

A REVIEW ON IUU FISHING IN SOMALIA: A POLICY AND ECONOMIC IMPLICATIONS

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ABSTRACT

Illegal, unreported, and unregulated (IUU) fishing constitutes a significant and persistent threat to global marine sustainability, with particularly devastating consequences for fragile states such as Somalia. This study reviews and synthesizes academic and institutional research to assess the prevalence, primary drivers, and impacts of IUU fishing in Somali waters. Findings reveal that due to a decades-long absence of effective maritime governance, foreign industrial fleets have exploited the country’s extensive and resource-rich exclusive economic zone with impunity. The review establishes that the key drivers of IUU fishing are deeply entrenched, stemming from governance and legal weaknesses, pervasive corruption, the economic vulnerability of artisanal fishers, and critical gaps in national and international enforcement. The paper highlights that IUU fishing results in overexploitation of key commercial species and physical damage to delicate marine habitats; it inflicts huge losses on local communities, undermining livelihoods and exacerbating food insecurity; and it fuels grievances among coastal communities and has been historically linked to the rise of maritime piracy and broader instability. The study concludes that IUU fishing in Somalia is a complex and systemic issue that is often interconnected with other illicit maritime crimes, such as waste dumping and arms trafficking. To effectively combat this issue, a multifaceted approach is needed. This includes strengthening institutional capacity, implementing anti-corruption measures, investing in advanced surveillance, and increasing regional and international cooperation. These steps are vital for protecting marine resources, promoting economic stability, and enhancing maritime security in the Horn of Africa.

Keywords: Keyword IUU fishing, Coastal communities, Maritime security, Marine sustainability, Piracy.

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INTRODUCTION

The world’s oceans are an essential source of seafood, livelihoods, and economic growth; however, illegal, unreported, and unregulated (IUU) fishing poses a growing danger to their sustainability (Ibrahim *et al.*, 2024; Song *et al.*, 2020). IUU fishing is an activities that violate national or international laws (illegal), fails to report or misreports catches (unreported), and operates outside of established conservation and management measures (unregulated), all of which contribute to the degradation of sustainable fisheries management (Auld *et al.*, 2023; Ukiyedeikime, 2025). This illegal practice seriously harms marine ecosystems, distorts markets, and deprives nations of resources (Zhu & Tang, 2024). \$26-\$50 billion is lost each year economically as a result of IUU fishing worldwide (Wold, 2023).

IUU fishing remains a persistent global issue, affecting multiple regions. An estimated 500,000 tonnes of IUU fish, worth approximately €1.1 billion, enter EU markets annually, due to inconsistent enforcement and reliance on paper-based systems. The economic impact reaches up to €10 billion, including the loss of 27,000 jobs (European Parliament, 2023; European Court of Auditors, 2022). In the South China Sea and South Seas, IUU fishing has caused 26–33% of fish stocks to be overexploited, with up to 21% collapsed (Pauly & Zeller, 2016). Territorial disputes, weak governance, and rising demand are major drivers, threatening food security for millions (Stimson Center, 2025; Wilcox *et al.*, 2021). Latin America and the Caribbean experience annual losses of USD 2.3 billion due to IUU fishing, with additional impacts on income (USD 600 million) and tax revenue (USD 500 million). Ecosystem damage, food insecurity, and economic marginalization of artisanal fishers are major concerns (Bergh *et al.*, 2016; Oxford Analytica (2020). Africa is a global IUU hotspot, particularly West Africa, where up to 49% of industrial IUU vessels operate (Lakshman Kadirgamar Institute, 2021). Economic losses reach USD 3 billion annually in nations such

as Senegal and Sierra Leone. In Somalia, annual losses are estimated between USD 300 and 450 million due to foreign fleets fishing illegally in Somali waters (Financial Transparency Coalition, 2022; Risk Intelligence, 2024).

Somalia’s challenges are rooted in weak governance, lack of monitoring and enforcement infrastructure, and institutional fragility. With 3800 km of coastline and 1.2 billion km², and highly productive fishing grounds, the country is a prime target for industrial IUU fleets. The absence of monitoring, control, and surveillance (MCS) systems, compounded by corruption and foreign exploitation, severely undermines sustainable development. Environmental degradation, such as coral damage and fish stock depletion, economic loss, and increased food insecurity, is among the key impacts (European Commission, 2022). In addition, local resentment has fueled maritime crime, including piracy. To address these issues, a review of the prevalence, drivers, and impacts of IUU fishing in Somalia is needed to inform evidence-based interventions. Specifically, the study aims to assess the reported prevalence and scale of IUU fishing in Somali waters; identify the primary drivers of IUU fishing in Somalia; evaluate the environmental, economic, and social impacts of IUU fishing on Somalia; and pinpoint knowledge gaps in the existing literature on IUU fishing in Somalia. The findings will support policy development and regional cooperation toward enhancing maritime security, sustainable fisheries, and long-term resilience in the Horn of Africa.

METHODS

This study employed a traditional literature review method to synthesize existing academic and institutional research on IUU fishing in Somali waters. Targeted searches utilizing keywords such as “IUU fishing Somalia,” “fisheries governance,” and “piracy and fisheries” produced relevant items in academic databases (Scopus, Web of Science,

and Google Scholar) and institutional repositories (FAO, UNODC, and Secure Fisheries). The documents were selected based on their direct relevance to Somalia, methodological transparency, and contribution to one or more of the following thematic areas: Security linkages, governance and enforcement challenges, socioeconomic consequences, and ecological and biodiversity impacts. A data matrix was created by extracting and compiling important information, such as the study's goals, methodology, and key findings.

This review study examines the prevalence, drivers, and impacts of Illegal Unwanted Fisheries (IUU) in Somalia to inform evidence-based interventions. It assesses the scale and prevalence of IUU fishing, identifies primary drivers, evaluates environmental, economic, and social impacts, and identifies knowledge gaps in existing literature on IUU fishing in Somalia. Therefore, the study investigates the following research questions.

What is the reported prevalence and scale of IUU fishing in Somali waters? (1) What are the primary drivers of IUU fishing in Somalia? (2) What are the environmental, economic, and social impacts of IUU fishing on Somalia? (3) What are the key knowledge gaps in the existing literature regarding IUU fishing in Somalia?

RESULTS AND DISCUSSIONS

IUU fishing: Threat to fisheries: Somalia's case

IUU fishing is one of the most persistent challenges to sustainable fisheries governance, threatening ecological integrity, economic viability, and social stability in coastal nations worldwide (UNODC, 2019; UNODC, 2020). In Somalia, the problem is magnified by decades of political fragility, weak maritime governance, and contested jurisdictional boundaries, all of which have created an enabling environment for large-scale exploitation of marine resources by both foreign and domestic actors (Bahadur, 2012). With 3800 km of coastline—the longest on mainland Africa—the country's exclusive economic zone (EEZ) encompasses some of the most productive fishing grounds in the Western Indian Ocean, making it a prime target for distant-water fleets, many of which operate without authorization or in violation of fishing regulations (Secure Fisheries, 2015; FAO, 2015).

Somalia's IUU fishing: Past and present

Due to the lack of efficient maritime governance and enforcement systems following the fall of the central government in 1991, Somalia's territorial seas became open to exploitation, making IUU fishing a recurring problem in the country (FAO, 2015; Bahadur, 2012). Foreign industrial fleets, frequently operating under flags of convenience, started entering Somali waters without permission due to the lack of a functioning coast guard and regulatory framework. These fleets targeted profitable species such as sharks, swordfish, tuna, and various demersal fish. Numerous incursions were already noted in early reports from the 1990s, with some vessels allegedly participating in damaging fishing methods, such as encroaching into artisanal fishing zones and using prohibited gear types (FAO, 2015). Because of the 3800 km of coastline in Somalia and its strategic placement along important migratory routes, this unregulated harvesting has not only continued but, in many cases, increased over the following decades (Glaser *et al.*, 2020; Secure Fisheries, 2015). Recent studies show that the scope of illegal activity is still substantial into the 2020s, despite intermittent interventions and the gradual re-establishment of Somali maritime institutions. This activity continues to deplete fish stocks, undermine local livelihoods, and present major obstacles to marine conservation and sustainable fisheries management.

Geographic hotspots of IUU activities

According to Ehiane & Uwzeyimana (2023), Bruwer (2021), Puntland and Galmudug regions of Somalia are the main locations where IUU fishing occurs. These regions have long drawn both local and foreign fishing interests because they are located along upwelling zones that are rich in biodiversity and important migratory routes for species that are useful for commerce. More than half of documented fisheries conflict

occurrences took place in Puntland's waters (Glaser *et al.*, 2020). These events often involved big foreign industrial trawlers working near the shore and, in certain cases, within areas customarily designated for artisanal fishermen. These intrusions frequently result in the loss of fishing gear, fewer possibilities for local communities to catch fish, and increased hostilities between the small-scale and industrial fishing industries. In addition to their high biological productivity and abundance of high-value species, these areas are attractive to illegal operators because of ongoing gaps in maritime surveillance, insufficient patrol capacity, and disjointed enforcement mechanisms, all of which contribute to a climate that is conducive to repeated infractions (Glaser *et al.*, 2019).

IUU fishing surveillance

Determining the scope of IUU fishing in Somalia requires a multi-methodological approach, integrating on-the-ground observations with advanced technological and remote sensing capabilities. According to FAO (2015), satellite monitoring offers extensive spatial coverage that can identify the presence of vessels in Somali waters, especially in offshore areas that are out of local law enforcement's direct reach. Secure Fisheries (2015) uses automatic identification system (AIS) vessel tracking, which compares declared vessel activity with observed trajectories to identify vessel movements, fishing patterns, and possible incursions. However, AIS deactivation or "spoofing" by illicit operators can compromise the efficacy of AIS vessel tracking. Field-based ecological studies, such as Ahmed (2023), provide fine-scale information on changes in the species composition, habitat degradation, and abundance of fish stocks. These surveys frequently support patterns inferred from remote data. Furthermore, Glaser *et al.* (2020) have created conflict event databases that record reported occurrences involving artisanal fishermen and industrial fleets. These databases function as socioeconomic indicators of the intensity of IUU in particular regions. The reliability and validity of prevalence estimates are increased by the triangulation of these several data sources, each of which has unique advantages and disadvantages. Adaptive and multi-method monitoring frameworks are necessary for more accurate evaluation; nevertheless, because of ongoing issues such as jurisdictional constraints in contested marine zones and high seas, the clandestine character of many activities, and insufficient reporting.

The scale and scope of IUU fishing

According to Secure Fisheries (2015), Somalia's EEZ is home to over 200 foreign industrial vessels that operate there each year without an official license. This constitutes a substantial and ongoing infringement on Somalia's maritime territory. Similar numbers were reported by the FAO (2015), which also pointed out that a significant percentage of these vessels fish in the 24-nautical-mile inshore zone, which is legally designated for artisanal fishermen and where industrial operations are expressly forbidden by Somali fisheries regulations. Such infractions damage national fisheries management regimes' efficacy in addition to undermining the rights and means of subsistence of nearby fishing communities. According to Glaser *et al.* (2020), unlicensed fishing is the leading cause of maritime disputes in Somalia, accounting for 57% of all documented fisheries conflict incidents. This data further demonstrates the scope and significance of these activities. All of these results demonstrate how pervasive illegal industrial fishing is in Somali waters and how it plays a major part in resource degradation and socioeconomic conflicts along the coast.

Primary drivers of IUU fishing in Somalia

Governance and legal weaknesses

The idea that Somalia's ongoing governance deficiencies are the main cause of IUU fishing is a recurrent subject in the literature (Lomeri *et al.*, 2025). With overlapping and perhaps conflicting mandates between federal and state authorities, the nation's long-standing political instability has led to fractured institutional capability. Illegal operators can now operate with relative impunity in legal grey areas produced by jurisdictional inconsistencies in maritime borders, both within Federal Member States and between Somalia and its neighbors (Bahadur, 2012).

Weak domestic legislation that frequently lacks clear enforcement measures, deterrent penalties, or the administrative infrastructure required to handle infractions effectively exacerbates these governance issues. In addition, Somalia's limited domestic adoption and ratification of international fisheries management instruments, such as the FAO Port State Measures Agreement or key regional fisheries management organization (RFMO) protocols, limits its capacity to engage in international collaboration in MCS and transboundary criminal prosecution. In addition to having few operational resources for marine enforcement, this institutional weakness has solidified a lax atmosphere that allows IUU fishing to continue largely unchallenged.

Corruption and state capture

Corruption leads to the severe manipulation of resources (Mudey *et al.*, 2025; Awale & Kulmie, 2024). This is especially true for natural resources, where it diverts their value away from public benefit and toward private gain. Glaser *et al.* (2019) and Ruhul and Abdulahi (2024) have identified state capture and corruption as key facilitators of illicit fishing in Somalia's waterways. To get beyond formal licensing procedures and regulatory monitoring, multinational fishing corporations have been known to directly bribe government officials or intermediaries to gain access to Somali fisheries resources. In addition to making illegal industrial fishing easier, such actions damage the legitimacy and reputation of government agencies in charge of overseeing maritime resources. State capture by vested political or financial interests can institutionalize non-compliance in settings where institutional monitoring is already lacking, preventing IUU operators from facing a significant danger of identification or punishment. These dynamic feeds a vicious cycle whereby illicit operations become more commonplace, money that could be used to fund fisheries management is taken into private hands, and enforcement organizations are further denied the tools they require to function efficiently. Corruption within licensing and monitoring systems gradually erodes the rule of law and seriously jeopardizes Somalia's capacity to exercise sovereign authority over its EEZ.

Economic incentives and coastal livelihood pressures

One of the main internal drivers of IUU fishing in Somalia is the economic vulnerability of artisanal fishing communities. For Somali artisanal fishermen, IUU fishing activities, mostly by unlicensed foreign industrial fleets, cause yearly economic losses of about USD 300 million. This amount includes both the direct loss of possible catch and more general effects on market access. Local fishermen must invest more time and resources to ensure viable catches as a result of industrial encroachment depleting nearshore fish populations, which reduces household earnings and food security. As a result, some artisanal fishermen are encouraged to use informal or outright illegal fishing methods, such as pursuing prohibited species or working outside of authorized zones, to make a living. When legitimate livelihoods fail, fishermen turn to the more profitable, albeit illegal, activities of hijacking and ransom-seeking, which is another historical narrative that links participation in maritime piracy to extreme economic circumstances (Farquhar, 2017) Because of the socioeconomic conditions created by poverty, resource scarcity, and poor governance, IUU fishing is both a symptom and a contributing factor to the ongoing instability in Somalia's coastal areas.

National, regional, and international enforcement gaps

A major factor in the continuation of cross-border IUU fishing operations is the lack of coordination between Somalia and its neighbors. According to UNODC (2020) and Shortland (2019), IUU vessels can take advantage of jurisdictional discontinuities by moving between national EEZs in order to avoid detection, boarding, or prosecution because there are no standardized MCS frameworks throughout the Western Indian Ocean. For operators who turn off tracking devices or change vessel identity to hide their travels, this "jurisdiction hopping" works very well. Regional enforcement capacity is still unequal. While some coastal states, such as Somalia, have relatively sophisticated patrol and port inspection regimes, others have long-standing shortages of maritime resources,

skilled labor, and legal enforcement tools. Globally, inconsistencies in ratifying international treaties such as the FAO Port State Measures Agreement, the lack of legally obligatory regional fisheries management measures for certain species, and information sharing gaps all work against coordinated efforts to combat IUU fishing. Consequently, enforcement flaws at many levels of governance come together to produce a lenient operating environment where criminal operators can carry out ongoing operations with little fear of punishment.

Resource attractiveness

According to Ahmed (2023), Somalia's EEZ is one of the most resource-rich maritime regions in the Western Indian Ocean. It is home to a variety of shark species that are valued for their flesh and fins, as well as abundant and commercially valuable fish stocks, including king mackerel, yellowfin, and skipjack tuna. Because of these valuable species' high pricing on global markets, especially in Asia and the Middle East, the Somali seas are a desirable location for both authorized and unapproved industrial fleets. This problem is made worse by the EEZ's enormous size (more than 1.2 million km²) and the relative underdevelopment of the domestic fishing sector, which prevents local operators from using most of the resource potential. The potential of overexploitation is also increased by the technological and operational capability difference between well-equipped foreign vessels, often outfitted with cutting-edge equipment, refrigeration systems, and satellite navigation, and the relatively small assets of Somali enforcement agencies. This disparity jeopardizes Somalia's long-term ecological and economic gains by encouraging IUU fishing and undermining sustainable fisheries management initiatives.

Impacts of IUU fishing on Somalia

Environmental degradation and biodiversity loss

In Somali waters, IUU fishing has had serious ecological repercussions that jeopardize ecosystem stability and marine biodiversity. According to Ahmed (2023), overexploitation by illegal foreign industrial vessels is mostly to blame for the notable drops in populations of important commercial species, such as sharks, mackerel, and tuna. In addition to altering the dynamics of the food web, the removal of significant numbers of these species lowers fish stocks' potential for reproduction, which hinders their ability to rebound. In addition, benthic habitats and coral reef systems have suffered physical harm as a result of destructive fishing methods such as bottom trawling and the employment of non-selective gear. As vital breeding and nidification grounds for many marine species, these habitats' decline has a domino impact on the ecosystem as a whole. Ecosystem resilience is weakened by the loss of species richness and habitat complexity, which increases the susceptibility of Somali maritime habitats to other stresses such as coastal pollution and climate change. The long-term viability of Somali fisheries and the ecological integrity of Somali waters are ultimately threatened by the ongoing environmental damage brought on by IUU fishing.

Economic losses to artisanal fishers

The artisanal fishing industry in Somalia has suffered a significant and multifaceted financial loss. According to direct rivalry from industrial IUU vessels, diminishing fish stocks, and dwindling market opportunities are the main causes of the estimated \$300 million in losses that occur each year. In addition to lowering the amount of catch that small-scale fishermen may obtain, industrial-scale illegal fishing also lowers the market value of their products by manipulating prices and causing oversupply. These economic pressures lower household incomes, undermine the viability of small fishing enterprises, and add to poverty levels in already vulnerable coastal communities by forcing artisanal fishermen to travel farther offshore, incurring higher fuel costs and spending more time at sea, which increases operational expenses and safety risks. The knock-on effects extend to local fish processing, marketing, and related value chain activities, further limiting economic growth and decreasing household food security throughout Somalia's maritime region.

Social consequences and maritime security linkages

The relationship between IUU fishing and other forms of maritime insecurity, such as piracy, armed conflict, and organized maritime crime, has been highlighted in a number of studies. Glaser *et al.* (2024) argue that the depletion of fish stocks and the economic marginalization of artisanal fishermen brought about by industrial IUU activity can destabilize coastal economies, creating conditions that are favorable to piracy and illicit maritime activity. This view is bolstered by historical patterns in Somalia, where the rise of piracy occurred in the mid-2000s, but other researchers, such as Jespersen & Henriksen (2022), warn against oversimplifying this causal relationship, pointing out that piracy is not just a result of fishing pressures but rather a complex interplay of governance failures, economic incentives, and security gaps. Notwithstanding these arguments, it is generally agreed that ongoing IUU fishing undermines public confidence in governance systems, increases coastal communities' sense of marginalization, and feeds complaints against both foreign and domestic actors (Farquhar, 2017; Mwangura, 2010). If these complaints are not addressed, they can turn into social unrest, erode social cohesiveness, and increase the vulnerability of communities to armed group recruitment. In addition, competition for diminishing marine resources has, in certain situations, heightened intercommunal conflicts and weakened political stability.

Linkages to broader maritime crime

In Somalia, IUU fishing is not a singular occurrence; rather, it is often linked to other illicit marine activities such as arms trafficking, toxic waste dumping, and organized smuggling networks. Because of these connections, criminal economies become mutually reinforcing, with the revenues from one illegal activity supporting and growing others. This makes enforcement more difficult and compromises marine security. Toxic waste and uncontrolled fishing have serious negative effects on the environment, hastening habitat loss, biodiversity loss, and long-term ecosystem decline. Its persistence is fueled by weak institutional capacity, entrenched corruption, fragmented jurisdictional authority, and significant MCS gaps. The reviewed literature consistently portrays IUU fishing in Somalia as widespread, multi-causal, and deeply destructive, not only to marine ecosystems but also to local economies, social stability, and governance structures. Addressing these issues calls for a multifaceted, integrated strategy (UNODC, 2020). This should entail: introducing strong anti-corruption frameworks; implementing governance and legal reforms to close enforcement gaps; offering coastal communities sustainable and alternative livelihood opportunities; boosting regional and international cooperation to disrupt transnational criminal networks operating in Somalia's maritime domain; and strengthening MCS capacity through training and technology.

CONCLUSION AND RECOMMENDATION

In Somalia, one of the most urgent issues threatening the viability of the nation's economy, governance structures, and marine resources is IUU fishing. The evaluation emphasizes how Somalia's extensive coastline and resource-rich EEZ have drawn international industrial fleets, many of which operate illegally or in contravention of Somali fisheries regulations. Large-scale exploitation of Somali waterways has been made possible by decades of poor governance, disjointed institutions, and a lack of enforcement capabilities, costing the nation an estimated USD 300–450 million a year. In terms of the environment, damaging methods such as bottom trawling have harmed delicate coral and benthic habitats, while illegal fishing has reduced important commercial species such as sharks, mackerel, and tuna. Economically speaking, industrial fleets directly compete with artisanal fishermen, lowering the availability of catch, driving up prices, and decreasing market value. In coastal communities, these factors make poverty and food insecurity worse. Persistent IUU fishing has traditionally fueled piracy and other marine crimes, undermined public confidence in governance institutions, and fed grievances. Corruption, inadequate implementation of international enforcement tools, and overlapping governance flaws are the main causes of IUU fishing's continued

existence in Somalia. The Western Indian Ocean's jurisdictional gaps and limited MCS capability further allow international operators to operate without consequence. The assessment also emphasizes how IUU fishing exacerbates environmental degradation and instability by being linked to more extensive illegal maritime operations, such as waste dumping and arms trafficking. Therefore, combating IUU fishing in Somalia necessitates a multipronged strategy that includes investment in surveillance capabilities, anti-corruption initiatives, institutional reform, and regional cooperation. Ensuring compliance, resilience, and long-term food security requires both enhancing community involvement and establishing sustainable livelihoods for artisanal fishermen. In the absence of prompt and concerted action, IUU fishing would keep depleting Somalia's natural resources and sustaining cycles of instability in the marine sector.

The study recommends several key recommendations for improving fisheries governance in Somalia. These include ratifying and enforcing international agreements, fostering collaboration among Somali maritime stakeholders, investing in patrol boats, strengthening satellite surveillance, and enhancing data-sharing platforms. It also suggests fighting corruption through independent oversight procedures, digital revenue collection, and transparent licensing. Empowering coastal communities through training, microfinance, and alternative income sources can reduce reliance on illicit activities. Promoting regional collaboration with Indian Ocean governments and RFMOs can address jurisdictional loopholes and disrupt cross-border IUU networks. In addition, collaborating with academic institutions and non-governmental organizations can enhance research and monitoring, addressing socioeconomic studies, ecological surveys, and stock evaluations.

AUTHOR CONTRIBUTIONS

Both Nor Daud Ibrahim and Dayah Abdi Kulmie collaborated on the conceptualization, methodology, validation, formal analysis, investigation, data curation, review and editing, visualization, supervision of Dayah Abdi Kulmie, and project management. Each author made an equal contribution to this work, and they have both read and approved the manuscript's final draft.

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DATA AVAILABILITY

Since no new data were generated or examined for this paper, data sharing is not applicable. The manuscript properly cites all previously published data and literature, which form the basis of this investigation.

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CONFLICTS OF INTEREST

The authors in this review declare that there is no conflict of interest.

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