: what would an end to these subsidies look like, ideally? A complete global ban, or more moderate reform?
- What are the primary countries of concern in your work -- i.e. the countries with the most harmful fisheries subsidies? Are they mostly developed countries?
- Pew has mentioned in articles that "any flexibilities granted must be restricted to helping developing nations transition away from their harmful fishing subsidies and must be time limited, covering a finite period. Developed nations should not be granted exceptions that allow them to continue providing destructive fishing subsidies even if they've put management measures in place." How do you think the approach to ending subsidies should differ for developed and developing countries?
- Do you have concerns about the enforcement of bans on fisheries subsidies? How do you propose that governments be held accountable to transparency about subsidies for their industrial fleets?
- Beyond ending harmful subsidies -- do you have other proposals for policy reform to protect fisheries globally?

- How would you assess the global impact of subsidy reform? Do you see subsidy reform as having a far-reaching global impact, or more focused on specific regions?
- When you talk about harmful fisheries subsidies, what exactly do you mean by harmful? How do you differentiate between harmful subsidies and non-harmful subsidies?



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May 13, 2021

TO: African Studies Center
UC Berkeley Atten: Committee for Undergraduate Thesis Award

FROM: Claudia J. Carr, Associate Professor
Department of Environmental Science, Policy and Management
College of Natural Resources

Dear Committee Members:

It is my great pleasure to write to you in support of Ms. Danielle Kaye for the Center for African Studies Outstanding Undergraduate Thesis Award. I have served as Ms. Kaye's honor's thesis advisor for her work within Global Studies, which she has submitted under the title, "Livelihoods in Crisis: Threats to Senegal's Artisanal Fishing Communities".

I have known Ms. Kaye since her participation in my International Rural Development Policy class in 2019. As a student in my undergraduate class, Ms. Kaye quickly distinguished herself as a field-experienced individual within Africa—specifically, in Senegal, where she not only studied (in the UC Berkeley program there), but also traveled and familiarized herself with different rural areas. She became keenly interested in the problems of small-scale fishers, with whom she developed some positive channels of communication and certainly learned important realities concerning their own view of future challenges and options. Ms. Kaye wrote an in-depth paper about the problems of marine fisheries decline in Senegal and its neighboring countries—a paper which clearly helped focus her future plans for research.

Following her junior year, I learned of her plan to return to Senegal in order to delve far more deeply into the matter of recent changes in fisheries economy, the causes of those changes, the different responses that small-scale fishers have fashioned, and the possible implications of these for future policymaking within Senegal. I agreed to work with her as an advisor for her Global Studies based senior honors thesis regarding this topic. (Her planned additional in-country work has obviously been delayed, due to the pandemic).

Throughout this past academic year, I have worked with Ms. Kaye in the design and implementation of her ambitious study regarding artisanal fisheries in Senegal and the pressures brought to bear on traditional fishers, primarily due to foreign fishing fleets, fisheries industrialization and 'modernization' efforts—particularly, through international aid programs and foreign investment. Ms. Kaye's level of focused interest, breadth and depth of investigative effort, and strong sense of 'on-the-

ground' as well as conceptual or theoretical concerns are truly rare qualities among undergraduate seniors, in my experience. The scope and depth of her honors thesis investigation is extraordinary—clearly of graduate student caliber.

There is a very small literature concerning the dynamics of small-scale fishing communities in Senegal, and Ms. Kaye had already mastered much of it by a few months into her thesis work. She also delved into FAO/UN, African governmental, OECD and other 'raw' data systems available for the western Africa/Senegal region. As her project matured, she formulated and executed strong communication and information gathering with local grassroots organizations (NGOs), regional government (fisheries) officers, private sector-based investors, and artisanal fishers themselves. The range and detailed nature of these communications have greatly augmented her overall research effort and certainly the originality of her work. By now, she has already received invitations from both Senegalese governmental and independent research institutes in Senegal as potential bases and sponsorship of her planned future work there.

Ms. Kaye's thesis has already shed new light on the full range of dynamics contributing to small-scale fishing decline in Senegal and her work promises to be of use in future public policy formulation and implementation in the fisheries sector.

I wholeheartedly recommend Ms. Kaye for the Center for African Studies Undergraduate Thesis Award. I hope that you will give her every consideration.

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