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Fisheries in Somali waters: Reconstruction of domestic and foreign catches for 1950–2015

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ABSTRACT

The Somali region, at the Horn of Africa, has experienced a high degree of political and social instability at various times since 1950, through various regimes and an extended period of a lack of national government institutions during civil war. This study documents and extends prior reconstructions of domestic and foreign fisheries catch data for Somali waters between 1950 and 2015, including the industrial, artisanal, and subsistence sectors. Reconstructed domestic catch was nearly 1.8 times the landings reported by the Food and Agriculture Organization (FAO) on behalf of Somalia for the time period, and most of this discrepancy was attributed to the reconstructed small-scale sector (artisanal plus subsistence). The substantial removals by foreign fisheries dwarf domestic catches, and they were estimated here as 1.3 times the reconstructed domestic catches. This article provides an updated estimate of foreign and domestic fisheries removals from Somali waters from 1950 to 2015 to establish a historical baseline for fisheries catch statistics. This baseline could be used to update national-level fish landings data reported to the FAO, and such an update would be a useful starting point for improving quantitative treatments, such as stock assessments, of fisheries in Somali waters.

1. Introduction

The Somali Exclusive Economic Zone (EEZ) is a productive upwelling ecosystem in the north-western Indian Ocean (Fig. 1) that supports many fish and invertebrate species of interest to fisheries. However, due to a lack of governance (especially in past decades) and the decentralized, underdeveloped economy, Somali waters have been subject to incursions by illegal or unauthorized fishing vessels, joint ventures, and licensing schemes that left little benefit for Somalis. While the Somali people historically have depended largely on terrestrial resources for food [1], this was beginning to change through government interventions [2–4].

Somalia declared a 200 nm *territorial* sea in 1971, but this declaration did not follow accepted international law [5]. Even though Somalia ratified the United Nations Convention on the Law of the Sea (UNCLOS) in 1989, their EEZ was not formally declared until the Somali federal government did so in 2014. Here, for the purposes of this study, it includes the waters off the coasts of the semi-independent areas Puntland and Somaliland in Somalia's EEZ.

Somalia's Siad Barre government took power in 1969 through a coup d'état and was in power until the national government fell in 1991. From this period until 2012, Somalia did not have an internationally recognized central government. In 2012, a Federal Government of Somalia was re-established following several transitional governments in part organized by the international community. Herein, we refer to this new state as the national government in contrast to the Siad Barre government.

The lack of government enforcement and legal ambiguity of Somali waters has facilitated foreign incursions for many decades [6]. Many have argued that piracy in Somalia developed in response to illegal fishing in the EEZ [7,8]. Regardless of motivation, the existence and levels of piracy has had the effect of driving away some foreign fishers who considered the waters too dangerous [9]. In the mid-2000s, international military forces (e.g., from the North Atlantic Treaty Organization) began a concerted effort to reduce piracy in the region. Patrols by these fleets made waters safer, and large commercial vessels adopted defensive tactics (adjusted travel routes, armed guards, etc.) which halted or at least reduced piracy for a time. That success appears to have allowed foreign fishing to increase again in Somali waters [10]. As fisheries have become more important to the region [11], it is vital to

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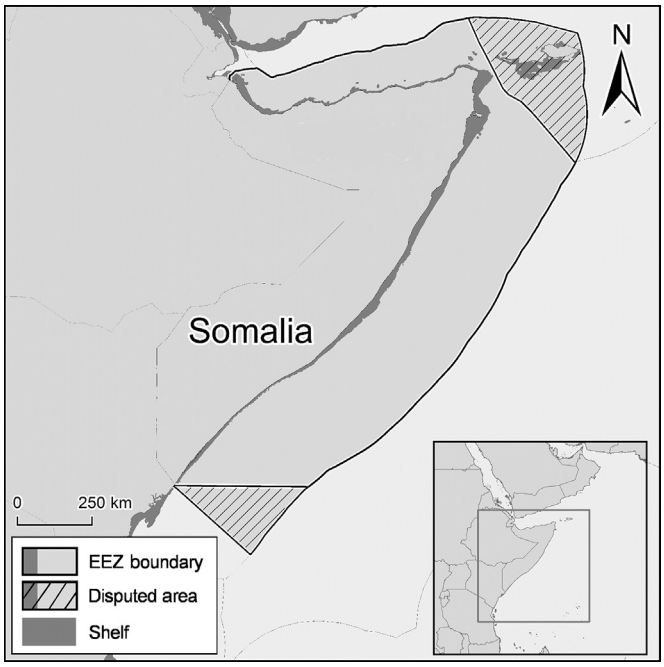

Fig. 1. The Somali Exclusive Economic Zone (EEZ), and shelf waters to 200 m depth.

understand the historical baseline of domestic and foreign fisheries in Somalia. Such a baseline provides a more comprehensive understanding and documentation of the levels of historical catches taken by both domestic as well as foreign fleets from Somali waters. This can contribute to a better understanding of the choices and potential benefits, as well as economic, social and environmental trade-offs being faced by Somali policymakers as it moves forward with controlling resource access in its waters. Baselines such as the one suggested here provide industry-independent and thus likely less biased data and knowledge on which better-informed policy decisions can be made.

1.1. Small-scale fisheries

The domestic fisheries of Somalia have always been fairly small-scale in nature. Development programs for small-scale fisheries and the formation of fishing co-operatives were instituted during the Siad Barre era (1969–1991), and were supported by the former Soviet Union and other countries through foreign aid. However, the desired growth of the sector failed to materialize. Marketing of fish from co-operatives was centralized during the 1970s and early 1980s, diminishing incentives for increased production [12]. Fishing activities increased when the Siad Barre government started to liberalize the sector during the 1980s [13].

After the collapse of the central Siad Barre government in 1991, and during the ensuing civil war, the already existing shortage of spare parts and infrastructure was amplified and much of the existing small-scale fishing sector was reduced [4]. Small-scale fishers also suffered from the cessation of government support [14] and their catches declined in the early 1990s [6]. However, later in the 1990s, the absence of government control of the fishing industry resulted in increased influence of the private sector and entrepreneurs which was the main force behind the gradual revival of the fishing trade [14]. Since 2000, investment from the private sector together with foreign aid, and also the change in consumption habits of Somalis, seem to have resulted in an expansion of the small-scale fisheries sector and substantially increased small-scale catches in the post-war period beginning in 1996 [2–4]. Small-scale fisheries have also been affected by anti-piracy actions that sometimes mistook small-scale fishers for pirates [15].

1.2. Industrial fisheries

Somalia has never had a large domestic industrial fishing fleet, and most of the industrial fishing in Somali waters has largely been carried out by foreign fleets, for many years through so-called ‘joint ventures’. These joint ventures and foreign licenses have been used by Italy, Japan, Greece, Singapore, Egypt, the former USSR, and China, among others. These agreements were most common between 1974, when the former USSR’s joint venture of SOMALFISH started, and 1991 when the agreements generally collapsed with the fall of the Siad Barre government. From 1950 to 1991, Somalia's EEZ was host to at least 60 different trawlers from at least 14 different joint venture operations [summarized in 10,16].

When the Siad Barre government collapsed in 1991, Somali waters were left unmonitored and unguarded, and fishing vessels from various countries exploited this lack of oversight [1,4,5,17–21], generally in flagrant disregard of flag-state responsibility by these countries [Section 4 in 22]. This unauthorized and illegal exploitation by foreign vessels has been proposed as a major reason for the initial rise of piracy in the waters of Somalia [23]. It is argued that local fishers who were deprived of their livelihoods, and the warlords who saw an opportunity to make money, formed so-called ‘coast guards’ to enforce the waters of their perceived territories. These coast guards attacked foreign fishing vessels and demanded compensation for fish caught. Local warlords also started to sell licenses for fishing [18,24], thus creating unauthorized or informal licensing schemes for foreign vessels. Additionally, one could argue that it was the plundering of Somali fish stocks by illegal foreign vessels that should be considered the initial acts of piracy [25].

1.3. Lack of reliable data

While there are many reports of developments in foreign and joint-venture fisheries in Somalia, published catch statistics are sparse and usually restricted to three taxonomic groups. Thus, the absence of workable government institutions since the late 1980s has prolonged and exacerbated the problem of unreliable data [1]. In line with the general practise by the Food and Agriculture Organization of the United Nations (FAO), the internationally reported catch data for Somalia was estimated by FAO from 1991 to 2015 [26], although the methods and assumptions used for this estimation are not documented.

The existing national fisheries statistics from the 1970s and the 1980s are thought to be incomplete. For example, the category ‘production from all sectors’ in 1985, as reported by the Somali government [27], was based solely on catches by the 23 co-operatives and resettlements, the offshore catches, and the purchases by companies from small-scale artisanal fishers. The reported production from the co-operatives and resettlements was deemed to represent the artisanal (i.e., small-scale, commercial) production and was reported as 6223 t in 1985. This is thought to be an underestimate, since it excluded data from fishing villages along the coast that were not part of a co-operative. For example, Jennings [28] reported 31 fishing communities, while Mohamed and Herzi [4] suggested that before the civil war there were about 50 fishing villages.

To aid the establishment of comprehensive historical catch data baselines that address unreported fisheries components, the reconstruction method of Zeller, Palomares [29], first applied in Zeller, Booth [30], has now been applied to reconstruct fisheries catches for all countries in the world [31,32]. Catch reconstructions improve the completeness of fisheries statistics by accounting for under-represented and ignored sectors (e.g., subsistence fisheries), practices (e.g., discards), and illegal fisheries. This is particularly important for the Somali region that lacks data from large parts of unregulated and illegal foreign fisheries [10].[1] Earlier studies reconstructed the domestic [16] and

[1] We consider the widely used term “Illegal, Unreported, and Unregulated (IUU)” as

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