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User Rights in the Fisheries and Salmon-Farming of the Faroe Islands*

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User rights in the fisheries and salmon-farming of the Faroe Islands☆

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ABSTRACT

This paper focuses on the user rights regimes that have governed access to the marine resources of the Faroe Islands, which in the case of the fisheries are primarily fish stocks, and, in the case of salmon farming, primarily clean and healthy water masses. Examining the application of different user rights arrangements, we were able to observe a gradual improvement in the economic efficiency of the production activity for salmon farming, where strong operating exclusivity played a pivotal role in strengthening user rights. Similarly, the pelagic fisheries and the distant-waters demersal fisheries governed by ITQs have witnessed improved economic efficiency, although the strength of their user rights weakened over the last decade because of diminishing exclusivity and security of their rights. At the same time, the coastal demersal fisheries governed by ITEs continued to be marked by overcapacity and low fish stock levels despite the presence of strong exclusivity. These findings indicate that the design of user rights must also relate to specific management differences in marine resource exploitation under consideration.

Overview

- The Guiding Hypothesis
- The four main property rights attributes that impact the quality of user rights
- Fishery (ITE & ITQ) & Salmon Farming Economic Performance 1996 - 2022
- FO Government direct income from Fisheries & Salmon Farming
- Final Assessment

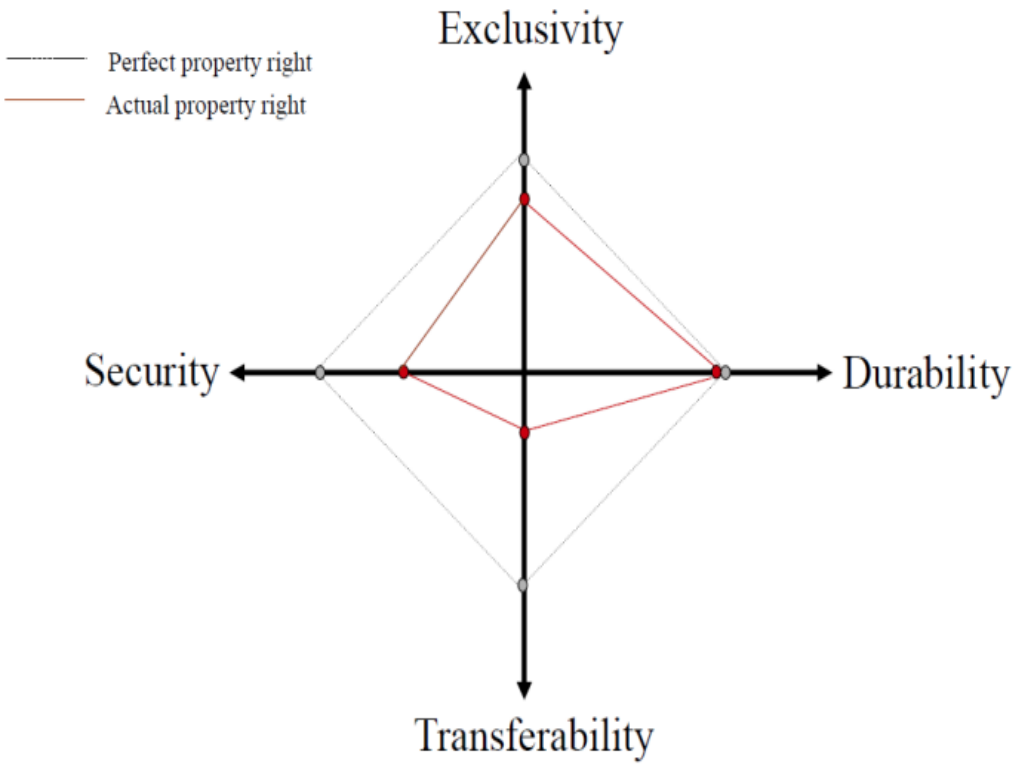
The Hypothesis

- The guiding hypothesis is that **stronger user rights** will lead to more economically **efficient** outcomes.

- We document and compare the economic outcomes of the fisheries and salmon aquaculture under varying strengths of user rights regimes.

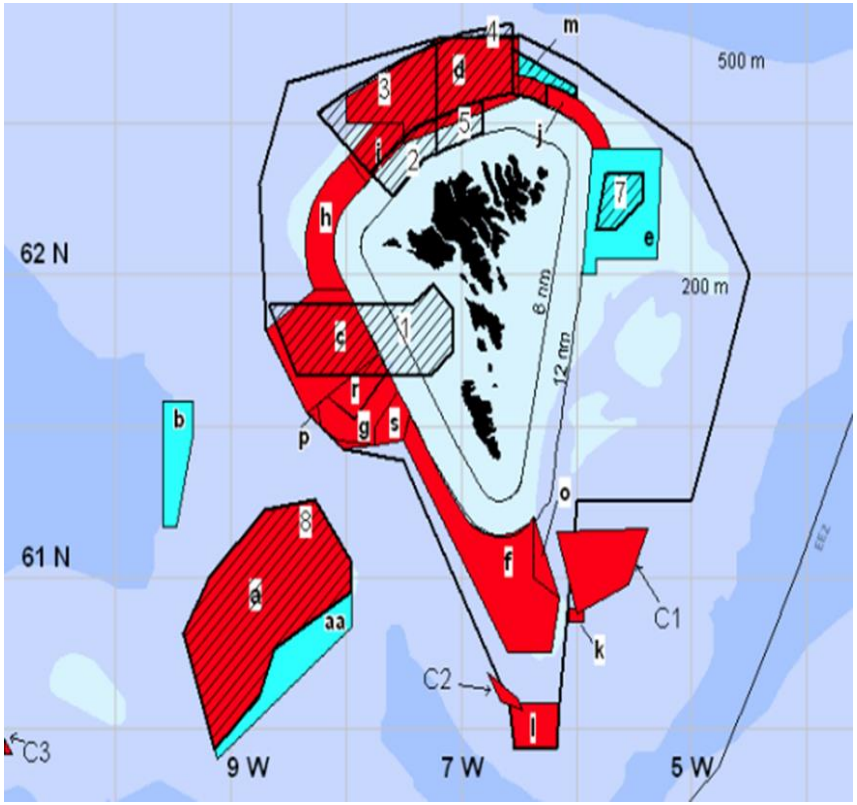
The four main property rights attributes that impact the **quality** of user rights

1. Exclusivity
2. Security
3. Durability
4. Transferability

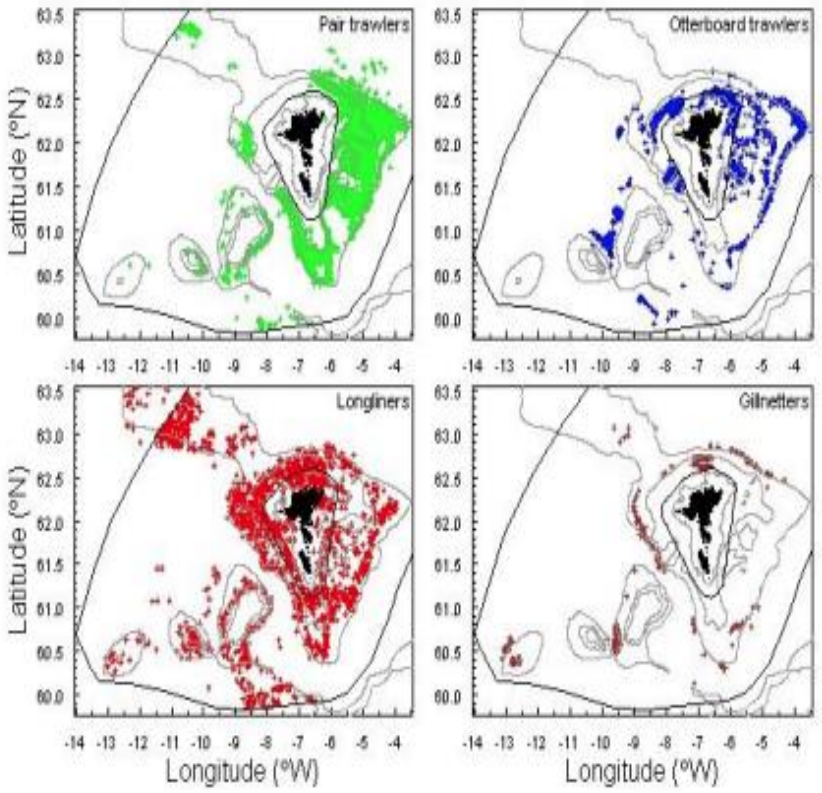


The Demersal Fisheries in FO EEZ - TAE

1-7 Spawning closures &
a-s Temporal exclusion zones for Trawling



Geographical Exclusion



Exclusivity & Transferability - Fishery

Stock Management	Fleet Classifications	Number of Ships end 2022	Maximum Ownership	2023 allocations	
				TAE Fishing Days	TAC '000 tonnes
TAE (ITEs)	Group 2. Stern Trawlers (Single & Pair >500hp)*	20	25%	6788	
TAE (ITEs)	Group 3. Longliners over 110 GRT	15	20%	1979	
TAE (ITEs)	Group 4. Coastal vessels between 15 and 110 GRT	13	20%	1685	
TAE (ITEs)	Group 4T. Coastal vessels >40GRT but <500hp using trawl	7	30%	1358	
TAE (ITEs)	Group 5. Coastal vessels below 15 GRT	297	20%	9456	
TAC (ITQs)	Others* *	8	20%		NA
TAC (ITQs)	Distant Waters Factory Trawlers	4	35%		21****
TAC (ITQs)	Pelagic Fleet***	17	25%		771*****

* Group 1. Deep sea single trawlers moved to group 2 at the end of 2011.

** Includes Gill netters, Dredgers, Shrimp trawlers and Pot vessels. TAC not available for 2023.

*** Includes both Purse seiners and pelagic trawlers.

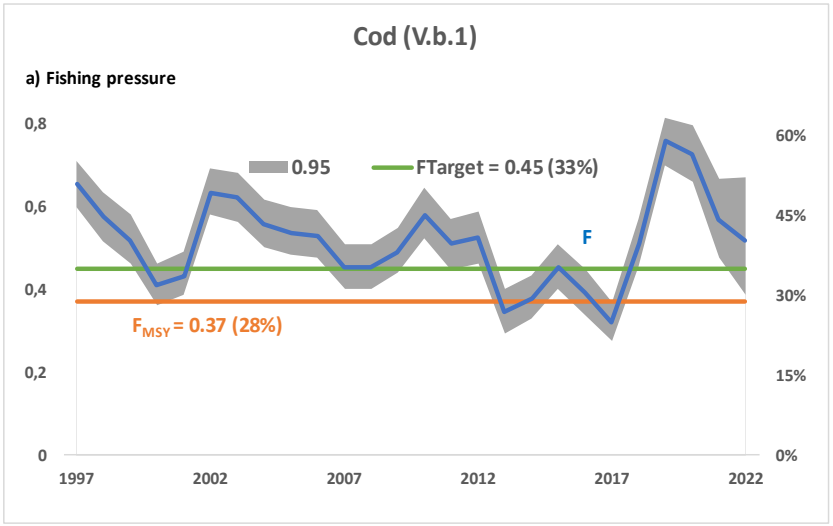
**** Includes both Norwegian and Russian EEZ in the Barents sea. (Acts 156/2022 & 154/2022)

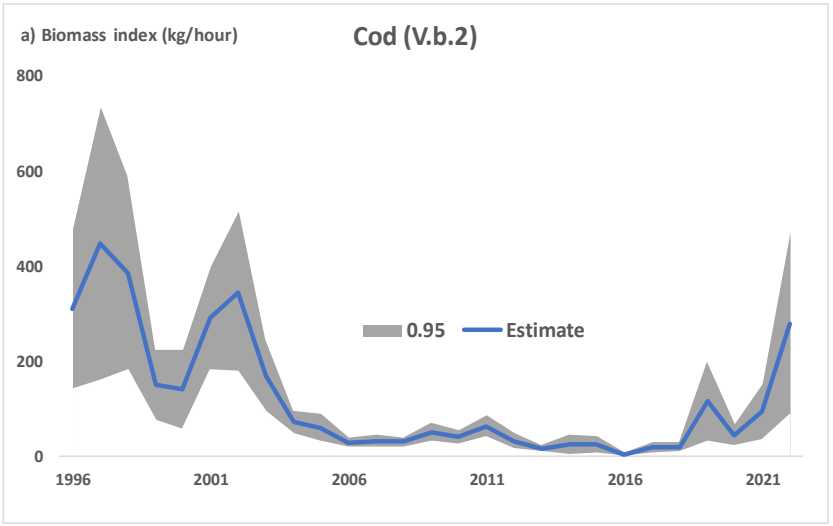
***** Mackerel, Herring, Blue Whiting and Capelin. (Acts 166/2022, 165/2022, 67/2023, 162/2022 and 4/2023)

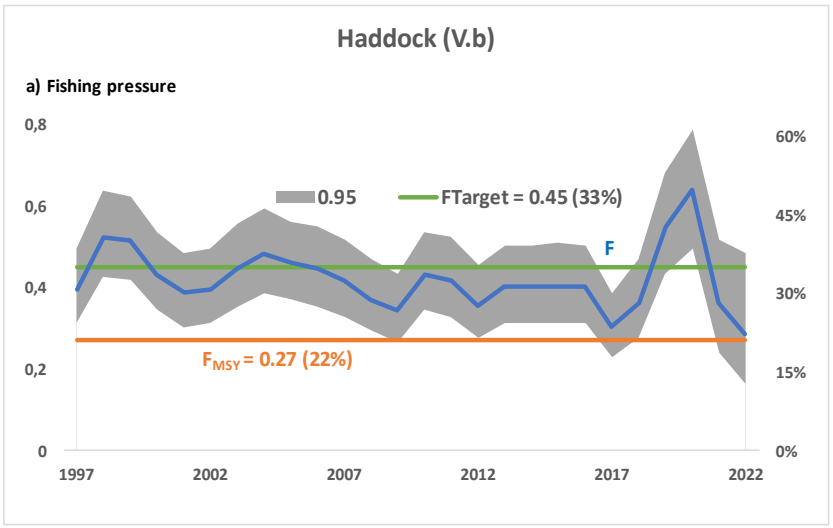
Total Avaliable Effort (TAE), Individual Transferable Efforts (ITEs), Total Available Catches (TAC), Individual Transferable Quotas (ITQs)

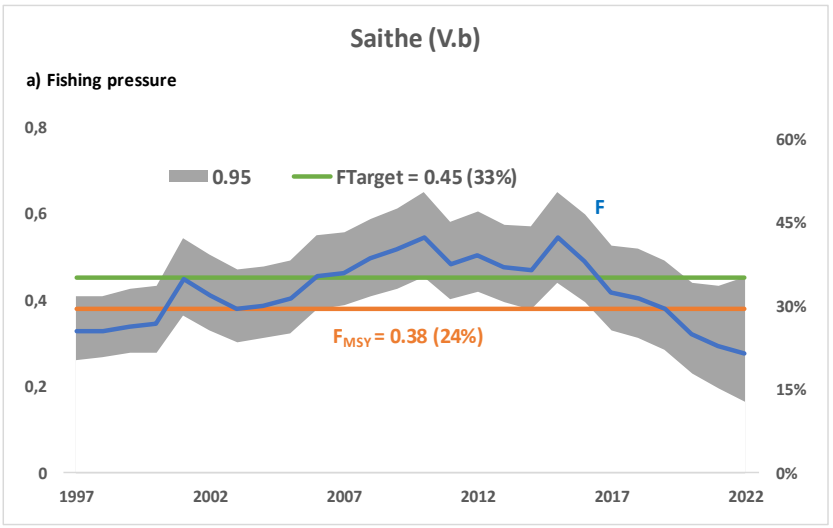
Horsepower (hp), Gross Register Tonnage (GRT)

Fishing Pressure - TAE



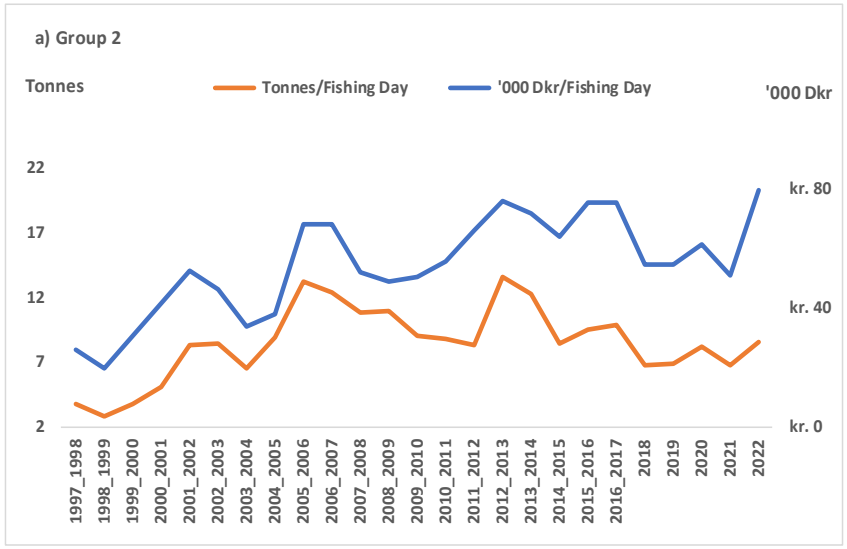


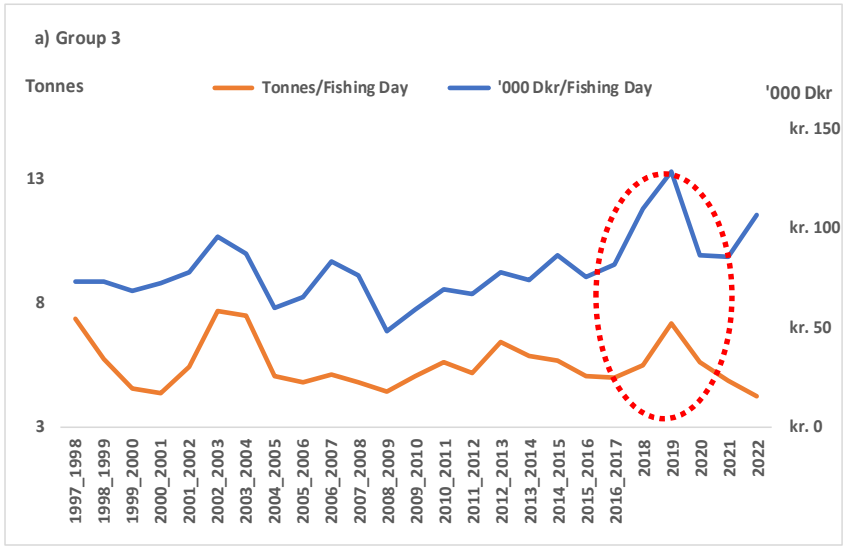


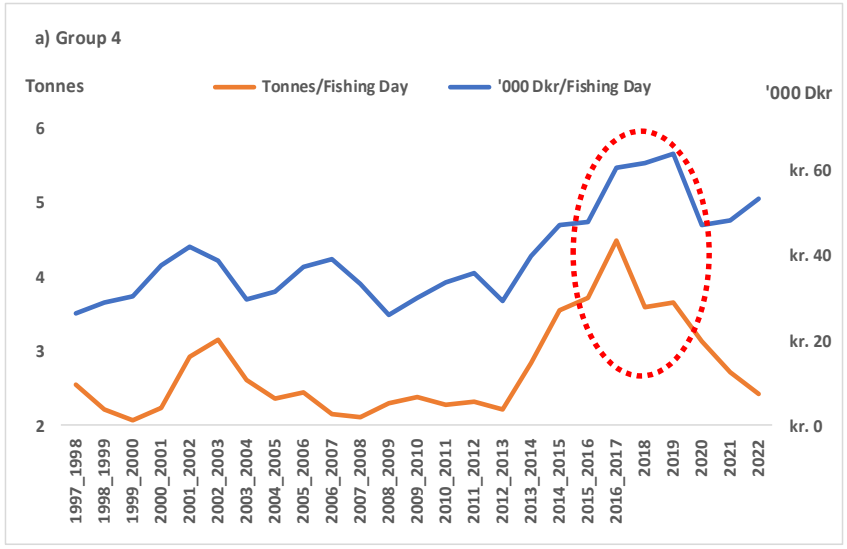


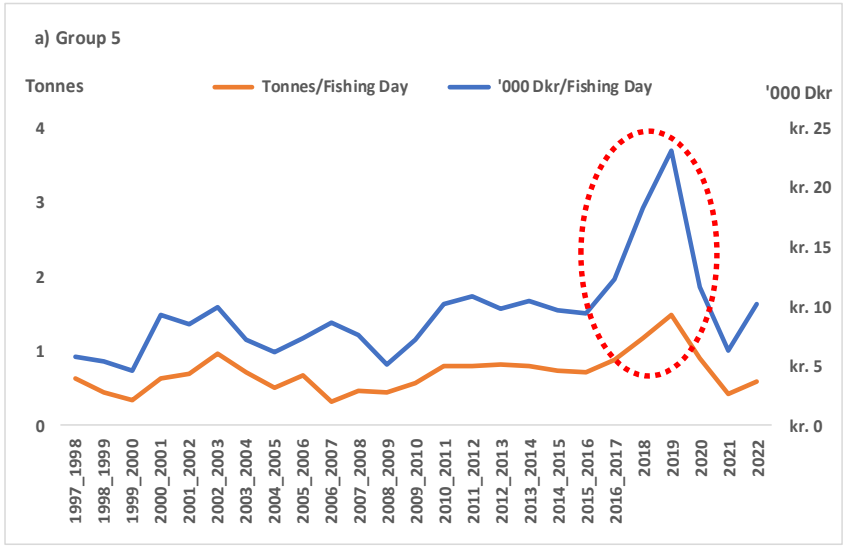
(In)appropriate Fishing Effort?

Natural Factors (Migration) 2019 resulted in a large fishing pressure

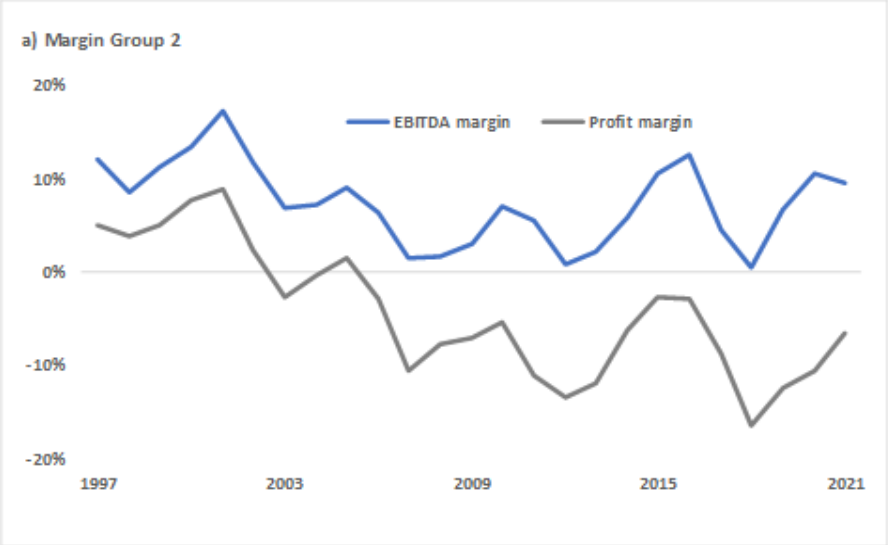


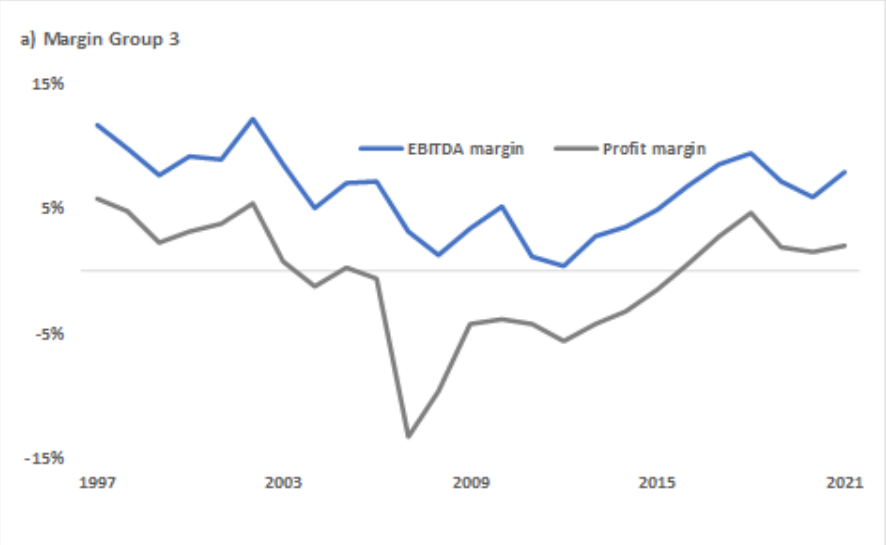


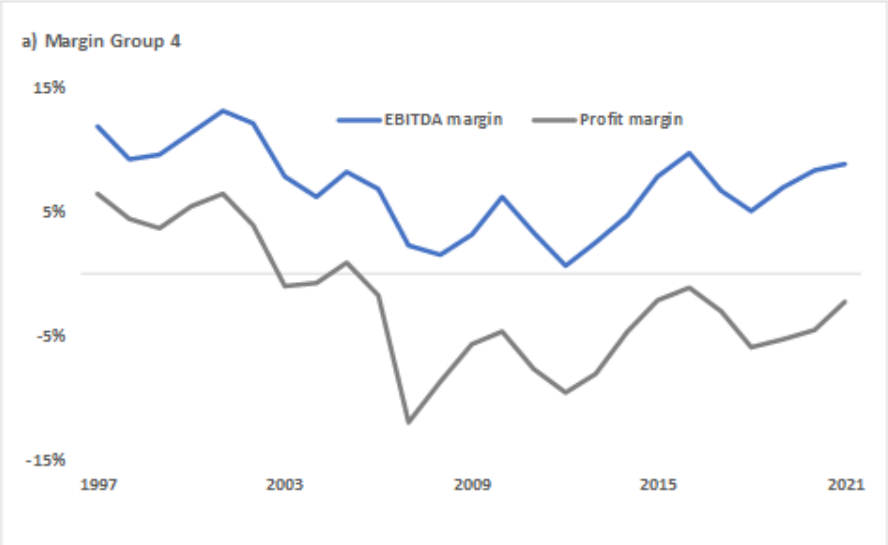


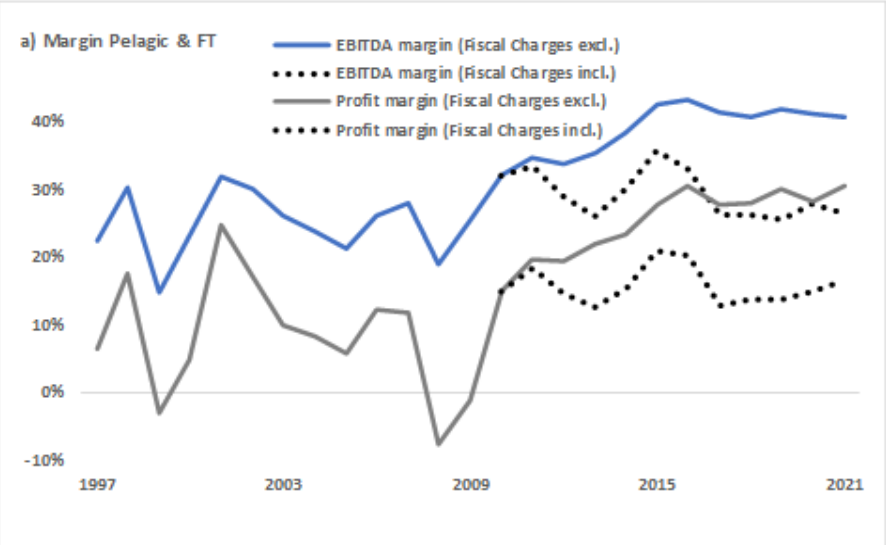


Economic Performance – Fishery ITEs vs. ITQs









Weakened Exclusivity – Fishery

	Mackerel Dkr/kg	as % of landed price	Herring Dkr/kg	as % of landed price	Blue Whiting Dkr/kg	as % of landed price	Capelin Dkr/kg	as % of landed price	Distant-Waters Dkr/kg	as % of landed price	Act of Faroese Parliament	Fish Auctions Dkr Million
2012	0,75	11,23%									No 73/2012	
2013	0,75	14,01%	0,35	9,05%							No 50/2013	
2014	1,00	16,74%	0,50	9,32%							No 154/2013 & No 77/2014	
2015	1,00	16,33%	0,50	8,18%	0,20	10,48%					No 159/2015 & No 119/2014	
2016	1,00	13,79%	0,75	10,31%	0,20	9,27%					No 30/2016	59,80
2017	1,00	13,93%	0,75	20,16%	0,20	13,91%					No 150/2016	135,20
2018	1,50	18,78%	0,60	14,88%	0,25	14,39%					No 172/2017	143,39
2019	1,50	17,36%	0,60	14,15%	0,25	12,35%					No 172/2017	221,67
2020	1,50	18,30%	0,60	14,29%	0,25	12,12%			0,50	1,51%	No 172/2017	72,56
2021	1,50	21,31%	0,60	11,35%	0,25	13,30%			0,50	1,41%	No 172/2017	72,39
2022 - July 2023	1,23	18,62%	0,89	17,38%	0,31	13,94%			2,36	5,00%	No 111/2022 & No 77/2021	62,50
Averages	1,16	**16%**	0,61	**13%**	0,24	**12,5%**			1,12	**2,6%**		**109,6**
Aug 2023 - >>2026*	1,77	**23%**	0,85	**21%**	0,36	**18,8%**	1,98	**26,9%**	2,36	**5,0%**	No 76/2023	60**

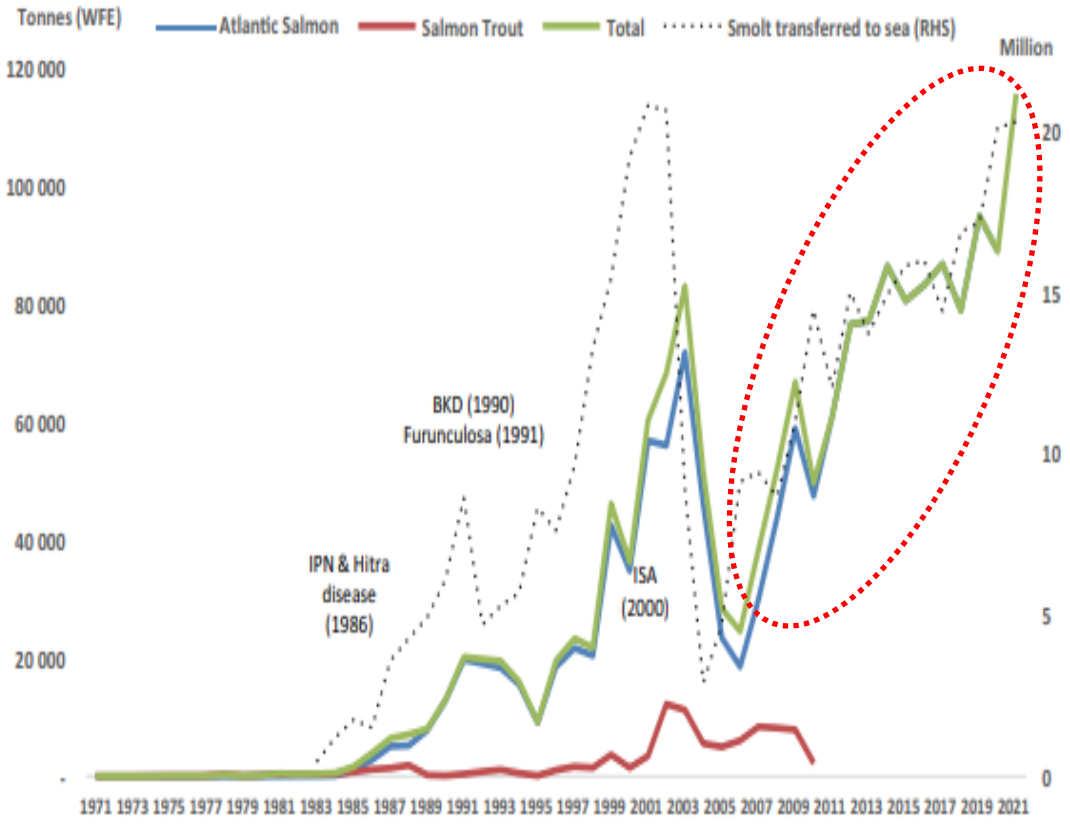
*Calculations' Base Period 2018-2022

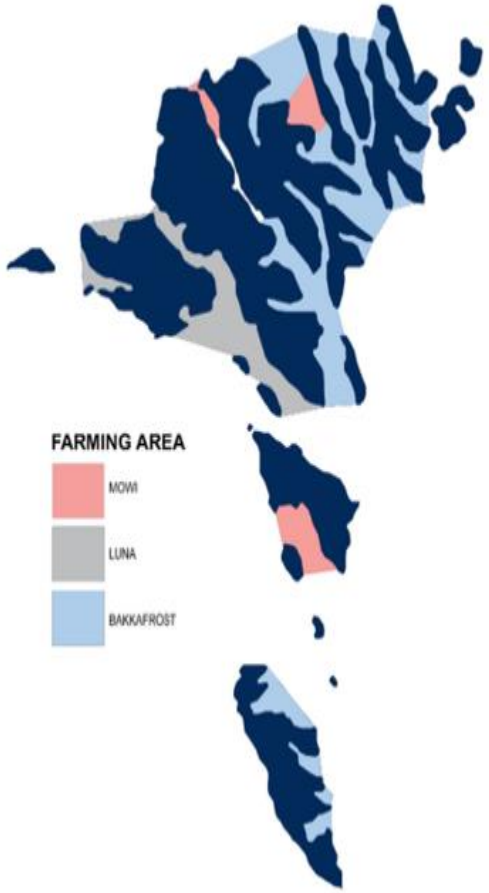
**Gjaldstovan

Exclusivity – Salmon Farming

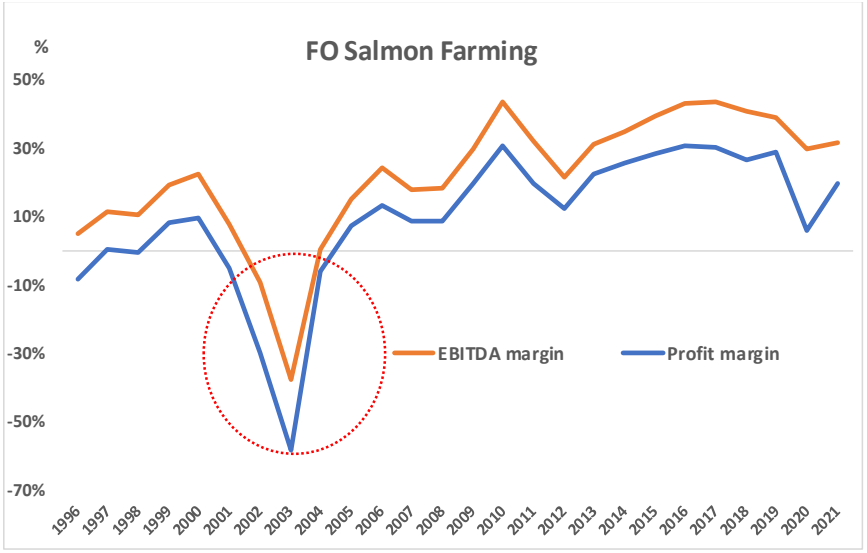
One Fjord = One Company

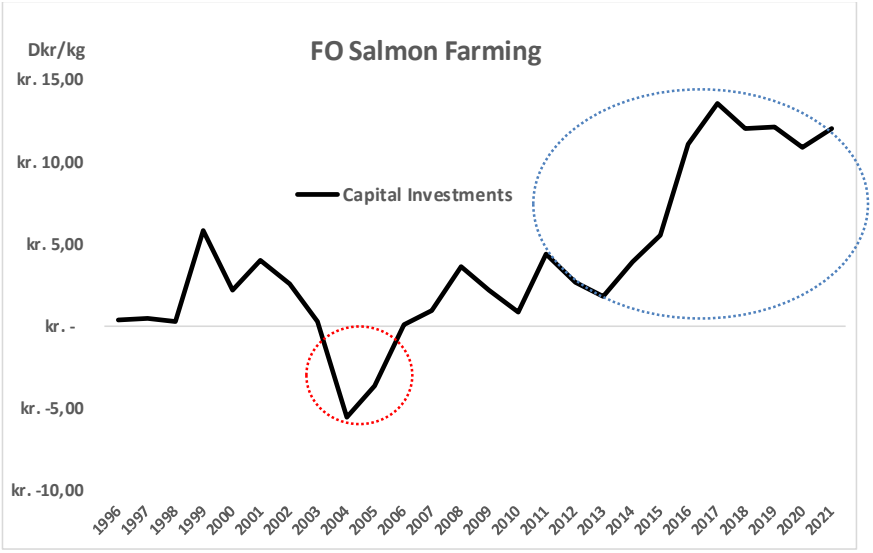
Internalized Externalities – Conditional Duration

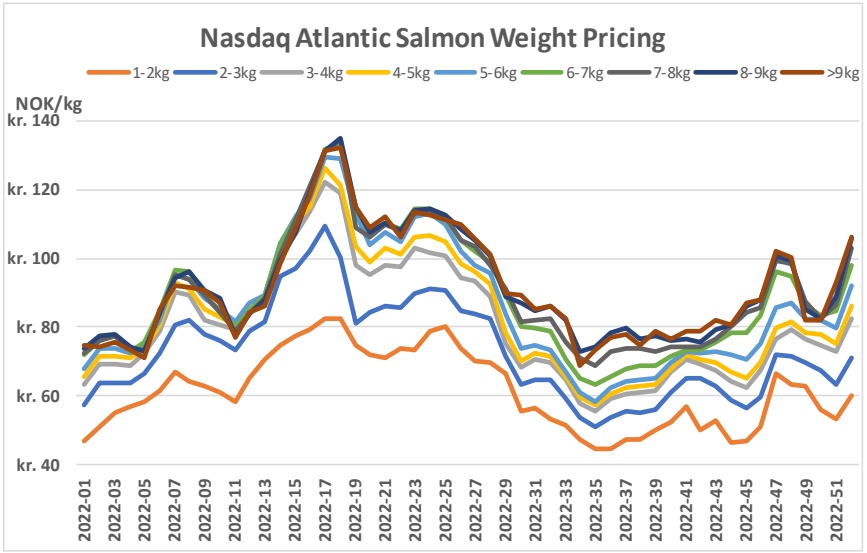


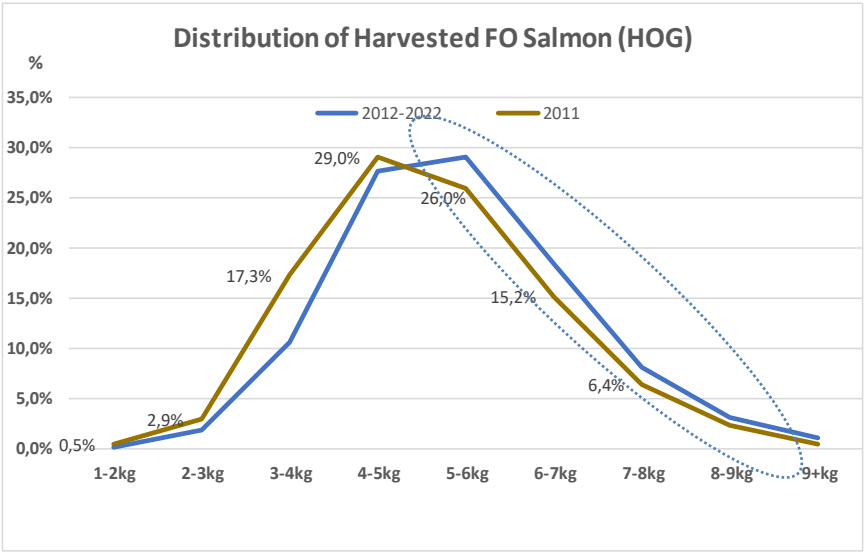


Economic Performance - Salmon Farming

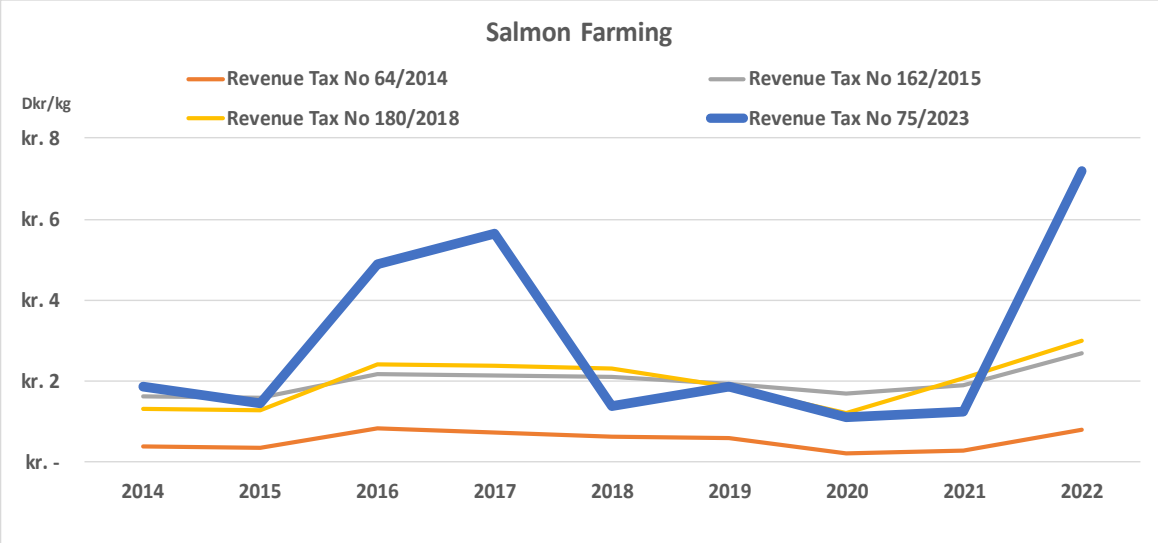


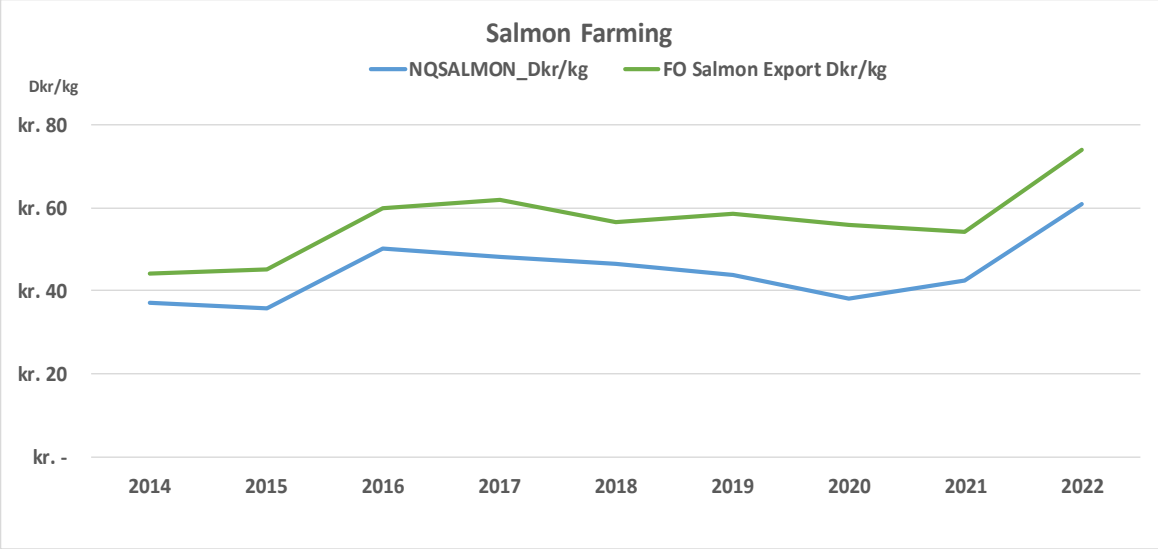






Weakened Exclusivity – Salmon Farming





Valid from 1st Jan 2014

Revenue Tax No 64_May 2014	
Revenue Tax	0,5%
Special Resource Tax	4,5%

Valid from 1st Jan 2016

Revenue Tax No 162_Dec 2015	
<23kr	0,5%
23-27kr	2,5%
>27kr	4,5%

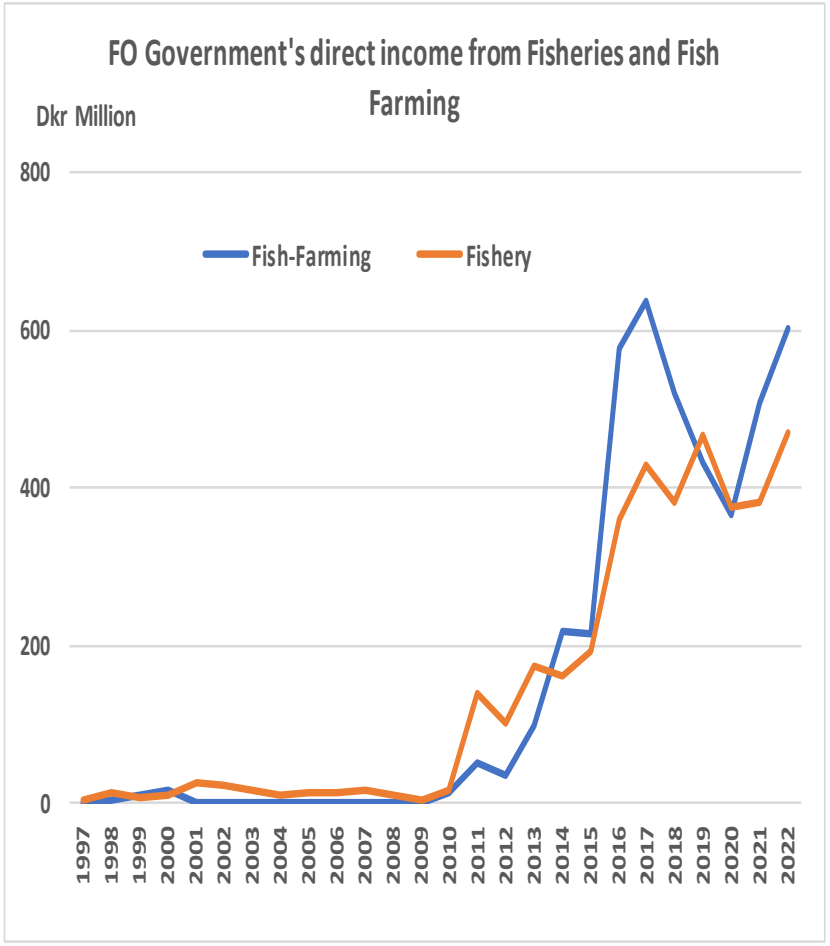
Valid from 1st Jan 2019

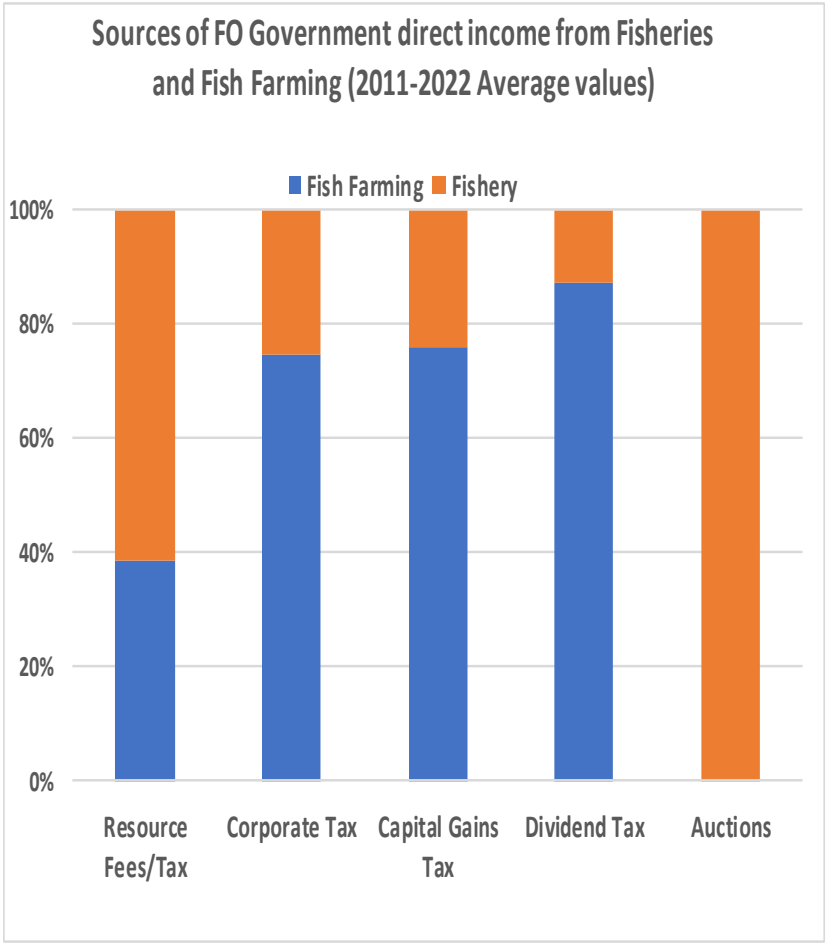
Revenue Tax No 180_Dec 2018	
<32kr	0,5%
32-36kr	2,5%
>36kr	5,0%

Valid from 1st Aug 2023

Revenue Tax No 75_Jun 2023	
P < C	0,5%
C ≤ P < C +Dkr5	2,5%
C +Dkr 5 ≤ P < C +Dkr 15	5,0%
C +Dkr 15 ≤ P < C +Dkr 20	7,5%
C +Dkr 20 ≤ P < C +Dkr 25	10,0%
C +Dkr 25 ≤ P < C +Dkr 30	12,5%
C +Dkr 30 ≤ P < C +Dkr 35	15,0%
C +Dkr 35 ≤ P < C +Dkr 40	17,5%
P ≥ C +Dkr 40	20,0%

FO Government Direct income from Fisheries & Salmon Farming





Conclusion – Salmon Farming (License)

1. **Initially weak user rights in Salmon farming brought infections and/or pollution from other sites.**

2. **Later, various disease-prevention and environmental regulations on salmon farming activity strengthened the user rights embedded in the site production licenses and conditional duration resulting in increased economic efficiency.**

3. **Resource tax charges reduced the exclusivity of user rights in salmon farming although the impact of such fiscal charges seems to be neutral until 2022 given the industry's persistent investment programs.**

4. **Bakkafrost's VAP 2023 possible closure 2023**

Conclusion – Pelagic Sector (ITQs)

1. **In the pelagic sector strong exclusivity improved efficiency and led to the realization of resource rents. However, over the last decade, user rights have been weakened by many factors simultaneously**.

2. **Since the pelagic fleet has been governed by the international fishing agreement, changes in migration patterns affect the structure of the cooperative agreement among coastal states. The Faroese pelagic fleet has been entirely excluded from the most valuable mackerel fishing in the UK EEZ since Brexit.**

3. **The security of the title has been further weakened by political processes of mackerel quotas allocations to domestic stern trawlers and issuing development catch licenses to newcomers.**

4. **Both exclusivity and duration were diminished by the introduction of resource usage charges and auctions**.

Conclusion – Distant Water Demersal Fisheries (ITQs)

1. **This segment's exclusivity and duration have also weakened due to the employment of auctions and resource payments.**

2. **Ongoing geopolitical tensions with Russia following the war with Ukraine pose user rights security risk over mutual quota allocation for the distant-water fishing fleet.**

Conclusion – FO EEZ Demersal Fisheries (TAE)

1. **Despite the creation of EEZ, Faroese domestic fisheries policy continued to mirror an open-access regime supported by subsidies that contributed to fleet overcapacity until the collapse of the main fishing stocks in the early 1990s**

2. **A comprehensive management system (ITEs) produced strong exclusivity by creating clear distinction among fishing fleet groups and their spatial boundaries, further supplemented with gear restrictions.**

3. **ITEs were not able to address the unresolved issue of fleet overcapacity and control for technological improvements that generated higher fishing mortality and contributed to lower profitability.**

4. **This shows that the exclusivity attribute might not be a decisive factor in solving the fishery problem, like in the case of salmon farming.**

Takk Fyri