

## The Importance of Trawling Method for Fishing

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### Abstract

Trawling is a fishing technique that has gained widespread popularity due to its efficiency in catching large volumes of fish quickly. The method involves trawl nets that are pulled through the water by a boat, catching fish in its path. Trawling is not only a popular fishing method, but it is also a significant source of income and livelihood for millions of people worldwide. The importance of trawling in fishing is immense because it is the most efficient method of fishing that allows fishermen to catch a large number of fish in a small period, resulting in higher productivity and better financial gains. Trawling has reduced the exploitation of overfished species from other fishing techniques and improved the fishing industry's sustainability.

However, there are also concerns about the ecological impacts of trawling, which can lead to overfishing, habitat destruction, and the entanglement of non-target species. To mitigate these environmental concerns, various steps have been taken to regulate trawl fishing activities, such as size limits on the nets, seasonal and area restrictions, and fishing quotas. In conclusion, trawling has significantly contributed to the fishing industry's development and provided livelihood opportunities for millions worldwide, but it is crucial to regulate this method to reduce the negative impacts on the environment and work towards sustainability.

**Keywords:** Trawling; Fishing; Sustainability; Ecological impacts; Overfishing

### Introduction

Trawling is a method of commercial fishing that involves dragging a net through the ocean at various depths, catching fish and other marine creatures in its path. The net is typically attached to a large vessel and pulled through the water for several hours, with a crew of fishermen on board to manage the operation. While trawling is a highly efficient and profitable method of fishing, it is also one of the most controversial due to its impact on the environment (Figure 1) [1].

The history of trawling dates back to the 14th century when fishing boats in the North Sea used drag nets to catch fish. The practice became more widespread in the 19th century with the advent of steam-powered boats, which made it easier to drag nets through the water over long distances. Today, trawling is used throughout the world, with different types of nets used for various species of fish. There are two main types of trawling: bottom trawling and midwater trawling. Bottom trawling involves dragging a net along the ocean floor, catching fish and other creatures that live near the seabed [2]. This method is particularly effective for catching flatfish, cod, haddock, and other bottom-dwelling species. Midwater trawling, on the other hand, involves dragging a net through the water column at various depths to catch pelagic fish such as herring, mackerel, and tuna.

While trawling is highly effective in catching fish, it has significant

impacts on the marine environment. One of the main concerns is its impact on non-target species, such as sea turtles, dolphins, and sharks, which are often caught in the nets and thrown back into the water dead or dying. This has led to calls for more sustainable fishing practices and regulations to protect vulnerable species. Another concern is the damage caused by bottom trawling to the seabed and its inhabitants [3, 4]. The heavy nets used for bottom trawling can destroy fragile habitats such as coral reefs, seamounts, and deep-sea ecosystems that have taken centuries to develop. This can result in significant declines in biodiversity and the loss of valuable ecosystem services such as carbon sequestration, nutrient cycling, and habitat provision. Moreover, trawling can also have economic impacts on communities that rely on fishing for their livelihoods. Overfishing, depletion of fish stocks, and increased competition have all contributed to a decline in the profitability of small-scale fishing operations, leading to poverty and food insecurity in some regions.

In response to these concerns, sustainable fishing practices have been developed to reduce the impacts of trawling on the environment. For example, some fishermen use selective gear that only catches the desired species while allowing non-target species to escape unharmed. Others use fishing methods such as hook and line, which have a lower impact on the environment but are less efficient. Moreover, there are also efforts to protect vulnerable marine habitats [5]. In some regions, Marine Protected Areas (MPAs) have been established to limit trawling activities in certain areas and protect sensitive ecosystems. These MPAs

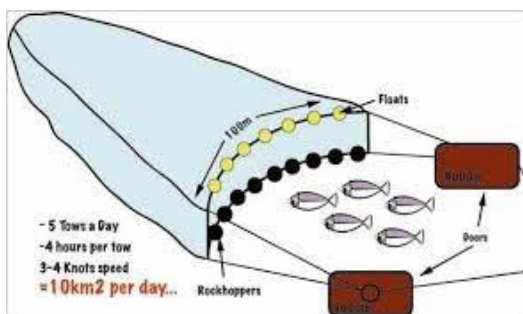


Figure 1: Trawling method for fishing.

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**Table 1:** Importance of Trawling Method for Fishing.

Importance of Trawling Method for Fishing
Allows for efficient, large-scale fishing operations
Ability to target specific fish species and sizes
Can increase fish catch and yield for commercial purposes
Can negatively impact marine ecosystems and bycatch
Mixed opinions on sustainability and ethics of trawling method
Requires significant resources and equipment investment
Regulatory measures in place to manage trawling and protect marine life

have proven to be effective in reducing the impact of trawling on the marine environment and rebuilding fish stocks.

However, there are also challenges in implementing sustainable fishing practices. One of the main challenges is the lack of political will and support from the fishing industry. Many fishermen are resistant to change because they fear that sustainable fishing practices will reduce their profitability or that their interests will not be adequately represented in policy decisions. Another challenge is the lack of funding and resources to implement sustainable fishing practices. For instance, small-scale fishing communities often lack the financial resources and technical knowledge needed to convert to sustainable fishing practices. Governments and international organizations need to invest more in sustainable fisheries management and assist fishing communities in adopting more sustainable fishing practices (Table 1) [6].

## Discussion

The huge standards of the welfare version are that the fishery is maintained as a not unusual place pool useful resource and there may be fantastically unrestricted get right of entry to the fishery. For the welfare-method to characteristic as intended, its miles important that people are capable of input the fishery while different re-assets of employment and sustenance are unavailable and depart the fishery while different re-assets of employment turn out to be available. Therefore the version is fined acceptable for small-scale and artisanal fisheries in which capital necessities are not going to be a barrier for mobility [7].

The major critique of the welfare version is clearly that unrestricted get right of entry to the fishery will cause overfishing and hire dissipation, and even as the concept 'labour buffer' has fantastic connotations, others may consult with this as a poverty lure because of the low earnings fishers are probably to earn if hire dissipates from the fishery. While Béné argue for the welfare version for use in growing nations that lack the institutional potential to manipulate for WBFM, the version is likewise carried out in evolved nations which have the potential to manipulate for WBFM. Here the motive isn't always to characteristic as a labour buffer or safety-internet despite the fact that it is able to additionally have that characteristic however to preserve employment or maximise activity yield, as is the case with inside the Faroe Islands. Some may see this as an advantage of the version and others as a disadvantage [8, 9]. Whether it's miles an advantage or disadvantage arguably relies upon at the monetary context, e.g., if there may be huge neighbourhood unemployment, the use of the fishery as a labour buffer can be desirable.

The Faroese fishing fleet may be divided into 3 segments primarily based totally on number one fishing vicinity and goal species the house fleet, the pelagic fleet, and the distant-water fleet. The predominantly demurral domestic fleet is similarly divided into vessel businesses primarily based totally on tools and length trawlers, long liners, and the coastal fleet, which once more includes coastal trawlers, coastal

long liners, and jiggers. The fisheries below evaluation on this paper are the demurral trawlers with inside the domestic fleet, that is welfare-controlled, and the pelagic fleet and distant-water fleets, which might be WBFM controlled [10].

The demurral trawlers consisted of 33 unmarried and pair trawlers in 2017. The fleet predominantly operates with inside the Faroese EEZ and objectives saithe, mackerel, Greenland halibut, cod, and extra silver smelt. The demurral trawlers best started focused on mackerel in 2011, an instantaneous end result of an accelerated abundance of the inventory in Faroese waters when you consider that 2008. The overall touchdown price of the demurral trawlers become almost DKK 535 million in 2017, on common DKK sixteen million in line with vessel [11].

The distant-water fleet consisted of 5 manufacturing facility trawlers in 2017. The fleet operates with inside the Barents Sea, Greenlandic waters, and North-East Atlantic Fisheries Commission areas, and the primary goal species are cod, haddock, Northern shrimp, and Greenland halibut. The overall touchdown price of the distant-water fleet become DKK 460 million in 2017, on common DKK ninety two million in line with vessel [12].

The pelagic fleet consisted of sixteen commercial trawlers and handbag seiners in 2017. They perform in Faroese and EU waters, in addition to waters round Iceland, Greenland, Norway, and North-East Atlantic Fisheries Commission areas. The goal species are mackerel, blue whiting, herring, and capelin. The pelagic fishery has grown from a complete touchdown price of DKK 435 million in 2009 to a complete touchdown price of DKK 1.fifty three billion in 2017, on common DKK 102 million in line with vessel, the best vessel common of the 3 [13].

The 3 fleets have operated below one-of-a-kind regulatory regimes. The domestic fleet as an entire has been controlled with attempt quotas with inside the shape of person transferable fishing days, tools regulations, and temporal and spatial closures from 1996 thru 2017. No Total Allowable Catch limits were in area with inside the Faroese demurral fishery when you consider that 1995. Entry to the fishery become regulated with a set quantity of licenses and granted all vessels energetic in 1995. All entrants to the fleet after 1995 have received harvesting licenses from incumbents. The vessel organization called demurral trawlers on this paper includes unmarried trawlers and pair trawlers however previous to 2011; those have been controlled as businesses. Pair trawlers have been difficulty to the before-referred to rules, even as the unmarried trawlers have been difficulty to bycatch quotas in place of fishing days. The domestic fleet become for a short duration controlled with ITQs and TACs however bad layout quotas couldn't be completely transferred mixed with a surprising boom of the cod inventory made the device very inflexible. Industry has become against ITQs and the device becomes abolished after best years [14].

Annual allocations of fishing days were primarily based totally on clinical recommendation from the Faroese Marine Research Institute in addition to pointers from the Fishing Days Committee, a committee produced from enterprise representatives, which base its pointers at the effect on enterprise. There aren't any any goal mortality quotes or season period regulations in area. The allocation of fishing days has continually passed clinical recommendation, and common utilisation of fishing days ranged fifty three–90% with inside the duration 1996–2015 for vessel businesses with inside the domestic fleet. This way there was an abundance of fishing days with inside the device and because of their transferable nature; fishing days have now no longer located barriers on fishing attempt with inside the fishery [15, 16]. As an end

result, the 3 maximum vital demurral shares in Faroese waters cod, haddock, and saithe were difficult to greater or much less steady overfishing when you consider that they collapsed with inside the early 1990s. Excess fishing days, strict regulations on fishing days transfers among vessels in one-of-a-kind vessel businesses and consolidation limits has avoided the rationalisation and performance will increase related to transferability from taking area. This has left the house fleet overcapitalised and in large part unprofitable, despite the fact that a few vessels businesses have completed higher than others. It is apparent from the rules in area that the coverage goal for this fishery has been to preserve employment and it has all of the traits of a welfare controlled fishery.

## Results

### The importance of trawling method

The main advantage of trawling is that it allows fishers to catch large quantities of fish with minimal effort and cost. This is important for the fishing industry as it allows them to meet the demand for seafood and maintain profits. Trawling is also a relatively easy fishing method to implement as it does not require advanced technology or specialized skills. However, the downside of trawling is that it can have significant environmental impacts [17]. The trawl nets can damage the seabed and other marine habitats, leading to significant changes in the ecosystem and reduced populations of marine organisms. Trawling can also lead to bycatch, where non-target species or juvenile fish are caught unintentionally.

### Advantages of trawling method

**High catch rate:** Trawling method is known to have a high catch rate. This is achieved because the trawl net can cover a wide area and retrieve a large number of fish in a single haul.

**Wide range of species:** Trawling method can target a wide range of species including pelagic and demersal fish, as well as crustaceans [18].

**Cost-effective:** Trawling method is often considered cost-effective as it requires minimal manpower and equipment. This is more affordable compared to other fishing methods that require divers or long lining equipment.

**Good for deep-sea fishing:** Trawling is an effective method for deep-sea fishing, where other methods may not be practical.

### Disadvantages of trawling method:

**Bycatch:** Trawling method often results in the unintended catching of non-target species, commonly referred to as bycatch. This can result in the depletion of species, which can affect the ecosystem.

**Environmental damage:** Trawling method can cause serious damage to marine habitats such as coral reefs, sea grasses, and other benthic ecosystems. This can result in a loss of habitat, and ultimately a reduction in fish stocks [19].

**Unsustainable practice:** The high catch rate associated with trawling method can lead to unsustainable fishing practices, which may result in overfishing and severe depletion of fishing stocks over time.

**Logistical issues:** Trawling method requires specialized equipment and a significant amount of time to properly set up the nets and gear, which may cause logistical issues for fishermen. Additionally, there may be restrictions in certain areas where trawling is not permitted, due to concerns about bycatch, environmental damage, and sustainability issues [20].

## Conclusion

In conclusion, trawling is a highly efficient method of fishing in the deep ocean that has significant impacts on the marine environment and it is important to ensure that its impact on the environment is minimized. While there are efforts to reduce its impact through sustainable fishing practices, there are also challenges in implementing these practices and protecting vulnerable ecosystems. More needs to be done to support sustainable fisheries management and assist fishing communities in adopting more sustainable fishing practices. Sustainable fishing practices that balance the needs of the fishing industry with the preservation of the ocean environment are crucial for the long-term viability of the fishing industry. By doing so, we can ensure that future generations can continue to enjoy the benefits of a healthy and thriving marine environment.

## Conflict of Interest

The author declares has no conflict of interest.

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None

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