

# Octopus fisheries of Morocco, Mauritania and Senegal

Global octopus catches have been steadily increasing, with reported figures more than doubling from 179,042 tonnes in 1980 to 497,000 tonnes in 2021. Actual catches are likely much higher due to suspected significant under-reporting. Morocco, Mauritania and Senegal - the focal countries of the [West Africa Keystone project](#) - support important octopus fisheries that play a vital role in local economies. However, these fisheries face critical sustainability challenges including overexploitation, use of destructive trawling gear, weaknesses in monitoring control and surveillance, and illegal, unreported, and unregulated (IUU) fishing. This brief explores the complexities of these fisheries, examining current challenges and exploring existing and proposed management practices aimed at ensuring their long-term sustainability.

## Introduction

Octopus fisheries play an important role in the global seafood market but face growing challenges. In 2021, reported catches exceeded 497,000 tonnes; with actual total landings likely much higher due to significant underreporting (estimated at 16% in 2019) [1]. The past decade has seen steady declines in landings [2], raising concerns about supply sustainability amid high prices and growing demand. Globally, the industry is concentrated among a few key players. South Korea, Spain, Italy, and Japan lead imports, while Vietnam, China, Morocco, Mexico, and Mauritania dominate production [1]. Spain, Japan and Italy are the main importers of octopus specifically caught in the waters off Mauritania, Morocco and Senegal [3].

The northwest African coast, particularly along Morocco, Mauritania and Senegal, benefits from year-round upwelling, which provides a steady inflow of nutrient-rich waters to the region [4]. These conditions, together with diverse substrates, make the area highly suitable for octopus (*Octopus vulgaris*) populations. Fisheries targeting octopus have grown substantially since the late 1900s and now represent a significant proportion of global catch volumes. The region, which is part of FAO area 34, encompasses three recognised "stocks": the Dakhla stock (26–21°N), Cap Blanc stock (21–16°N), and Senegal-Gambia stock (16–12°N) [4]. Virtually all catches made in the area are exported [1]. The FAO considers the Cap Blanc and Dakhla stocks as overexploited, and the Senegal-Gambia stock to be as fully exploited [4].

## *Octopus vulgaris*

*Octopus vulgaris*, the common octopus, is a benthic cephalopod species found on rocky, sandy, and muddy bottoms distributed between the coastline and the continental shelf from the United Kingdom to South Africa. The common octopus is characterized by a short lifespan, quick maturation, high fecundity and rapid growth rate, which makes the species less sensitive to fishing pressure. However, many of the fishing grounds for *O. vulgaris* have a history of over-exploitation and mismanagement [8].



Young *Octopus vulgaris* among rocks.

High fishing pressure has pushed octopus stocks into deeper waters, a trend further intensified by rising sea water temperatures driven by climate change [3]. Accurate stock assessments are hindered by rapid expansion of fishing operations, high variability in octopus recruitment, and a lack of reliable data [5][6]. These factors make setting and allocating sustainable quotas and effective resource management particularly challenging [7][8][9].

Competition between industrial and artisanal sectors further complicates the situation, creating conflicts over market access, quota allocations, and fishing grounds [5][10][11]. Historically, foreign-flagged vessels have dominated industrial fleets, raising concerns about the equitable distribution of economic benefits [12].

While governments have taken steps to "domesticate" these fleets [13], ownership structures often remain unchanged, with economic benefits still largely accruing to foreign entities [5][14][15].

The region also grapples with a high risk of IUU fishing [16][17]. Foreign vessels sometimes bypass Mauritania's landing requirements by, for instance, transshipping catches, making it difficult to enforce both local and international fisheries laws [10][13]. Though largely anecdotal, these reports heighten concerns about overfishing and illicit practices in the region. These challenges are exacerbated by limited capacity and resources for effective governance, including difficulties in monitoring, control, and surveillance [18].

Table 1: West Africa octopus fisheries at a glance

	Mauritania	Morocco	Senegal
<i>Share of global exports (2019-2021) [1]</i>	15%	16%	2%
<i>Main trade partner(s) (% of export, in volume) [1]</i>	Spain 50%; Japan 29%	Spain 49%; Italy 28%	Italy 47%; Spain 32%
<i>Stock status [4]</i>	Overexploited	Overexploited	Fully exploited
<i>Systematic monitoring [4]</i>	Yes	Yes	No
<i>Share of industrial operations [1]</i>	43% <sup>2</sup>	77% <sup>3</sup>	78%
<i>Share of artisanal operations [1]</i>	55%	23%	22%
<i>Total catches, 2019-2021 average (thousand tonnes) [1]</i>	35.9	52.6	6.1

## Mauritania

Mauritania's octopus fishery was initiated in the 1970s by a Japanese company in response to growing Japanese market demand (see timeline below) [10]. Historically dominated by foreign companies operating industrial trawlers [4], the sector underwent a major shift in 2012 when the Mauritanian government banned foreign-flagged vessels from fishing octopus in its waters [19]. This led to the exclusion of octopus from the Sustainable Fisheries Partnership Agreement (SFPA) between the EU and Mauritania, which had previously included access to this fishery [20]. Despite efforts to domesticate the fishery, it currently includes a fleet of approximately 50 Chinese-flagged fishing vessels [3].

In recent years, Mauritania has prioritized the expansion of its artisanal fishing sector [21] (see graph below). For

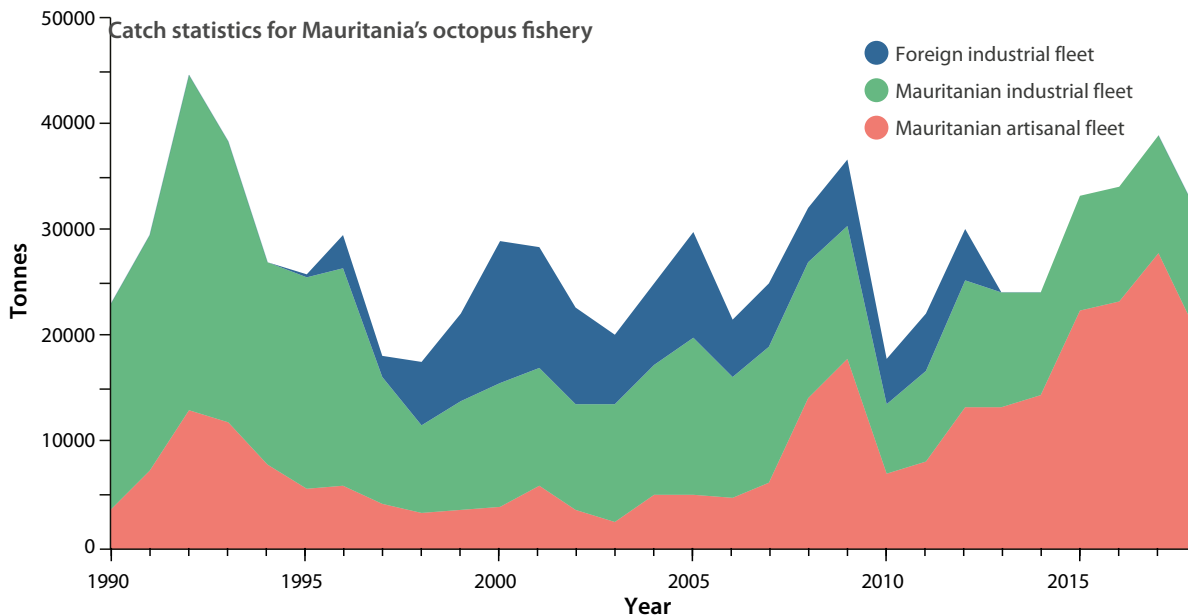
example, in 2023, the government opened the fishery 10 days earlier for artisanal fleets than for industrial fleets [22]. Official statistics report approximately 4,700 pirogues and 65,000 fishers actively engaged in the sector [23]. When considering the entire supply chain, it is estimated that around 240,000 individuals depend on this industry for their livelihoods.

Despite efforts to regulate the fishery more effectively (see box "Management mechanisms in Mauritania"), local authorities continue to face challenges in monitoring and enforcing compliance. Reports of violations, such as exceeding Total Allowable Catch (TAC) limits, disregarding closed seasons, and breaching landing requirements underscore these difficulties [24]. Current overexploitation may be partly attributed to

<sup>1</sup> Reflagging of vessels to the country whose waters they fish in.

<sup>2</sup> Mauritanian legislation recognises three fleet segments: artisanal, industrial and coastal (see section "Mauritania").

<sup>3</sup> Moroccan legislation recognises three fleet segments: artisanal, offshore and inshore (see section "Morocco").



the shift from effort-based to TAC-based regulation, which is harder to enforce than the previous effort-based regulation [3]. This is especially true for the artisanal segment, where the group quota has led to a race to fish. To address sustainability concerns, a fishery improvement project (FIP) was initiated in 2018. Due to the COVID-19 pandemic, activities were temporarily suspended. Virtual meetings resumed in 2021, leading to the official launch of the project in 2023. This initiative targets all sectors of the octopus fishery, both the

segments using pots and traps and the segment using bottom trawling, with the long-term goal of achieving Marine Stewardship Council (MSC) certification [1].

Although many peer-reviewed journal articles and international reports consider only artisanal and industrial fleets, Mauritanian octopus legislation also distinguishes an additional coastal fleet [21]. The three fishery segments are characterized as follows:

## Management mechanisms in Mauritania

### § Total Allowable Catch (TAC)

- Cannot exceed Maximum Sustainable Yield (MSY) [19].
- Set annually [19].
- TAC for 2024: 30,744 tonnes [21].
- Fishing stops once TAC is reached [19].

### § Quotas and licenses

- Quotas distributed among artisanal, coastal and industrial fleets [21].
- Industrial and coastal fishing vessels must hold a fishing license and an individual fishing authorisation ("concession") issued by the MPEM specifying, for example, vessel identification, gear, individual quota allocation, bycatch quota and conservation measures [21][19].
- The artisanal fleet operates under a shared quota; total catch is monitored daily to ensure the fleet as a whole does not exceed the quota [21].
- No licenses for foreign trawlers after 2015 [19].
- Licenses not automatically renewable [25].

### § Landing requirements

- All catches must be landed in Mauritanian ports [26].
- Minimum landing weight: 500 g (gutted) [19].

### § Fixed prices

- SMCP sets export prices. Prices can be found on the [SMCP website](#); octopus from trap fisheries tend to be priced higher than trawler-caught octopus [27].

### § Gear restrictions

- Trawlers: 70mm minimum mesh size; banned at depths < 20 m; allowed only in designated areas [19].
- Pots: maximum 1,500 per vessel; 25 sets of 60 each [19].

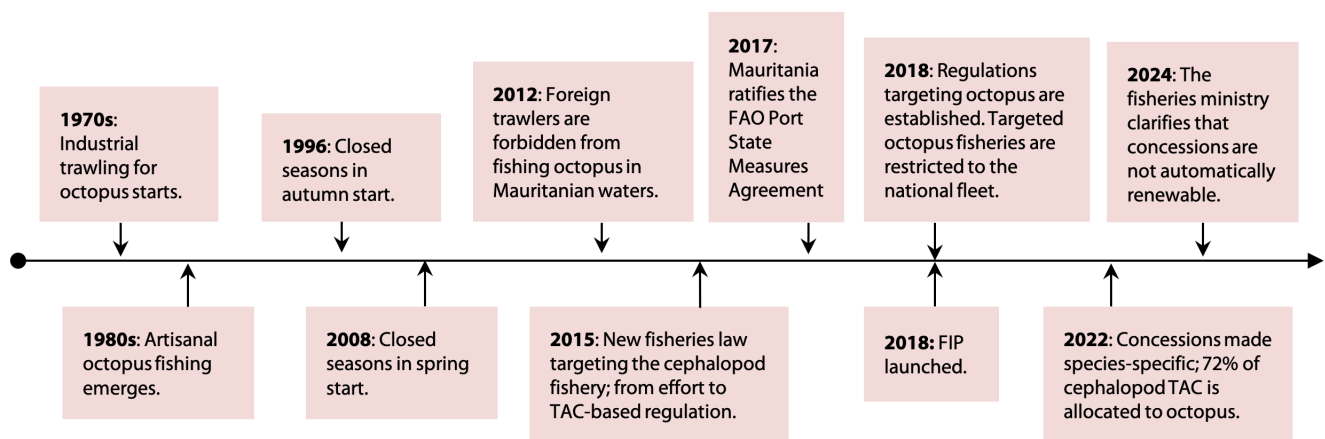
### § Closed seasons

- Two annually, each lasting at least two months [19].
- Historically April-June and October-December [28] [29].
- Extensions based on scientific evidence [19].

### § Closed areas

- Octopus handline (*turlutte*) fishing banned north of Cape Timiris [19].
- Two Marine Protected Areas: Banc d'Arguin National Park and Cap Blanc satellite reserve [4].

- The artisanal fleet [3]: non- or semi-motorized vessels less than 14 m in length; uses passive gear such as pots and traps; operates under a shared quota system; monitored by the Mauritanian Institute of Oceanographic and Fisheries Research (IMROP); responsible for the majority of catches.
- The coastal fleet [3]: vessels less than 26 m in length not qualifying as artisanal; uses passive gear such as pots and traps; operates under individually allocated quotas; required to carry VMS and keep fishing logbooks; monitored by IMROP; contributes least to total catches but is growing rapidly; recurring issues with non-compliance during closed seasons.
- The industrial<sup>4</sup> fleet [3]: all other vessels; mainly uses trawling; operates under individually allocated quotas; required to carry VMS and keep fishing logbooks; responsible for almost half of all catches.



Time line for Mauritania's octopus fishery.

## Senegal

The Senegalese octopus fishery, while less economically significant than its Mauritanian and Moroccan counterparts, is still important to the country's fishing industry. Also primarily export-oriented, it mainly supplies European markets<sup>5</sup> [5].

Unlike the more specialized Mauritanian octopus fishery, the Senegalese fishery is largely opportunistic, with fishers targeting octopus as part of a mixed catch when available [30][5]. As a result, catches have fluctuated considerably over time (see graph below) [4]. The governance structure is adaptive [30], with Local Artisanal Fishing Councils (CLPAs) holding decision-making authority since 2015, supported by participatory monitoring systems codified in 2023 (see timeline below) [31]. Both artisanal and industrial vessels are required to adhere to CLPA decisions (see box "Management mechanisms in Senegal"), though there have been reports of regulatory breaches. Inaccuracies in recorded catches further complicate

compliance assessments [5]. Additionally, significant octopus bycatch from the deep-sea shrimp fishery adds to management challenges [30].

The Senegalese octopus fishery lacks systematic monitoring, and the current participatory monitoring system has been criticized as inadequate [31]. This makes it difficult to assess regulatory compliance, monitor IUU fishing, and accurately determine stock status [5]. The octopus management plan includes provisions for establishing regular and systematic stock monitoring, partly in preparation for the implementation of Individual Transferable Quotas (ITQs) [30].

<sup>4</sup> In the Mauritanian octopus legislation, this fleet segment is called "pêche hauturière" or deep-sea fishery [19]. However, most secondary sources describe it as the industrial fleet due to the characteristics of their operations (vessel size, gear etc.) [4].

<sup>5</sup> Due to handling practices that result in a product quality that is considered unsuitable for the more demanding Japanese market.

## Management mechanisms in Senegal

### § Local Artisanal Fishing Councils (CLPAs)

- Core of the co-management system [30].
- Empowered to implement additional measures as needed [30].
- Control 60% of fishing licenses [31].

### § Fishing licenses

- Non-transferable, except when the original vessel is unseaworthy [32].
- Not octopus-specific; includes other cephalopods like squid (“cephalopod fishmongers”) [30].
- Not automatically renewable [32].

### § Landing requirements

- All catches must be landed in Senegalese ports closest to the fishing area [30].
- Minimum landing weight: 350 g (ungutted) or 300 g (gutted) [30].

### § Gear restrictions

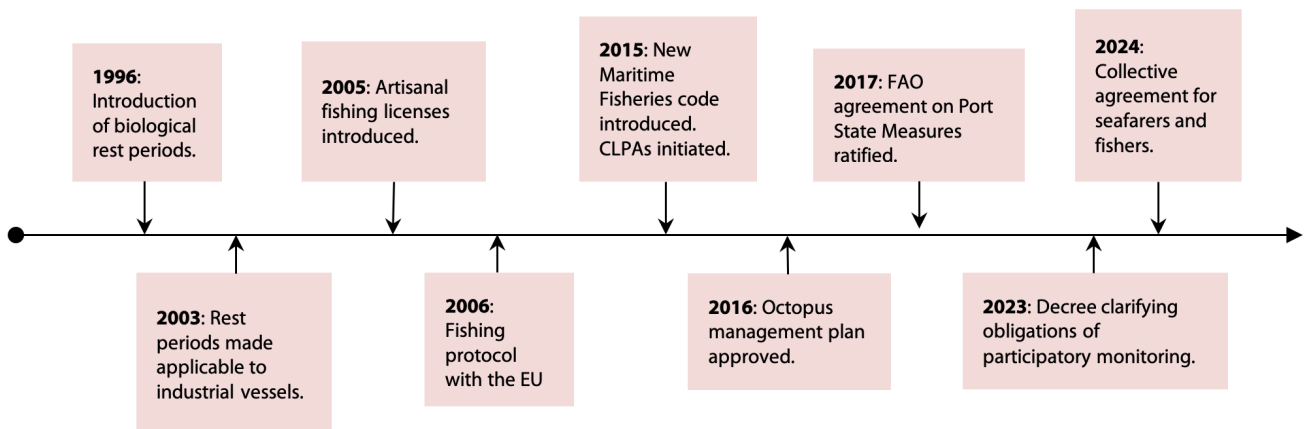
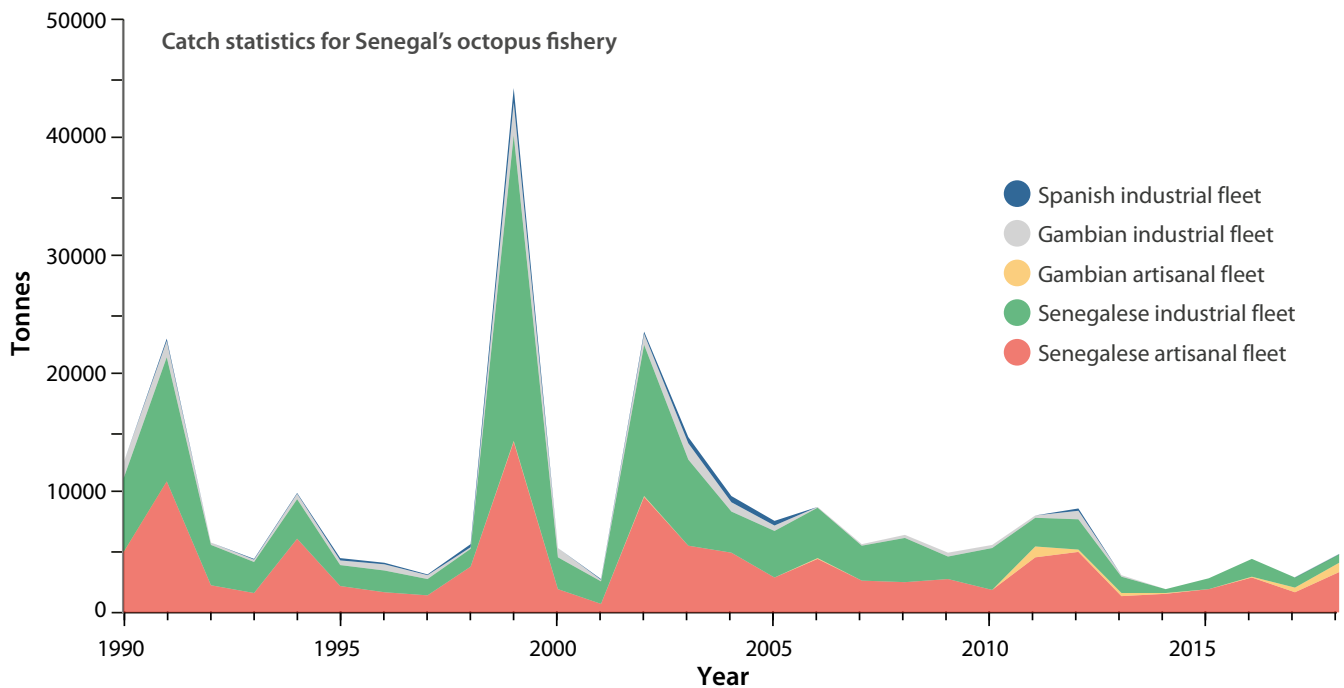
- Trawlers: 70 mm minimum mesh size [30].
- Ban on monofilament and multi-monofilament nets.

### § Biological rest periods

- CLPAs set timing, location and duration based on spawning periods [30].
- All vessels, including industrial, must comply [30].

### § Observer requirements

- All industrial fishing vessels must have a Senegalese observer on board [32].
- Enforced systematically only for foreign vessels [32].



Time line for Mauritania's octopus fishery.

# Morocco

Morocco's octopus fishery began in the 1960s, when foreign offshore fleets, primarily from Spain and Japan, initiated its development (see timeline below). By the 1970s, significant state investments led to the emergence of a national industrial fleet, quickly establishing the fishery as a valuable source of income for the country [33]. An artisanal sector developed later, growing steadily until the late 1990s. The fishery peaked in the early 2000s, and has experienced a downward trend in catches since then (see graph below) [4]. To address sustainability concerns, a FIP was launched in 2019, and a first stakeholder meeting was held in 2020. However, activities were suspended due to the pandemic and have not resumed since [pers. comm.].

The fishery is divided into three segments: offshore, inshore and artisanal, all regulated since 2002 by a TAC system allocated per fleet [4]. Artisanal fishing is restricted to designated areas, while coastal and offshore segments have restrictions on vessel numbers [4]. Other management measures include two annual closed seasons (approximately two months each) and gear regulations (see box "Management mechanisms in Morocco"). Closed seasons and TACs are set each fishing season, with timings, duration and exploitation levels reviewed and adjusted based on stock status. In 2023, for example, the spring season was delayed by over a month, starting July 10 [34]. Despite these measures, catches have been declining since the early 1990s. Reports cite IUU fishing, octopus smuggling and inadequate enforcement as major contributing factors to this decline [35]. In response, the government has implemented longer closures; in 2018, the fishery was closed for 183 days [4].

In February 2024, Moroccan authorities increased the annual octopus quota from 21,000 to 25,200 tonnes, citing industry support as a key factor. On April 1st, they then implemented a temporary pause in octopus fishing due to sustainability concerns [36]. The duration of this pause remains unspecified, though fishing for other cephalopods continues under special authorization [36].

## Management mechanisms in Morocco

### § Total Allowable Catch (TAC)

- TAC allocated by fleet: offshore (63%); coastal (11%); artisanal (26%) [4].
- Individual quotas distributed to vessels within the fleets [4].
- 2024 summer allocation: 9,490 tonnes [37].

### § Fishing licenses

- Issued only to vessels flying the Moroccan flag or operated by legally recognised Moroccan personnel [38].

### § Landing requirements

- Minimum landing weight: 400 g (ungutted) or 300 g (gutted) [39].

### § Gear restrictions

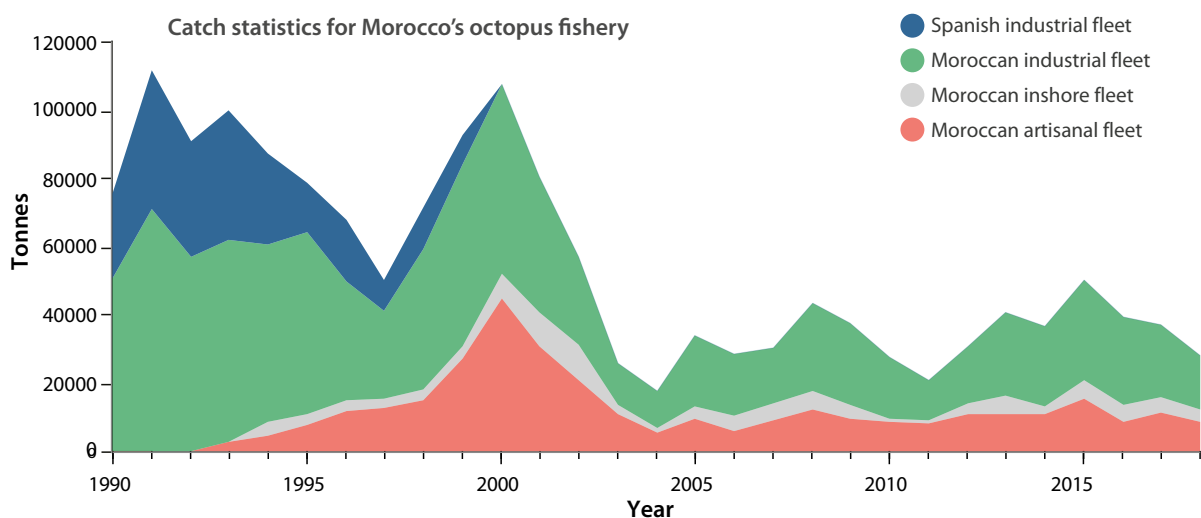
- Trawlers: Spatial regulations apply to nets; bans on large openings; 70 mm minimum mesh size.
- Artisanal: The use of plastic bottles, non-biodegradable pots, cages, and baited baskets is prohibited. [37][40].
- Ban on monofilament net use.

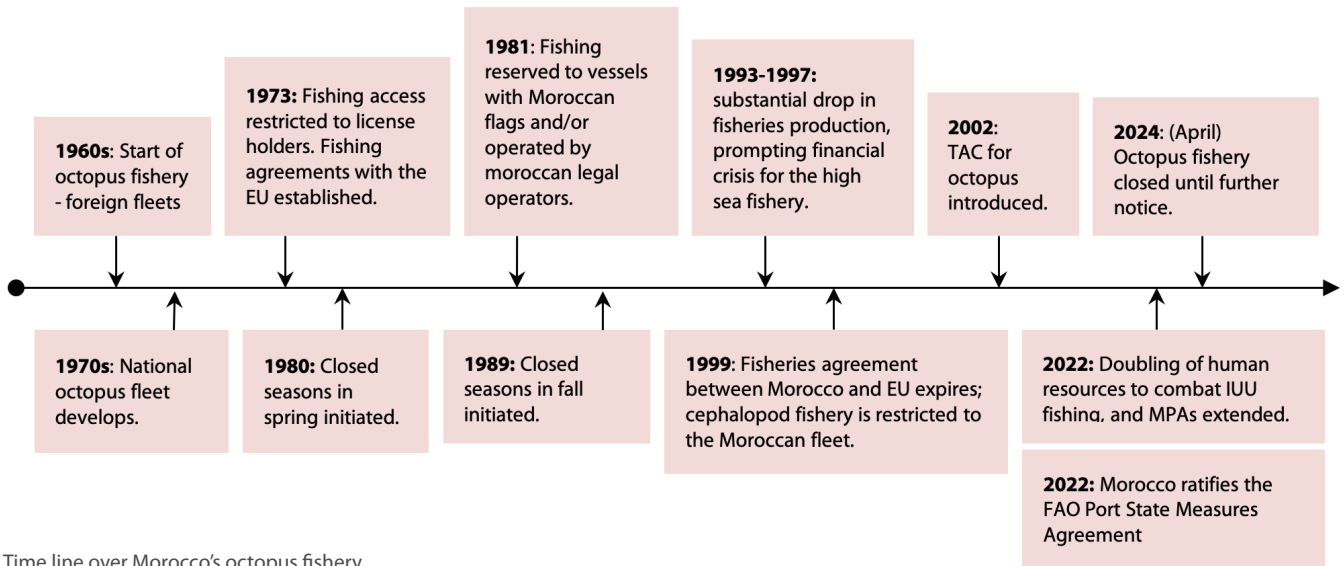
### § Closed seasons

- Two seasonal closures annually (spring and fall), each lasting at least two months. Start and end of each season are adaptable [34].
- Additional closures may be imposed to allow stock recovery [4].

### § Effort distribution

- Industrial fleet limited to operating only between Boujdour (26°N) and Lagouira (20°50'N), at least 10 nm from the coast [4].
- Inshore fleet capped at 150 vessels; max. 10 day fishing trips [4].
- Artisanal fleet restricted to specific fishing sites; only authorized to operate between 3 and 8 miles off the South Atlantic coast[4].





Time line over Morocco's octopus fishery.

## Conclusion

Octopus fisheries in Mauritania, Morocco and Senegal are highly valuable but face significant challenges. Despite relatively developed governance frameworks and management systems, including measures such as TACs, closed seasons, and gear restrictions, octopus stocks remain fully exploited or overexploited. The complex dynamics between the different fishing fleets targeting octopus further complicate management efforts.

Knowledge gaps on stock status and the social-ecological dynamics of the fisheries, especially under

climate change, combined with fishing overcapacity and shortcomings in monitoring, control and surveillance (MCS), present significant challenges to effective long-term management. Weaknesses in enforcement, in part due to limited capacity and resources, exacerbate these concerns, particularly with respect to controlling illegal, unreported, and unregulated (IUU) fishing. However, several initiatives across the region focused on addressing these challenges, including FIPs, and building capacity to strengthen MCS capabilities offer hope for supporting the long-term sustainability of these important fisheries.

*Octopus fisheries across the region operate in dynamic ecological, economic, and regulatory environments. This document was prepared to provide a rapid overview of the industry in September 2024 and should be considered a starting point for understanding these complex fisheries. While every effort has been made to ensure the accuracy of the information at the time of writing, the dynamic nature of these fisheries means information may change quickly. Readers are encouraged to consult the most recent sources and official documents for the most up-to-date and comprehensive information.*

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**Authors:** Tilde Krusberg<sup>1</sup>, Colette Wabnitz<sup>2,3</sup>, Lova Schildt<sup>1</sup>

**Reviewers:** Elizabeth Selig<sup>3</sup>, Robert Blasiak<sup>1</sup>, Henrik Österblom<sup>1,4</sup>, Carmen Gonzalez Valles<sup>5</sup>

**Affiliations:** <sup>1</sup> Stockholm Resilience Centre, Stockholm University, <sup>2</sup> Institute for the Oceans and Fisheries, University of British Columbia, <sup>3</sup> Stanford Center for Ocean Solutions, Stanford University, <sup>4</sup> Anthropocene Lab, The Royal Swedish Academy of Sciences, <sup>5</sup> Sustainable Fisheries Partnership (SFP)

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