

RESEARCH ARTICLE

The quest for fisheries governance: Lessons from the Faroe Islands

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We document the 40-year quest for coherent fisheries governance in the Faroe Islands. The centrality of commercial fisheries to the Faroese economy means that getting fisheries policy right is at the core of social and economic coherence in this small close-knit nation. But the lessons learned here have pertinence to all commercial fisheries. The primary lesson is that fisheries management is a conceit—a chimera. Fisheries policy is about stewardship and the continual balancing of contending visions regarding the purpose of a nation's fisheries. Policy is inherently contentious over long periods because the polity is always undergoing demographic transition. Most importantly, policy is difficult because participants are never sure what they want until they learn about what is possible for them to have. Compounding this problem is the realization that the participants are themselves changed by a process that John Dewey identified as “trying and undergoing.” Humans adopt policies (trying) and then are themselves changed by the playing out of the implications of those policies (undergoing). All public policy is a continual saga of trying and undergoing—which leads to a new and adapted trying. This adaptive process is not management but governance.

Keywords: Faroe Islands, Governance, Trying and undergoing, Demographics

1. The enduring quest

The idea and practice of *managing* natural resources can be considered an outgrowth of “scientific” forest management originating in Germany under the influence of Martin Faustmann—a prominent owner of forest land. Faustmann's famous formula for making efficient harvesting decisions was published in 1849 under the pseudonym “F.” Why Faustmann sought the safety of anonymity is not clear, but seeking it suggests that most forest owners based their harvest decisions on other reasons (Hanson, 2005). In addition to the mythic role of the dark foreboding forests of German lore (the “black forest”), German forests have always been seen as a complementary activity to the cyclical uncertainty of agricultural pursuits. Forests were seen throughout Germany as “living savings accounts” managed so as to carry the large agricultural estates through difficult times. The idea of managing forests so as to maximize income was apparently quite radical.

There is an interesting parallel in ocean fisheries. Although Scott Gordon did not need to publish under a pseudonym, his 1954 paper was nevertheless a direct challenge to the well-established approach that stressed maximizing sustainable yield from a fishery (Schaefer,

1954). Another economist, Anthony Scott, entered the fray on Gordon's side 1 year later (Gordon, 1954; Scott, 1955). By advancing a new guide to maximization, it became necessary to agree upon the appropriate maximand. Economic efficiency entered the discussion, and soon the new goal of fisheries management was to maximize what Gordon called “economic rent.” In simple terms, ideal management—calculated as fishing effort—occurred where the difference between total revenue and total costs was maximized.

The resulting contestation over what “efficiency” means in fisheries management has dominated the literature since those early days (Bromley, 1990, 2009). Once the idea of individual transferable quotas (ITQs) entered into the discussion, “efficiency” took on a more explicit meaning as requiring the purging of so-called redundant and inefficient vessels pursuing too few fish. This exercise was given the appealing name of “rationalizing” the fishery. It seemed compelling—no manager could feel comfortable presiding over an “irrational” fishery management regime (National Research Council, 1999; Hannesson, 2004; Grafton et al., 2006; Anderson and Holliday, 2007; Beddington et al., 2007; Hilborn, 2007a, 2007b; Branch and Hilborn, 2008; Costello et al., 2008; Bromley, 2008, 2009; Barner et al., 2015). The devastation of rationalization schemes for small-scale coastal communities has remained contentious (Eythórsson, 2000; Einarsson, 2011). Such “rationalization” invariably brought unemployment and despair to small fishing communities. The grand idea that evicted fishing families (and associated

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labor) could easily find more “efficient” employment outside of the fishery simply compounded the hostile reaction to “rationalization” schemes (Bromley, 2005, 2008, 2009).

The source of contention is easy to locate. Notice the profound difference between a single landowner *managing* a large stand of timber and a national government seeking to exercise *stewardship* over a complex dynamic public asset. The individual forest owner can indeed *manage* (control) a stand of trees, but a public agency must concern itself with contentious *mediation* among a number of aspiring claimants who wish to derive income from a complex fishery resource they do not own. We stress the important difference between *management* and *stewardship* to reflect the difference between a setting of unified single-agent control by an owner and a setting of numerous contentious claimants driven by the quest for predictable income streams under the imperative of avoiding resource degradation—and perhaps collapse. Stewardship is not management.

This distinction between management and stewardship has been recognized by several important contributors to the fisheries literature. Indeed, our approach here is motivated by the troubled 40-year legacy of continual attempts by an important fishing nation to develop and maintain a regime of coherent and science-based fishery management. What is striking about this long and contested legacy is the inability of the various participants to reach necessary agreement on what, exactly, ought to be the correct goal (purpose) of their nation’s fishery. Notice that one cannot manage something in the absence of a clear and stable objective function firmly in view. As above, the owner of a timber stand certainly brings such an objective to bear on every decision. The owner is able to manage (exercise control).

Our purpose here is to offer empirical evidence in support of the growing agnosticism about the very idea of *management* of a complex commercial fishery. In 2001, the mathematician Donald Ludwig offered up a challenging proposition that “The Era of Management Is Over” (Ludwig, 2001). Ludwig’s salient point was that *management*—purposeful control—of fisheries is a chimera. That seminal idea has since been reinforced by a number of other authors expressing similar concerns (Degnbol et al., 2006; Jentoft, 2006; Johnsen, 2014; Bresnihan, 2019). In practical terms, when public decision makers cannot agree on the goals and objectives of a resource regime, it cannot be a surprise that “management” is impossible. That impossibility is then finessed (meliorated) by a succession of attempts to create acceptable fisheries governance—not management—regimes.

We here describe that long, difficult quest for coherent stewardship of Faroese fisheries. We will show that the quest for *fisheries governance* is exactly what transpired as the government of the Faroe Islands experimented with a series of “management” regimes—each of which failed to deliver the promised results. As Ludwig (2001) insisted, *fisheries management* is essentially a fool’s errand. We find the term *governance* to be congenial because it captures the reality of a negotiated ongoing process of responding

to contestation among participants in a shared yet competitive zero-sum game. This process of contested searching—what we call a quest—for coherent governance has been sabotaged by the ideology of *panaceas* that has arisen in the fisheries literature (Young et al., 2018).

Perhaps the most pernicious panacea in fisheries policy is the creation of the ITQ. Here was a device (a management “tool”) that would bring what was called “efficiency” to any fishery, it would solve the race for fish, it would lead to an abundance of fresh product, it would allegedly bestow what is called “property rights” on quota holders (thereby magically turning them into enlightened stewards of the resource stock), it would purge fisheries of redundant vessels, it would make sure that the most efficient vessels remained in a fishery, and it would bring about the marvelous situation in which fishing families thereby removed from a life of fishing would suddenly realize that they would be much better off pursuing other lines of work. This latter realization always required the curious notion that those engaged in a fishery were ignorant of their own self-interest—an elitist conceit on the part of policy makers (see also Cardwell, 2015). To the surprise of very few, ITQ programs have not delivered what was promised for them (Bromley, 2009; Young et al., 2018). By overpromising, such panaceas simply created further discord. We bring evidence of that problem from the Faroese experience.

We now turn to an account of the long and tortured transition in the Faroe Islands as it now enters its fifth attempt at crafting a coherent and acceptable fisheries governance regime. These five stages are (1) forced adjustments in response to the new Law of the Sea creation of Exclusive Economic Zones; (2) imposed reforms by Denmark in 1994; (3) industry-driven reforms in 1996; (4) market-based reforms beginning in 2018; and (5) abandonment of the 2018 reforms 2 years later (see also Jacobsen, 2019).

1.1. Forced adjustment: 1977

The 1977 adoption of Exclusive Economic Zones in the North Atlantic confronted the Faroese fishing industry with a stark urgency. While foreign vessels were now excluded from the Faroese Fisheries Zone (FFZ), the predominantly distant-water Faroese fishing fleet was suddenly deprived of its historic access to fish stocks that had long comprised the foundation of the Faroese economy. Most vessels had to be quickly reconfigured for pursuing fish in much smaller domestic waters. A variety of government subsidies helped to ease the financial implications of this required transition.

Gradually, a local filet industry emerged. Between 1979 and 1989, the number of fish factories increased from 15 to 23 (Gezelius, 2008, p. 101). Local employment flourished. Unfortunately, the fishing industry and associated businesses became increasingly dependent on a variety of perverse inducements. Soon, 5%–10% of the Faroese treasury was dedicated to subsidies and budget transfers to the fishing industry. In addition, two Faroese banks were caught up in the growing economic crisis. Fish stocks

began to show the harmful effects of a much more powerful fleet operating in a constricted FFZ (Gezelius, 2008).

The policy focus had been on species composition of the catch, regulations on mesh size, small-fish rules, area closures, and periodic bans when fish stocks seemed threatened. However, little attention was paid to the growth in total fishing capacity. Finally, after a decade of serious neglect, a licensing scheme was introduced in 1987 to bring total fishing power under regulatory oversight (Gezelius, 2008). A *Raw Fish Fund*—dating from 1975—continued to modulate interannual swings in fishing income. The Fund became a primary instrument for market regulation (Danielsen and Agnarsson, 2018a, 2018b).

It was assumed that the industry would allocate fishing effort in response to relative prices of the three major stocks—cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus*), saithe (*Pollachius virens*)—and that as certain stocks diminished, catch-per-unit-effort would fall and effort would then switch to relatively more abundant stocks. Surprisingly, this expected behavior did not occur. As a result, the Raw Fish Fund was used to manipulate ex-vessel fish prices to offset sharp differences in the market value of different species. However, the pricing arrangements of the Fund were insufficient to affect fishing pressure on high-valued stocks—cod and haddock (Gezelius, 2008).

By this time, stock declines in cod and haddock forced the government to confront failures in the Raw Fish Fund as an instrument to mediate excess fishing capacity and the resulting overfishing on certain stocks. Gradually, policy makers made the obvious connection between perverse subsidies and resulting industry behavior. Subsidies were eventually scaled back, and price enhancements administered by the Raw Fish Fund were abolished in 1990 (Gezelius, 2008). These changes coincided with a dramatic drop in the world price of cod and with a serious crash in both cod and haddock stocks. The situation became so bad that in 1993, the International Council for the Exploration of the Sea (ICES) Advisory Committee for Fisheries Management recommended complete closure of all Faroese fisheries.

These biological and economic changes coincided with an emerging trend toward vertical integration of large vessels and processing capacity. Soon, approximately two thirds of the trawlers and liners were in joint ownership arrangements with the processing industry. As a result, the 23 processing plants existing in 1989 were reduced to 14 by 1993. The number of deep-sea trawlers dropped from 74 to 55 over the same 4-year period. The two Faroese banks mentioned above were on the verge of collapse (Gezelius, 2008). The first phase of Faroese fisheries management turned out to be severely problematic.

Summary: Excessive subsidies had brought perverse behavior from the industry, several fish stocks crashed, vertical integration brought about increased economic power for some participants, a large number of local processing plants were forced to close, a number of vessels were pushed out of the fishery, and banks fell under financial duress.

1.2. Imposed reforms: 1994

The Faroe Islands is a self-governing part of the Danish realm. By 1992, a gathering financial crisis required the Danish government to come to the rescue of the Faroese economy. The Danish government provided 1.7 billion Danish Kroner (DKK) in loans to save the banks, and a special fund was established to address the causes and consequences of the financial crash. Importantly, one of the conditions of the Danish rescue program was that the Faroese government would finally bring economic coherence to its defective fisheries policy. The two stipulations were (1) fisheries policy must create a self-supporting economically viable industry based on “biologically optimal” management protocols; and (2) fisheries policy must be based on the principles of a “market economy.” The Faroese tradition of political meddling in fishery policy was of particular concern to the Danish government (Gezelius, 2008).

Paramount in restructuring the industry was the need to reduce subsidy-driven fishing capacity and to conserve fish stocks. A special “Structure Committee” was created with the mandate to craft a new fisheries policy based on one of the two possibilities: (1) government-mandated reductions of the fleet or (2) the introduction of a limited number of gifted ITQs. Under strict time pressure from Danish authorities, and with little time for comprehensive review and deliberation, the Structure Committee decided to adopt the “Icelandic model,” and it recommended the introduction of ITQs (Gezelius, 2008). Recall that this period coincided with the apogee of ITQ popularity (Young et al., 2018).

However, accumulating evidence of other problems with ITQ regimes began to emerge. The Northern cod stock off the Canadian coast had crashed, and the Northeast Arctic cod fisheries managed jointly by Norway and Russia had been hit by an earlier crisis in 1989. Iceland’s cod stocks also crashed. Excessive discards, a feature of ITQ fisheries, had revealed the fatal defect in such regimes. Faroese fishing firms had been watching, with alarm, the poorly managed North Atlantic cod fishery. Moreover, a number of EU fisheries managed under ITQ systems had been experiencing severe levels of illegal discards. The problem was serious enough that the Faroese government introduced a ban on discards and enabled confiscation of illegal discards (Gezelius, 2008).

At this time, the Faroese Parliament—not fishery scientists or managers in the Ministry of Fisheries—were responsible for setting annual total allowable catch (TAC) for each fish stock, with quotas then distributed among five vessel groups based on a system of fixed relative shares. The offshore fleet possessed individual quotas based on fixed shares of the group quota. We would call it a TAC-share fishery. The inshore fishery was based on their group quotas (Gezelius, 2008, p. 106). The government was authorized to consult logbooks, sales notes, and to carry out extensive surveillance on shore and at sea.

However, management problems and political conflicts persisted. Scientifically credible determination of TAC turned out to be more difficult than imagined. Annual fluctuations in cod stocks became the subject of intense

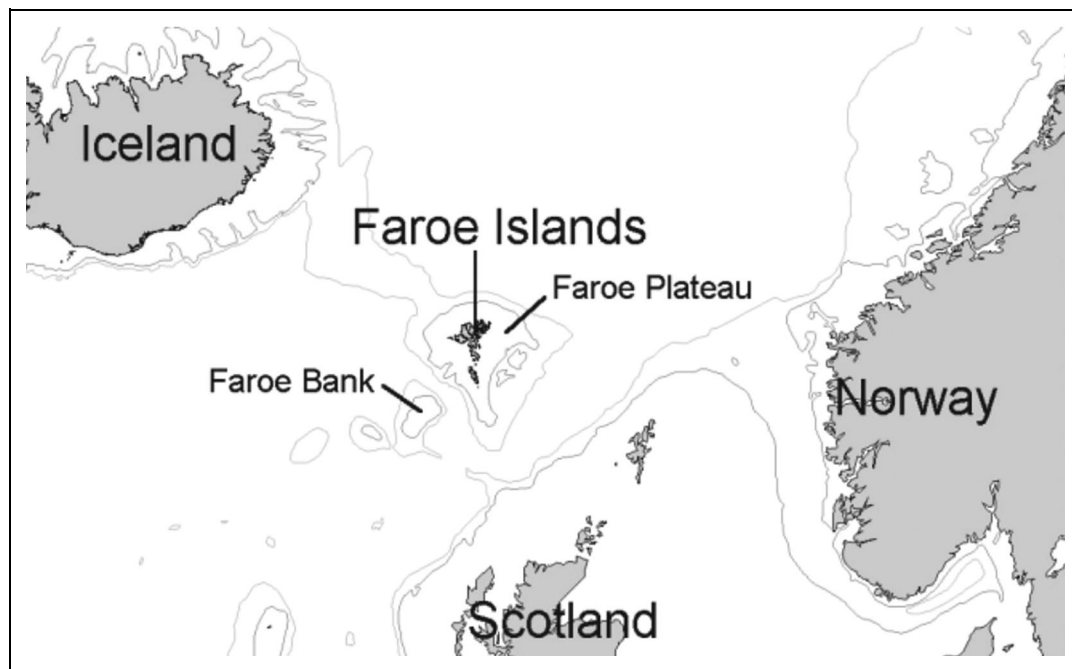


Figure 1. Map of the Faroe Islands. Approximate location of the islands is 62°N and 7°W, with important fishing areas, Faroes Plateau and Faroes Bank, indicated. Depth contours are 200 and 500 m. Map reproduced from Joensen et al. (2005). DOI: <https://doi.org/10.1525/elementa.2020.00115.f1>

debate between fisheries scientists and the fishing industry. Such disagreements are common in fisheries policy. But in a small close-knit society, such disagreements are politically destabilizing. When cod stocks recovered in 1994–1996, the pressure from the industry to increase the cod TAC was intense (Gezelius, 2008).

The multispecies nature of the Faroese fishery—cod, haddock, and saithe—meant that the pursuit of haddock and saithe produced excessive bycatch of cod. Discards became problematic, and there were accusations of falsified notebooks to hide the extent of bycatch. Indeed, industry records suggested that misreporting comprised approximately 18% of cod landings (ICES, 2006, p. 32). Closures seemed to be the only option. The new quota system also threatened the viability of many shore-based processing facilities and so yet additional resistance to this new management regime emerged in small villages where processing was the only source of employment.

At this point, it became apparent that coherent fisheries governance—a process that could offer both economic rationality and political legitimacy—required reliable scientific data, up-to-date and reliable reporting, regulatory adaptation, and—most importantly—trust. The 1994 regime offered nothing in this regard.

Summary: Members of the Faroes Parliament learned just how difficult setting meaningful TAC levels in a multi-species fishery can be. They also came to learn a harsh lesson about discards and bycatch. The stocks recovered during this period, but the factories were forced to close because of overcapacity and demands from the Danish government. The lesson here is that intense political micromanagement of a fishery is difficult. In the Faroe Islands, it destroyed yet another attempt at “management.”

1.3. Industry-driven reforms: 1996

In 1995, and in recognition of the inherent flaws in the ITQ regime, the industry requested important modifications. A Planning Committee was asked to produce a new set of policies by February 1996. The principal condition was that the ITQ-/TAC-based regime should be replaced. This condition was met by a new system of fishing days allocated to license holders, augmented by area closures when necessary. This effort-control system was adopted as a means to reduce bycatch. License holders were permitted to trade their allotted fishing days among similar vessel-type groups (Gezelius, 2008, p. 107).

Serious problems began to emerge within just a few years (Hegland and Hopkins, 2014). Haddock landings plummeted as its biomass shrank substantially. The biomass of cod on the Faroes Bank (see map in **Figure 1**) reached a level that all fishing there was suspended in 2009. On the Faroes Plateau, a similar crash was underway. These problems figured prominently in the persistent contestation between the fishing industry and the government's scientific experts. If effort management systems are to work, there must be some means to transform the historic two-sided contestation between fisheries science and industry into a genuine *dialogue of governance*. In the absence of this systems approach, fisheries policy is fatally undermined by constant preoccupation with the “vessels-versus-fish” framing that plagues fisheries governance throughout the world (Ludwig, 2001; Johnsen, 2014).

The obvious problem was that only two “voices” were being heard in the discussion of fisheries policy. The absence of a credible environmental community—or general public participation—focused on fisheries meant that

what is generally a three-way discussion and negotiation in most countries became seriously polarized.

With such durable disagreements, the entire debate over crucial governance decisions was simply passed, unavoidably, to the political arena (the Faroese Parliament) where crucial harvesting decisions about specific stocks—and specific areas—became the subject of political contestation. Indeed, because both groups of participants—fisheries scientists and the fishing industry—knew that the ultimate decision would be made at the political level, there was a perverse and counterproductive incentive to stake out rather extreme positions as a starting point for bargaining that *would then be carried out by others*. In such circumstances, there was no reason to seek common ground (Jacobsen, 2019).

At the same time, the opportunity to harvest pelagic fish and demersal fish in the Barents Sea was still regulated as quotas. These tradable quotas had been given to shipowners starting in 1996 and had been steadily increased in line with increases in the pelagic stocks. Beginning in 2000, there were large trades of quota among vessels in both the pelagic sector and in the distant-water fleet. The magnitude of this activity alerted politicians—and the general population—to the enormous economic gains (rents) accruing to the industry. By 2010, this large windfall profit in the pelagic sector induced the Faroese government to abandon the multinational mackerel (*Scomber scombrus*) agreement. In 2013, the Parliament decided to quit the herring (*Clupia harengus*) agreement, and in 2015, the Faroese government abandoned the least profitable blue whiting (*Micromesistius poutassou*) agreement (Ellefsen and Justinussen, 2020). Over the course of this period, Faroese quotas for mackerel had increased from around 15,000 tons in 2009 to 150,000 tons in 2011. It was then that the sentiment arose to capture a share of this new resource rent by introducing an auction of fishing permits. The resulting revenue to the Faroese treasury amounted to 72 million DKK (approximately \$12.8 million) for 20,000 tons of mackerel. Most of this new bounty was sold to a single vessel owner who did not, at the time, have a quota for mackerel (Fiskivinnunýskipanarbólkurin, 2016, pp. 96–97).

Problems soon emerged. Most importantly, existing quota holders were upset that a newcomer had been awarded a mackerel quota. In November 2011, there was a new government that reflected this fondness for traditional quota holders and that was hostile to the new auctions. Also during this period, the Faroese Parliament awarded new mackerel quota to specific interest groups. Long-liners, unequipped to harvest mackerel, were nonetheless gifted with mackerel quota. Small vessels, equally ill-suited to pursuing mackerel, also were politically gifted with quota. That allocation system is mostly intact to this day (Faroese Ministry of Fisheries, 2020). While 70% of the quota remains with purse seiners who actually fish mackerel, the remainder of the industry obtains gifted quota and then sells it to purse seiners who are well-suited to harvest mackerel (Vorn, 2020).

Summary: This third attempt at “management” was marked by sharply declining stocks of cod and haddock.

Most importantly, there were familiar and contentious struggles over scientific evidence in which members of the Parliament aggressively disputed estimates of stock sizes, composition, and safe harvest levels. The industry undertook several large trades of quota, which angered the politicians. A large mackerel stock led to enormous windfall profits among several fortunate companies. These individuals were soon referred to as the “Quota Kings”—an unpleasant label in a small close-knit nation. Several North Atlantic fishing agreements were abandoned. Rancor and tension was common in this troublesome era.

1.4. Market reforms: 2018

When the effort-control system replaced the TAC/ITQ system in 1996, there had—once again—been a very brief window for crafting a new governance regime. However, once again an acute emergency precluded careful system design. Moreover, existing data were inadequate to a careful calibration—and determination—of optimal effort. A decision was made to establish a rather generous level of effort on the assumption that as the participants gained experience with the new regime, and as better data became available, necessary adjustments could be introduced.

However, with the passage of time, fisheries biologists—aware of deep scientific uncertainty—embraced the “precautionary principle.” Industry representatives, concerned with income growth—and always driven by the debt-service obligations tied into their reliance on purchased ITQ shares (or borrowing against ITQ shares as collateral)—advocated for more generous harvest totals. These two contending positions, forcefully represented, easily became just another aspect of the enduring political nature of fisheries policy. Adding to the political anger, some quota holders had become wealthy by selling quota that they had received for free from the government (Ellefsen and Justinussen, 2020). By 2007, growing frustration—and persistent political wrangling—finally led the Faroese Parliament to terminate all existing fishing licenses effective January 1, 2018. Once again, it was the time to start over.

On January 1, 2018, a new fisheries governance regime came into effect in the Faroe Islands. This new regime, reflecting the Government’s embrace of eight *governance goals*, offers an important lesson for the international community that seems unsure about how to improve global fisheries governance. The “eight commandments” of the new Faroes regime were as follows (Fiskivinnunýskipanarbólkurin, 2016, p 166):

1. All fisheries must be biologically, economically, and socially sustainable;
2. All living marine resources in Faroese waters, as well as those managed under international agreements, shall remain the property of the people of the Faroe nation and cannot become the property of private companies or individuals or be sold abroad;

Table 1. Percentages of existing quotas sold at auctions for each catch from 2016 to 2019. DOI: <https://doi.org/10.1525/elementa.2020.00115.t1>

Fishery	Percentage Sold at Auction			
	2016	2017	2018	2019
Blue whiting	7	15	25	25
Mackerel	10	11	15	15
Herring	8	40	19	46
Barents Sea, Norway	10	10	17	15
Barents Sea, Russia	10	10	17	15

Table 2. Auction results: Average prices (DKK/kg) for 1-year rights and percentages of realized landing prices for each catch from 2016 to 2019. DOI: <https://doi.org/10.1525/elementa.2020.00115.t2>

Fishery	DKK/kg (Percentage of Average Price) by Year			
	2016	2017	2018	2019
Blue whiting	0.11 (5)	0.24 (17)	0.45 (27)	0.42 (20)
Mackerel	3.66 (50)	3.18 (46)	4.77 (70)	6.62 (78)
Herring	3.58 (52)	1.51 (41)	2.50 (36)	2.41 (57)
Barents Sea, Norway	4.50 (25)	3.01 (16)	3.10 (16)	8.31 (42)
Barents Sea, Russia	3.15 (18)	2.47 (13)	1.82 (9)	7.18 (36)

3. Fishing rights shall be in Faroese hands;
4. We must move away from private sales of licenses and fishing rights;
5. We must move away from political allocation of fishing rights and toward a market-based system;
6. Inshore processing plants shall have access to bids for all fish catches;
7. Catches and all related products should be landed in the Faroes and, to the greatest extent possible, processed here for added value;
8. Only Faroese-owned companies registered in the Faroes, paying taxes in the Faroes and paying their crews in accordance with Faroese collective agreements, may seek to participate in Faroese fisheries.

The primary motivation for this new approach to fisheries governances was to abandon the many problems arising from the political allocation of access to fish. The only way to accomplish this goal was to make an economic allocation based on which fishing firms exhibited the greatest interest in fishing. Such an allocation requires

that permits be tendered in an auction where willingness to pay is a plausible measure of the value of fish to the fishing firm. In 2016, this approach was tried on an experimental basis for pelagic quota and stocks in the Barents Sea. Around 10% of the available catch was sold on auction (**Table 1**; Fiskivinnunýskipanarbólkurin, 2016, p. 98). In 2017, a larger quantity was let on auction—specifically, approximately 40% of the herring harvest was tendered in an auction. For both herring and mackerel, firms bid approximately 50% of the average landing price (see **Table 2**).

Starting in 2018, auctions were part of the new fisheries management law. But after much political negotiations, only 15%–25% of most of the pelagic and Barents Sea stocks were sold on auctions. This 15%–25% was tendered as permits for quota for periods of 1, 3, and 8 years in addition to some 1-year rights tendered (**Figure 2** and **Table 3**) for extraordinarily high quotas. The offering prices in these auctions exceeded those in previous years, with mackerel quota fetching resource rentals of around 70% to almost 80% of the landing price. Government revenue from these auctions totaled 187 million DKK (approximately \$28.8 million) in 2019—the highest returns yet. In addition to the auctions, resource fees were set by the government that yielded around 150 million DKK. This revenue, covering 80% of the total quota, produced less resource rent than was derived from the remaining 15% that was tendered on auction (**Figure 3**; Ellefsen and Justinussen, 2020).

One criticism of these early auctions was that they did not bring forward enough new actors to the fishing industry, which was partly a result of flawed auction design. To correct this flaw, the government then gifted about 10% of the existing pelagic quota through an application round (**Figure 2**). The applications were then screened by a special committee whose guidance was to favor vessel owners from the western and southern parts of the Faroes who did not have pelagic quotas at the time. These new vessel owners paid only the standard resource fee for their quotas. The incumbent vessel owners were generally displeased with the auction initiative—they now faced new higher prices for fish, and they did not like the uncertainty associated with auctions. Also, they did not like the quotas being gifted to other vessel owners (Ellefsen and Justinussen, 2020). As they already had assured access to 70% of total allowable harvests in normal years, their concerns were focused on the incremental 30% of landings. The total amount paid to the country was around 300 million DKK during these years. The government devoted this new resource rent to a much-needed additional spending on health care.

Summary: The domination of fishery policy by contending interests once again undermined a suite of promising market-based reforms. The industry was unhappy to pay for fish that had once been virtually free, and the auctions introduced a level of uncertainty that the industry found unwelcome. The small amount of gifted landings to a few

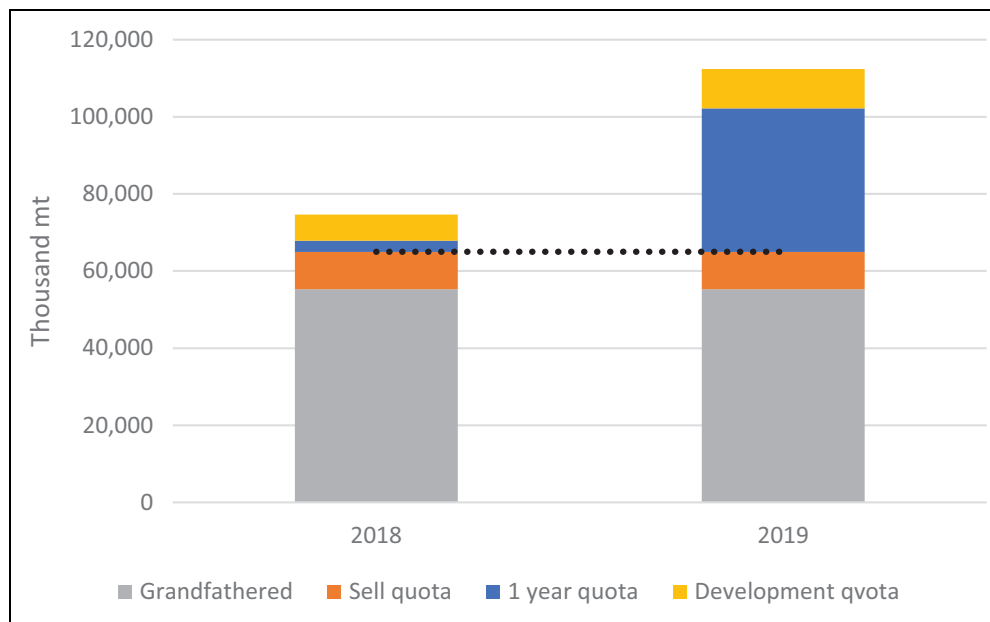


Figure 2. Allocation for herring in 2018 and 2019. Grandfathered quota is the quota to owners who were owners before the reform. Sell quota were long-run quota sold on auction (1-year, 3-year, or 8-year quota), while 1-year quota were quotas only valid for 1 year. Sell quotas were fixed to be 15% of the limit, which in this case is 65,000 mt. Development quotas were quotas that were allocated through an application round. DOI: <https://doi.org/10.1525/elementa.2020.00115.f2>

Table 3. Auction results: Average prices (DKK/kg) for 1-year, 3-year, and 8-year rights for each catch in 2018 and 2019. DOI: <https://doi.org/10.1525/elementa.2020.00115.t3>

Fishery	1-Year Rights		3-Year Rights		8-Year Rights	
	2018	2019	2018	2019	2018	2019
Blue whiting	0.45	0.42	0.6	0.46	0.66	0.46
Mackerel	4.77	6.62	5.11	6.62	6.1	6.62
Herring	2.5	2.34	2.75	2.32	2.95	2.46
Barents Sea, Norway	3.10	8.31	NA ^a	NA ^a	3.20	6.00
Barents Sea, Russia	1.82	7.18	3.20	6.00	3.20	6.00

^aThere were no sales of 3-year rights in the Norwegian part of the Barents Sea.

vessels once again highlighted the deep political nature of fisheries governance.

1.5. Reversion: 2020

Highlighting the political nature of Faroese fisheries policy, in 2019, the Faroese people awarded the former opposition party (and its allies) an election victory. The new fisheries governance regime reverted to what it was between 1996 and 2015—an ITQ system for the pelagic fishery and the Barents Sea fleet—and no auction. The only difference is that now vessel owners are required to pay a larger fee for fish—a resource rent—that will be set by politicians rather than the market. This fee is calibrated to earn for the government a sum of revenue equal to what was earned in 2018—approximately 300 million DKK (approximately \$46 million). This sum is estimated to be around 20% of the total landing value of the Barents Sea

and pelagic Faroese fisheries. The demersal fisheries around the islands, managed on a fishing days system, remain unchanged.

Summary: Once again, changes in dominant political parties in the Parliament undermined economic logic concerning willingness to pay to gain access to fish stocks. The gifting of that access has returned.

2. Fisheries policy as dynamic adjustment

The nature of experience can be understood only by noting that it includes an active and a passive element peculiarly combined. On the active hand, experience is trying—a meaning which is made explicit in the connected term experiment. On the passive, it is undergoing. When we experience something we act upon it, we do something with it;

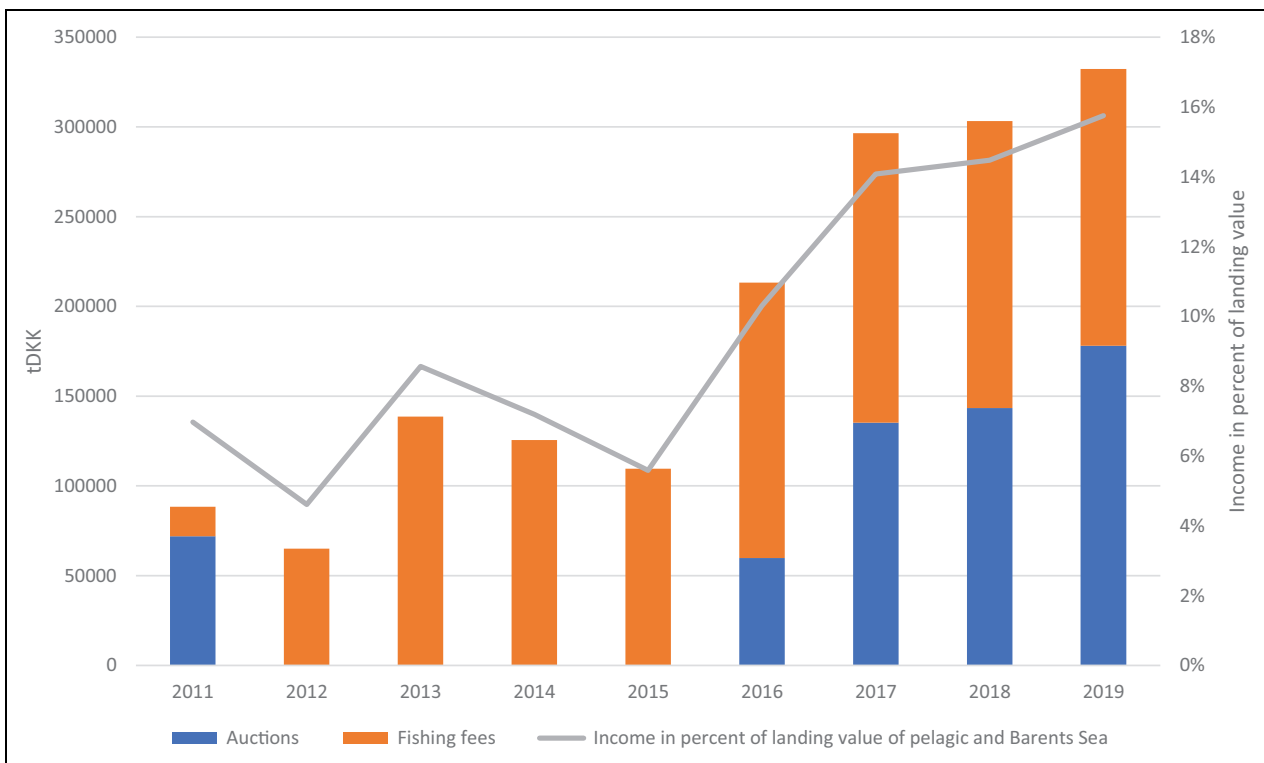


Figure 3. Realized government income since 2011. Income from fishing fees and income from auctions in thousand DKK. Fees in percentage compared to the landing value of the three mentioned pelagic species (herring, mackerel, and blue whiting) and the Barents Sea (right-hand axis). DOI: <https://doi.org/10.1525/elementa.2020.00115.f3>

then we suffer or undergo the consequences. We do something to the thing and then it does something to us in return; such is the peculiar combination. The connection of these two phases of experience measures the fruitfulness or value of the experience. Mere activity does not constitute experience. It is dispersive, centrifugal, dissipating. Experience as trying involves change, but change is meaningless transition unless it is consciously connected with the return wave of consequences which flow from it. When an activity is continued into the undergoing of consequences, when the change made by action is reflected back into a change made in us, the mere flux is loaded with significance. We learn something. (Dewey, 1916, p. 139)

It may appear that the four-decade-long quest for a coherent fisheries governance regime in the Faroe Islands can be blamed on the persistent meddling by politicians in the scientific business of fisheries management. Such blame would be a serious mistake, and it would send precisely the wrong message to fisheries policy makers the world over. We see here that a succession of strategies, tactics, policies, instruments, tools, incentives, subsidies, inducements, rewards, penalties, objectives, goals, and “fixes” was tried—all with the best of intentions. However, they all failed to bring lasting clarity and consistency for several reasons.

First, and most obviously, over a 40-year period, the specific participants in the process—the actual individuals

whose views and interests were brought to bear—were continually changing through the normal demographic transition of aging and young people entering the scene. Because governance implies allowing various interests and voices to participate in policy formulation, such transitions must be accommodated. In addition to this demographic turnover, the ever-changing cast of participants—industry, scientists, interested citizens, and the politicians watching and influencing the process unfold—were constantly revising their views about what they wanted to achieve as they interacted with a dynamic cohort of participants. This revising necessarily follows from the fact that all participants were unsure of what they “wanted” until they were able to learn (to realize) what they might be able to have. This reality teaches us that all public policy is about learning what is possible (Bromley, 2006). And this experience in practical fisheries policy teaches us that the process of learning—of coming to understand what can be achieved—offers the explanation as to why “management” is so problematic (Bromley, 2006). After all, “management” presumes a known and reasonably stable set of goals and objective to be pursued.

However, the more important problem—alluded to immediately above—is that the necessary learning and exploration at the heart of crafting new public policy is confounded by the fact that the participants in that process *are themselves changed* by their engagement with the process. This reality can be understood with the aid of the conceptual model of Deweyan *trying and undergoing*,

which is elaborated in the opening quote of this section. The lessons learned here, informed by the concepts of *trying* and *undergoing*, apply to all coastal states searching for coherent governance of their fisheries.

To summarize, we have shown that it is a mistake to assume that fisheries policy is found (or created) and then all is settled. One cannot assume that the policy process pertinent to a dynamic biological resource—under commercial exploitation by an equally dynamic socioeconomic system—somehow arrives at the end of history. All policy reforms are merely first steps on the way somewhere. To be sure where, exactly, the process will end is impossible because there is no “end.” This stark reality is rendered inevitable by what Dewey calls the process of *undergoing* that necessarily unsettles participants and forces them to keep searching as the natural world presents its inevitable feedback. This process is confounded by the fundamental problem of human choice. Specifically, actions that can still be chosen or rejected on the basis of their plausible implications for the future have no objective outcomes associated with those available actions. The only outcomes that such actions can have merely exist in the mind—the imagination—of the ever-changing cast of decision makers (Bromley, 2006).

Moreover, we have documented the Deweyan conjecture that when a particular activity is “continued into the undergoing of consequences,” that very change—a new fisheries governance regime—“is reflected back into a change made in us,” those who launched the change. Notice what Dewey implies by this flux. Humans make choices and undertake actions that, when followed through, require that we undergo specific yet unknown consequences. *But those consequences are reflected back in the form of changes made in us.* Those changes do not simply bounce off us—they become part of us. We learn something, and we are therefore changed by that learning. After all, is that not what learning entails—a change in the learner? As we are changed, our ideas about created imaginings in the future are necessarily changed. Policy is forever changing because participants in the evolving system are themselves always changing. Once a policy experiment has been allowed to run its course, participants in that sector both learned and are changed by the feedbacks from the system they have been redesigning. Humans come to learn what we want by a continual process of learning about what we might be able to have (Bromley, 2006, 2016). This process has been particularly problematic in the Faroe Islands because many of the details of fishery policy are actually made by members of the Parliament—and those individuals are themselves changing over time. The goals of policy change as the participants who must be satisfied by new policies are themselves changing.

Finally, we have reinforced the idea that the quest for coherent *management* is a problematic conceit that other writers have also documented (Ludwig, 2001; Degnbol et al., 2006; Jentoft, 2006; Johnsen, 2014). In the Faroe Islands, the Parliament (*Logting*) is a unicameral body consisting of just 33 members—about the size of an average academic department at a major university. The current

body, constituted September 14, 2018, consists of three small parties forming the government (with 17 seats) and four small parties forming the opposition (with 16 seats). The largest single party holds eight seats, with two other parties holding seven seats each (one in the government and one in opposition). A fourth party holds six seats. This political reality has been a recipe for the serial cycling of various ideas about desired policy goals and instruments. When a concentrated and economically dominant industry is present, this policy instability is multiplied. But that is not the decisive explanation for this ongoing saga.

To repeat our hypothesis, the fundamental lesson for fisheries policy is straightforward—public policy is a continual process of “trying and undergoing.” The various participants cannot be sure what they want until they learn about what they might be able to have. And then they rarely like that result as much as they imagined they might. The process goes on—as it must.

Data accessibility statement

All data are in the public domain maintained by the Ministry of Fisheries of the Faroe Islands.

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The authors declare that they have no conflict of interest.

Author contributions

Contributed to the article: HE.

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