

Sensitivity analyses for a model for Greenlandic halibut: Part 1

In this appendix, we present a number of sensitivity analyses regarding our model for Greenlandic halibut.

A.1. Scenario 1.

The results of the sensitivity analyses in scenario 1 are reported in Table A.1-A.3.

Table A.1: Sensitivity analysis for the parameters in the resource restriction, scenario 1.

Table A.2: Sensitivity analysis for the high seas economic parameters, scenario 1.

Table A.3: Sensitivity analysis for the coastal economic parameters, scenario 1.

From Table A.1-A.3, we obtain the following numerical comparative static results:

- A. An increase (decrease) in the carrying capacity and intrinsic growth rate will: a. Increase (decrease) the optimal high seas harvest and profit; b. Increase (decrease) the optimal coastal harvest and profit; c. Increase (decrease) the optimal stock size.
- B. An increase (decrease) in the scaling factor for other fishing nations will: a. Decrease (increase) the optimal high seas harvest and profit; b. Increase (decrease) the optimal coastal harvest and profit; c. Increase (decrease) the optimal stock size.
- C. An increase (decrease) in the high seas cost parameter and a decrease (increase) in the high seas price will: a. Decrease (increase) the optimal high seas harvest and profit; b. Increase (decrease) the optimal coastal harvest and profit; c. Increase (decrease) the optimal stock size.
- D. An increase (decrease) in the coastal cost parameter and a decrease (increase) in the coastal price will: a. Decrease (increase) the optimal coastal harvest and profit; b. Increase (decrease) the optimal high seas harvest and profit; c. Increase (decrease) the optimal stock size.

Concerning the robustness of our results, we have the following:

- A. In the benchmark case, the optimal coastal harvest and profit are higher than the optimal high seas harvest and profit. From Table A.1-A.3, this result does not hold for the lower bound of the coastal price.

A.2. Scenario 2.

The results of the sensitivity analyses in scenario 2 are reported in Table A.4-A.7.

Table A.4: Sensitivity analysis for the parameters in the high seas resource restriction, scenario 2.

Table A.5: Sensitivity analysis for the parameters in the coastal resource restriction, scenario 2.

Table A.6: Sensitivity analysis for the high seas economic parameters, scenario 2.

Table A.7: Sensitivity analysis for the coastal economic parameters, scenario 2.

From Table A.4-A.7, we obtain the following numerical comparative static results:

- A. A decrease (increase) in the high seas carrying capacity and intrinsic growth rate will: a. Decrease (increase) the optimal high seas harvest and profit; b. Increase (decrease) the optimal coastal harvest and profit; c. Decrease (increase) the optimal high seas stock size; d. Decrease (increase) the optimal coastal stock size.
- B. A decrease (increase) in the coastal carrying capacity and intrinsic growth rate will: a. Increase (decrease) the optimal high seas harvest and profit; b. Decrease (increase) the optimal coastal harvest and profit; c. Decrease (increase) the optimal coastal seas stock size; d. Decrease (increase) the optimal high seas stock size.
- C. An increase (decrease) in the scaling factor for other fishing nations will: a. Increase (decrease) the optimal high seas harvest; b. Decrease (increase) the optimal high seas profit, c. Decrease (increase) the optimal coastal harvest and profit; d. Decrease (increase) the optimal high seas stock size: e. Increase (decrease) the optimal coastal stock size.
- D. An increase (decrease) in the migration parameter will: a. Decrease (increase) the optimal high seas harvest and profit; b. Decrease (increase) the optimal high seas stock size: c. Increase (decrease) the optimal coastal harvest and profit; d. Increase (decrease) the optimal coastal stock size.
- E. An increase (decrease) in the high seas cost parameter and decrease (increase) in the high seas price will: a. Decrease (increase) the optimal high seas harvest and profit; b. Decrease (increase) the optimal coastal stock size; c. Increase (decrease) the optimal coastal harvest and profit; d. Increase (decrease) the optimal high seas stock size.
- F. An increase (decrease) in the coastal cost parameter and decrease (increase) in the coastal price will: a. Decrease (increase) the optimal coastal harvest and profit; b. Decrease (increase) the optimal high seas stock size; c. Increase (decrease) the optimal high seas harvest and profit; d. Increase (decrease) the optimal coastal stock size.

Concerning the robustness of our results, we have the following:

- A. In the benchmark case, the optimal high seas harvest and profit are higher than the optimal coastal harvest and profit. From Table A.4-A.7, this result does not hold for the lower bound of the high seas price and the upper bound of the coastal price.
- B. In the benchmark case, the optimal high seas stock size is higher than the optimal coastal stock size. From Table A.4-A.7, this result holds for all parameter variations.

A.3. Scenario 3.

The results of the sensitivity analyses in scenario 3 are reported in Table A.8-A.11.

Table A.8: Sensitivity analysis for the parameters in the resource restriction, scenario 3.

Table A.9: Sensitivity analysis for the high seas economic parameters, scenario 3.

Table A.10: Sensitivity analysis for the coastal economic parameters, scenario 3.

Table A.11: Sensitivity analysis for the land-based economic parameters, scenario 3.

From Table A.8-A.11, we obtain the following numerical comparative static results:

- A. An increase (decrease) in the carrying capacity and intrinsic growth rate will: a. Increase (decrease) the optimal high seas harvest and profit; b. Increase (decrease) the optimal

- coastal harvest and profit; c. Increase (decrease) the optimal stock size; d. Decrease (increase) the optimal land-based profit.
- B. An increase (decrease) in the scaling factor for other fishing nations will: a. Decrease (increase) the optimal high seas harvest and profit; b. Increase (decrease) the optimal coastal harvest and profit; c. Decrease (increase) the optimal stock size; d. Decrease (increase) the optimal land-based profit.
- C. An increase (decrease) in the high seas cost parameter and a decrease (increase) in the high seas price will: a. Decrease (increase) the optimal high seas harvest and profit; b. Increase (decrease) the optimal coastal harvest and profit; c. Increase the optimal stock size; d. Decrease (increase) the optimal land-based profit.
- D. An increase (decrease) in the coastal cost parameter and a decrease (increase) in the coastal price will: a. Decrease (increase) the optimal coastal harvest and profit; b. Increase (decrease) the optimal high seas harvest and profit; c. Increase the optimal stock size; d. Increase (decrease) the optimal land-based profit.
- E. An increase (decrease) in the land-based cost parameter, a decrease (increase) in the land-based price, and an increase (decrease) in the share of halibut that is lost in land-based processing will: a. Increase (decrease) the optimal high seas harvest and profit; b. Decrease (increase) the optimal coastal harvest and profit; c. Increase (decrease) the optimal stock size; d. Decrease (increase) the optimal land-based profit

Concerning the robustness of our results, we have the following:

- A. In the benchmark case, the optimal high seas harvest is higher than the optimal coastal harvest while the optimal coastal profit is higher than the optimal high seas profit. From Table A.8-A.11, this result does not hold for the lower bound of the carrying capacity, the lower bound for the intrinsic growth rate, the lower bound for the high seas cost parameter, the upper bound for the high seas price, the lower bound for the coastal price, the upper bound for the land-based cost parameter, the lower bound for the land-based price, and the upper bound for the processing loss.
- B. In the benchmark case, the optimal land-based profit is lower than the optimal high seas and coastal profit. From Table A.8-A.11, this result does not hold for the lower bound of the carrying capacity, the lower bound for the coastal price, and the lower bound for the land-based costs.

A.4. Scenario 4.

The results of the sensitivity analyses in scenario 4 are reported in Table A.12-A.16.

Table A.12: Sensitivity analysis for the parameters in the high seas resource restriction, scenario 4.

Table A.13: Sensitivity analysis for the parameters in the coastal resource restriction, scenario 4.

Table A.14: Sensitivity analysis for the high seas economic parameters, scenario 4.

Table A.15: Sensitivity analysis for the coastal economic parameters, scenario 4.

Table A.16: Sensitivity analysis for the land-based economic parameters, scenario 4.

From Table A.12-A.16, we obtain the following numerical comparative static results:

- A. An increase (decrease) in the high seas carrying capacity and intrinsic growth rate will: a. Increase (decrease) the optimal high seas harvest and profit; b. Increase (decrease) the optimal coastal harvest and profit; c. Increase (decrease) the optimal high seas stock size; d. Decrease (increase) the optimal coastal stock size; e. Increase (decrease) the optimal land-based profit.
- B. An increase (decrease) in the coastal carrying capacity and intrinsic growth rate will: a. Increase (decrease) the optimal high seas harvest and profit; b. Increase (decrease) the optimal coastal harvest and profit; c. Increase (decrease) the optimal coastal seas stock size; d. Decrease (increase) the optimal high seas stock size; e. Increase (decrease) the optimal land-based profit.
- C. An increase (decrease) in the scaling factor for other fishing nations will: a. Increase (decrease) the optimal high seas harvest; b. Decrease (increase) the optimal high seas profit; c. Decrease (increase) the optimal coastal harvest and profit; d. Decrease (increase) the optimal high seas stock size; e. Decrease (increase) the optimal coastal stock size; f. Decrease (increase) the optimal land-based profit
- D. An increase (decrease) in the migration parameter will: a. Decrease (increase) the optimal high seas harvest and profit; b. Decrease (increase) the optimal high seas stock size; c. Increase (decrease) the optimal coastal harvest and profit; d. Increase (decrease) the optimal coastal stock size; e. Increase (decrease) the optimal land-based profit.
- E. An increase (decrease) in the high seas cost parameter and decrease (increase) in the high seas price will: a. Decrease (increase) the optimal high seas harvest and profit; b. Decrease (increase) the optimal coastal stock size; c. Increase (decrease) the optimal coastal harvest and profit; d. Increase (decrease) the optimal high seas stock size; e. Increase (decrease) the optimal land-based profit
- F. An increase (decrease) in the coastal cost parameter and decrease (increase) in the coastal price will: a. Decrease (increase) the optimal coastal harvest and profit; b. Decrease (increase) the optimal high seas stock size; c. Increase (decrease) the optimal high seas harvest and profit; d. Increase (decrease) the optimal coastal stock size; e. Decrease (increase) the optimal land-based profit.
- G. An increase (decrease) in the land-based cost parameter, a decrease (increase) in the land-based price, and an increase (decrease) in the share of halibut that is lost in land-based processing will: a. Increase (decrease) the optimal high seas harvest and profit; b. Decrease (increase) the optimal coastal harvest and profit; c. Increase (decrease) the optimal high seas stock size; d. Increase (decrease) the optimal coastal stock size; e. Decrease (increase) the optimal land-based profit

Concerning the robustness of our results, we have the following:

- A. In the benchmark case, the optimal high seas harvest and profit are higher than the optimal coastal harvest and profit. From Table A.12-A.16, this result does not hold for the lower bound for the high seas carrying capacity, the upper bound for the coastal carrying capacity, the lower bound of the high seas price, and the upper bound for the coastal price.
- B. In the benchmark case, the optimal land-based profit is lower than the optimal high seas and coastal profit. From Table A.12-A.16, this result does not hold for the lower bound of the high seas price and the upper bound for the coastal price

C. In the benchmark case, the optimal high seas stock size is higher than the optimal coastal stock size. From Table A.12-A.16, this result holds for all parameter variations.

Table A.1: Sensitivity analysis for the parameters in the resource restriction, scenario 1.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
Carrying capacity	High seas harvest	Tons	148	240	443
	Greenland	Tons	88	143	264
	Other fishing nations	Tons	60	97	179
	Coastal Harvest	Tons	25,387	41,200	76,161
	Stock size	Tons	162,462	263,010	486,413
	Shadow price	Mill. DKK	0.0066	0.0066	0.0066
	High seas profit	Mill. DKK	0.0965	1.57	2.89
	Coastal profit	Mill. DKK	201.86	327.66	605.68
Intrinsic growth rate	High seas harvest	Tons	0	403	4,672
	Greenland	Tons	0	240	1,557
	Other fishing nations	Tons	0	163	3,116
	Coastal Harvest	Tons	20,869	41,200	54,003
	Stock size	Tons	251,026	263,010	269,035
	Shadow price	Mill. DKK	0.0079	0.0066	0.0058
	High seas profit	Mill. DKK	0	1.57	41.11
	Coastal profit	Mill. DKK	179.64	327.66	408.738
Scaling factor, other nations	High seas harvest	Tons	7,283	240	0
	Greenland	Tons	5,441	143	0
	Other fishing nations	Tons	1,842	97	0
	Coastal harvest	Tons	34,319	41,200	41,430
	Stock size	Tons	257,142	263,010	263,412
	Shadow price	Mill. DKK	0.070	0.0066	0.0065
	High seas profit	Mill. DKK	55.24	1.57	0
	Coastal profit	Mill. DKK	280.07	327.66	329.21

Table A.2: Sensitivity analysis for the high seas economic parameter, scenario 1.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
High seas cost parameter	High seas harvest	Tons	357	240	179
	Greenland	Tons	213	143	107
	Other fishing nations	Tons	144	97	72
	Coastal harvest	Tons	41,086	41,200	41,257
	Stock size	Tons	263,068	263,010	263,001
	Shadow price	Mill. DKK	0,0066	0.0066	0.0066
	High seas profit	Mill. DKK	2.34	1.57	1.17
	Coastal profit	Mill. DKK	326.88	327.66	328.04
High seas price	High seas harvest	Tons	0	240	15,280
	Greenland	Tons	0	143	11,497
	Other fishing nations	Tons	0	97	7,783
	Coastal harvest	Tons	41,429	41,200	22,528
	Stock size	Tons	264,266	263,010	262,068
	Shadow price	Mill. DKK	0.0065	0.0066	0.0066
	High seas profit	Mill. DKK	0	1.57	169.13
	Coastal profit	Mill. DKK	329.27	327.66	192.82

Table A.3: Sensitivity analysis for the coastal economic parameter, scenario 1.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
Coastal cost parameter	High seas harvest	Tons	0	240	6,721
	Greenland	Tons	0	143	4,008
	Other fishing nations	Tons	0	97	2,713
	Coastal harvest	Tons	41,737	41,200	34,601
	Stock size	Tons	251,027	263,010	267,413
	Shadow price	Mill. DKK	0.0079	0.0066	0.0059
	High seas profit	Mill. DKK	0	1.57	41.64
	Coastal profit	Mill. DKK	359.27	327.66	263.64
Coastal price	High seas harvest	Tons	27,449	240	0
	Greenland	Tons	16,368	143	0
	Other fishing nations	Tons	11,081	97	0
	Coastal harvest	Tons	13,869	41,200	41,663
	Stock size	Tons	270,675	263,010	255,423
	Shadow price	Mill. DKK	0.0038	0.0066	0.0111
	High seas profit	Mill. DKK	141.15	1.57	0
	Coastal profit	Mill. DKK	58.56	327.66	523.77

Table A.4: Sensitivity analysis for the parameters in the high seas resource restriction, scenario 2.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
High seas carrying capacity	High seas harvest	Tons	11,988	17,382	34,700
	Greenland	Tons	6,910	10,365	20,692
	Other fishing nations	Tons	4,678	7,017	14,008
	Coastal harvest	Tons	7,048	7,375	8,349
	High seas profit	Mill. DKK	57.56	86.34	172.30
	Coastal profit	Mill. DKK	56.66	61.00	67.80
	High seas stock size	Tons	62,919	94,114	108,032
	High seas shadow price	Mill. DKK	0.0036	0.0036	0.0036
	Coastal stock size	Tons	23,257	22,805	22,603
	Coastal shadow price	Mill. DKK	0.0093	0.0087	0.0082
	Migration	Tons	641	975	1,133
	High seas intrinsic growth rate	High seas harvest	Tons	8,598	17,382
Greenland		Tons	5,127	10,365	14,813
Other fishing nations		Tons	3,471	7,017	10,028
Coastal harvest		Tons	7,271	7,375	7,479
High seas profit		Mill. DKK	68.90	86.34	111.30
Coastal profit		Mill. DKK	60.34	61.00	61.66
High seas stock size		Tons	86,009	94,114	103,314
High seas shadow price		Mill. DKK	0.0049	0.0036	0.0024
Coastal stock size		Tons	23,740	22,805	22,924
Coastal shadow price		Mill. DKK	0.0085	0.0087	0.0089
Migration		Tons	860	975	1,068
Scaling factor, other nations		High seas harvest	Tons	16,828	17,382
	Greenland	Tons	12,571	10,365	8,697
	Other fishing nations	Tons	4,255	7,017	9,175
	Coastal harvest	Tons	7,412	7,375	7,350
	High seas profit	Mill. DKK	99.22	86.34	75.60
	Coastal profit	Mill. DKK	61.27	61.00	60.81
	High seas stock size	Tons	99,177	94,114	91,808
	High seas shadow price	Mill. DKK	0.0036	0.0036	0.0042
	Coastal stock size	Tons	23,201	22,805	22,537
	Coastal shadow price	Mill. DKK	0.0071	0.0087	0.0072
	Migration	Tons	1,009	975	965
	Migration	High seas harvest	Tons	17,850	17,382
Greenland		Tons	10,644	10,365	10,089
Other fishing nations		Tons	7,206	7,017	6,830
Coastal harvest		Tons	6,887	7,375	7,859
High seas profit		Mill. DKK	87.96	86.34	84.68
Coastal profit		Mill. DKK	57.49	61.00	64.42
High seas stock size		Tons	94,548	94,114	94,115
High seas shadow price		Mill. DKK	0.0033	0.0036	0.0035
Coastal stock size		Tons	23,297	22,805	23,105
Coastal shadow price		Mill. DKK	0.0073	0.0087	0.0070
Migration		Tons	481	975	1,433

Table A.5: Sensitivity analysis for the parameters in the coastal resource restriction, scenario 2.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
Coastal carrying capacity	High seas harvest	Tons	16,966	17,382	17,850
	Greenland	Tons	10,093	10,365	10,644
	Other fishing nations	Tons	6,833	7,017	7,206
	Coastal harvest	Tons	5,725	7,375	13,286
	High seas profit	Mill. DKK	84.68	86.34	87.97
	Coastal profit	Mill. DKK	46.30	61.00	78.43
	High seas stock size	Tons	94,022	94,114	94,599
	High seas shadow price	Mill. DKK	0.0035	0.0036	0.0033
	Coastal stock size	Tons	15,370	22,805	46,760
	Coastal shadow price	Mill. DKK	0.0068	0.0087	0.0074
Coastal intrinsic growth rate	Migration	Tons	1,450	975	479
	High seas harvest	Tons	17,275	17,382	17,446
	Greenland	Tons	10,301	10,365	10,403
	Other fishing nations	Tons	6,974	7,017	7,243
	Coastal harvest	Tons	4,257	7,375	10,471
	High seas profit	Mill. DKK	80.03	86.34	86.49
	Coastal profit	Mill. DKK	36.47	61.00	82.57
	High seas stock size	Tons	94,570	94,114	94,163
	High seas shadow price	Mill. DKK	0.0034	0.0036	0.0034
	Coastal stock size	Tons	21,326	22,805	24,242
Migration	Coastal shadow price	Mill. DKK	0.0080	0.0087	0.0064
	Migration	Tons	1,039	975	925
	High seas harvest	Tons	17,850	17,382	16,919
	Greenland	Tons	10,644	10,365	10,089
	Other fishing nations	Tons	7,206	7,017	6,830
	Coastal harvest	Tons	6,887	7,375	7,859
	High seas profit	Mill. DKK	87.96	86.34	84.68
	Coastal profit	Mill. DKK	57.49	61.00	64.42
	High seas stock size	Tons	94,548	94,114	94,115
	High seas shadow price	Mill. DKK	0.0033	0.0036	0.0035
Coastal stock size	Tons	23,297	22,805	23,105	
Coastal shadow price	Mill. DKK	0.0073	0.0087	0.0070	
Migration	Tons	481	975	1,433	

Table A.6: Sensitivity analysis for the high seas economic parameters, scenario 2.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
High seas cost parameter	High seas harvest	Tons	18,073	17,382	16,259
	Greenland	Tons	10,777	10,365	9,695
	Other fishing nations	Tons	7,296	7,017	6,564
	Coastal harvest	Tons	7,272	7,375	7,475
	High seas profit	Mill. DKK	101.99	86.34	73.37
	Coastal profit	Mill. DKK	60.34	61.00	61.63
	High seas stock size	Tons	85,968	94,114	103,243
	High seas shadow price	Mill. DKK	0.0048	0.0036	0.0025
	Coastal stock size	Tons	23,426	22,805	22,960
	Coastal shadow price	Mill. DKK	0.0082	0.0087	0.0089
	Migration	Tons	870	975	1,066
High seas price	High seas harvest	Tons	16,259	17,382	17,957
	Greenland	Tons	8,709	10,365	10,708
	Other fishing nations	Tons	6,564	7,017	7,249
	Coastal harvest	Tons	7,591	7,375	7,273
	High seas profit	Mill. DKK	31.46	86.34	144.94
	Coastal profit	Mill. DKK	62.32	61.00	60.43
	High seas stock size	Tons	112,542	94,114	88,006
	High seas shadow price	Mill. DKK	0.0010	0.0036	0.0064
	Coastal stock size	Tons	22,567	22,805	23,691
	Coastal shadow price	Mill. DKK	0.0091	0.0087	0.0082
	Migration	Tons	1,182	975	880

Table A.7: Sensitivity analysis for the coastal economic parameters, scenario 2.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
Coastal cost parameter	High seas harvest	Tons	17,303	17,382	17,451
	Greenland	Tons	10,318	10,365	10,406
	Other fishing nations	Tons	6,985	7,017	7,045
	Coastal harvest	Tons	7,439	7,375	7,282
	High seas profit	Mill. DKK	86.15	86.34	86.50
	Coastal profit	Mill. DKK	65.15	61.00	56.98
	High seas stock size	Tons	94.636	94,114	93.131
	High seas shadow price	Mill. DKK	0.0034	0.0036	0.0037
	Coastal stock size	Tons	22,060	22,805	24.296
	Coastal shadow price	Mill. DKK	0.0092	0.0087	0.0082
	Migration	Tons	1,017	975	901
Coastal price	High seas harvest	Tons	17,593	17,382	17,193
	Greenland	Tons	10,491	10,365	10,252
	Other fishing nations	Tons	7,102	7,017	6,941
	Coastal harvest	Tons	7,098	7,375	7,444
	High seas profit	Mill. DKK	86.73	86.34	86.06
	Coastal profit	Mill. DKK	26.62	61.00	95.97
	High seas stock size	Tons	93,279	94,114	95,669
	High seas shadow price	Mill. DKK	0.0038	0.0036	0.0035
	Coastal stock size	Tons	25.880	22,805	21,187
	Coastal shadow price	Mill. DKK	0.0029	0.0087	0.012
	Migration	Tons	854	975	1,070

Table A.8: Sensitivity analysis for the parameters in the resource restriction, scenario 3.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
Carrying capacity	High seas harvest	Tons	3,872	22,774	39,495
	Greenland	Tons	2,309	13,580	23,551
	Other fishing nations	Tons	1,561	9,194	15,994
	Coastal harvest	Tons	17,022	18,632	19,315
	Stock size	Tons	250,568	267,817	301,816
	Shadow price	Mill. DKK	0.0058	0.0035	0.0020
	High seas profit	Mill. DKK	24.50	122.28	187.12
	Coastal profit	Mill. DKK	148.84	162.58	182.12
	Land-based profit	Mill. DKK	37.51	24.93	11.78
Intrinsic growth rate	High seas harvest	Tons	8,494	22,774	59,232
	Greenland	Tons	5,065	13,580	34,724
	Other fishing nations	Tons	3,429	9,194	23,508
	Coastal harvest	Tons	17,138	18,632	19,535
	Stock size	Tons	160,548	267,817	529,479
	Shadow price	Mill. DKK	0.0047	0.0035	0.0026
	High seas profit	Mill. DKK	49.37	122.28	292.66
	Coastal profit	Mill. DKK	143.93	162.58	179.99
	Land-based profit	Mill. DKK	37.54	24.93	3.46
Scaling factor, other nations	High seas harvest	Tons	32,333	22,774	22,181
	Greenland	Tons	17,432	13,580	10,794
	Other fishing nations	Tons	5,901	9,194	11,388
	Coastal harvest	Tons	17,566	18,632	19,650
	Stock size	Tons	275,701	267,817	263,982
	Shadow price	Mill. DKK	0.0037	0.0035	0.0033
	High seas profit	Mill. DKK	148.51	122.28	101.30
	Coastal profit	Mill. DKK	154.26	162.58	170.68
	Land-based profit	Mill. DKK	25.16	24.93	22.92

Table A.9: Sensitivity analysis for the high seas economic parameters, scenario 3.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
High seas cost parameter	High seas harvest	Tons	25,596	22,774	20,399
	Greenland	Tons	15,263	13,580	12,164
	Other fishing nations	Tons	10,333	9,194	8,235
	Coastal harvest	Tons	16,204	18,632	20,410
	Stock size	Tons	255,542	267,817	279,514
	Shadow price	Mill. DKK	0.0047	0.0035	0.0028
	High seas profit	Mill. DKK	149.76	122.28	102.66
	Coastal profit	Mill. DKK	142.76	162.58	177.54
	Land-based profit	Mill. DKK	32.68	24.93	18.04
High seas price	High seas harvest	Tons	14,290	22,774	29,076
	Greenland	Tons	8,521	13,580	17,338
	Other fishing nations	Tons	5,769	9,194	11,738
	Coastal harvest	Tons	24,607	18,632	12,616
	Stock size	Tons	304,420	267,817	260,493
	Shadow price	Mill. DKK	0.00095	0.0035	0.0065
	High seas profit	Mill. DKK	37.54	122.28	240.65
	Coastal profit	Mill. DKK	212.33	162.58	112.51
	Land-based profit	Mill. DKK	2.32	24.93	40.20

Table A.10: Sensitivity analysis for the coastal economic parameters, scenario 3.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
Coastal cost parameter	High seas harvest	Tons	21,637	22,774	23,745
	Greenland	Tons	12,902	13,580	14,159
	Other fishing nations	Tons	8,735	9,194	9,586
	Coastal harvest	Tons	19,924	18,632	17,505
	Stock size	Tons	263,186	267,817	271,363
	Shadow price	Mill. DKK	0.0035	0.0035	0.0035
	High seas profit	Mill. DKK	117.02	122.28	126.69
	Coastal profit	Mill. DKK	179.02	162.58	148.55
	Land-based profit	Mill. DKK	19.70	24.93	28.95
Coastal price	High seas harvest	Tons	31,258	22,774	14,134
	Greenland	Tons	18,639	13,580	8,428
	Other fishing nations	Tons	12,619	9,194	5,706
	Coastal harvest	Tons	9,704	18,632	27,349
	Stock size	Tons	277,985	267,817	264,187
	Shadow price	Mill. DKK	0.0034	0.0035	0.0038
	High seas profit	Mill. DKK	156.03	122.28	82.03
	Coastal profit	Mill. DKK	42.39	162.58	358.46
	Land-based profit	Mill. DKK	42.59	24.93	-22.56

Table A.11: Sensitivity analysis for the land based economic parameters, scenario 3.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
Land-based cost parameter	High seas harvest	Tons	9,532	22,774	29,539
	Greenland	Tons	5,684	13,580	17,614
	Other fishing nations	Tons	3,848	9,194	11,925
	Coastal harvest	Tons	32,054	18,632	11,234
	Stock size	Tons	260,084	267,817	282.100
	Shadow price	Mill. DKK	0.0053	0.0035	0.0028
	High seas profit	Mill. DKK	57.54	122.28	150.45
	Coastal profit	Mill. DKK	264.47	162.28	101.03
	Land-based profit	Mill. DKK	79.22	24.93	10.48
Land-based price	High seas harvest	Tons	27,738	22,774	17,694
	Greenland	Tons	16,540	13,580	10,551
	Other fishing nations	Tons	11,198	9,194	7,143
	Coastal harvest	Tons	13,267	18,632	23,866
	Stock size	Tons	276,807	267,817	262,487
	Shadow price	Mill. DKK	0.0029	0.0035	0.0042
	High seas profit	Mill. DKK	143.14	122.28	99.31
	Coastal profit	Mill. DKK	118.37	162.58	203.79
	Land-based profit	Mill. DKK	-15.07	24.93	85.47
Processing loss in land-based factories	High seas harvest	Tons	47,862	22,774	12,644
	Greenland	Tons	28,540	13,580	7,540
	Other fishing nations	Tons	19,322	9,194	5,105
	Coastal harvest	Tons	13,267	18,632	19,540
	Stock size	Tons	276,807	267,817	266,639
	Shadow price	Mill. DKK	0.0029	0.0035	0.0036
	High seas profit	Mill. DKK	143.14	122.28	118.49
	Coastal profit	Mill. DKK	118.37	162.58	169.93
	Land-based profit	Mill. DKK	-28.77	24.93	38.20

Table A.12: Sensitivity analysis for the parameters in the high seas resource restriction, scenario 4.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound	
High seas carrying capacity	High seas harvest	Tons	10,600	17,393	34,702	
	Greenland	Tons	6,917	10,371	20,693	
	Other fishing nations	Tons	4,683	7,021	14,009	
	Coastal harvest	Tons	7,067	7,395	8,338	
	High seas profit	Mill. DKK	57.54	86.30	172.33	
	Coastal profit	Mill. DKK	58.66	61.02	67.78	
	Land-based profit	Mill. DKK	37.44	39.52	42.57	
	High seas stock size	Tons	62,699	94,114	188,415	
	High seas shadow price	Mill. DKK	0.0037	0.0036	0.0034	
	Coastal stock size	Tons	22,851	22,805	23,150	
	Coastal shadow price	Mill. DKK	0.0094	0.0087	0.0066	
	Migration	Tons	650	978	1,929	
	High seas intrinsic growth rate	High seas harvest	Tons	8,558	17,393	24,919
		Greenland	Tons	5,103	10,371	14,859
Other fishing nations		Tons	3,455	7,021	10,069	
Coastal harvest		Tons	7,311	7,395	7,490	
High seas profit		Mill. DKK	48.76	86.30	111.30	
Coastal profit		Mill. DKK	37.17	61.02	61.66	
Land-based profit		Mill. DKK	37.75	39.52	41.03	
High seas stock size		Tons	86,596	94,114	103,453	
High seas shadow price		Mill. DKK	0.0052	0.0036	0.0025	
Coastal stock size		Tons	22,920	22,805	22,712	
Coastal shadow price		Mill. DKK	0.0094	0.0087	0.0080	
Migration		Tons	895	978	1,080	
Scaling factor, other nations		High seas harvest	Tons	16,862	17,393	17,860
		Greenland	Tons	12,598	10,371	8,691
	Other fishing nations	Tons	4,264	7,021	9,169	
	Coastal harvest	Tons	7,428	7,395	7,375	
	High seas profit	Mill. DKK	99.20	86.30	75.55	
	Coastal profit	Mill. DKK	61.28	61.02	60.84	
	Land-based profit	Mill. DKK	40.31	39.52	39.03	
	High seas stock size	Tons	97,805	94,114	91,748	
	High seas shadow price	Mill. DKK	0.0038	0.0036	0.0034	
	Coastal stock size	Tons	22,892	22,805	22,726	
	Coastal shadow price	Mill. DKK	0.0084	0.0087	0.0089	
	Migration	Tons	1,013	978	957	
	Migration	High seas harvest	Tons	17,842	17,393	16,899
		Greenland	Tons	10,669	10,371	10,077
Other fishing nations		Tons	7,243	7,021	6,822	
Coastal harvest		Tons	6,899	7,395	7,892	
High seas profit		Mill. DKK	87.96	86.30	84.60	
Coastal profit		Mill. DKK	57.48	61.02	64.49	
Land-based profit		Mill. DKK	38.69	39.52	40.24	
High seas stock size		Tons	94,068	94,114	94,052	
High seas shadow price		Mill. DKK	0.0036	0.0036	0.0037	
Coastal stock size		Tons	22,988	22,805	22,696	
Coastal shadow price		Mill. DKK	0.0090	0.0087	0.0083	
Migration		Tons	485	978	1,455	

Table A.13: Sensitivity analysis for the parameters in the coastal resource restriction, scenario 4.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
Coastal carrying capacity	High seas harvest	Tons	16,879	17,393	17,810
	Greenland	Tons	10,065	10,371	10,620
	Other fishing nations	Tons	6,814	7,021	7,190
	Coastal harvest	Tons	5,790	7,395	13,259
	High seas profit	Mill. DKK	84.43	86.30	87.97
	Coastal profit	Mill. DKK	46.43	61.02	111.40
	Land-based profit	Mill. DKK	35.85	39.52	41.82
	High seas stock size	Tons	93,910	94,114	95,010
	High seas shadow price	Mill. DKK	0.0038	0.0036	0.0031
	Coastal stock size	Tons	14,758	22,805	47,407
	Coastal shadow price	Mill. DKK	0.0091	0.0087	0.0060
	Migration	Tons	1,508	978	475
Coastal intrinsic growth rate	High seas harvest	Tons	17,280	17,393	17,478
	Greenland	Tons	10,304	10,371	10,422
	Other fishing nations	Tons	6,976	7,021	7,056
	Coastal harvest	Tons	4,279	7,395	10,469
	High seas profit	Mill. DKK	85.94	86.30	86.50
	Coastal profit	Mill. DKK	36.99	61.02	82.57
	Land-based profit	Mill. DKK	31.48	39.52	42.59
	High seas stock size	Tons	94,167	94,114	94,172
	High seas shadow price	Mill. DKK	0.0039	0.0036	0.0034
	Coastal stock size	Tons	20,586	22,805	24,257
	Coastal shadow price	Mill. DKK	0.01	0.0087	0.0064
	Migration	Tons	1084	978	920
Migration	High seas harvest	Tons	17,892	17,393	16,899
	Greenland	Tons	10,669	10,371	10,077
	Other fishing nations	Tons	7,223	7,021	6,822
	Coastal harvest	Tons	6,899	7,395	7,892
	High seas profit	Mill. DKK	87.96	86.30	84.60
	Coastal profit	Mill. DKK	57.48	61.02	64.49
	Land-based profit	Mill. DKK	38.69	39.52	40.24
	High seas stock size	Tons	94,068	94,114	94,052
	High seas shadow price	Mill. DKK	0.0036	0.0036	0.0037
	Coastal stock size	Tons	22,988	22,805	22,696
	Coastal shadow price	Mill. DKK	0.0090	0.0087	0.0083
	Migration	Tons	485	978	1,455

Table A.14: Sensitivity analysis for the high seas economic parameters, scenario 4.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
High seas cost parameter	High seas harvest	Tons	18,055	17,393	16,322
	Greenland	Tons	10,766	10,371	9,733
	Other fishing nations	Tons	7,289	7,021	6,589
	Coastal harvest	Tons	7,297	7,395	7,493
	High seas profit	Mill. DKK	101.91	86.30	73.93
	Coastal profit	Mill. DKK	60.40	61.02	61.63
	Land-based profit	Mill. DKK	39.48	39.52	39.56
	High seas stock size	Tons	86,039	94,114	102,819
	High seas shadow price	Mill. DKK	0.0050	0.0036	0.0027
	Coastal stock size	Tons	23,050	22,805	22,584
	Coastal shadow price	Mill. DKK	0.0087	0.0087	0.0086
	Migration	Tons	884	978	1,079
	High seas price	High seas harvest	Tons	14,864	17,393
Greenland		Tons	8,864	10,371	10,649
Other fishing nations		Tons	6,001	7,021	7,209
Coastal harvest		Tons	7,598	7,395	7,302
High seas profit		Mill. DKK	31.52	86.30	144.84
Coastal profit		Mill. DKK	62.22	61.02	60.51
Land-based profit		Mill. DKK	39.34	39.52	39.64
High seas stock size		Tons	112,346	94,114	87,988
High seas shadow price		Mill. DKK	0.0012	0.0036	0.0087
Coastal stock size		Tons	22,201	22,805	23,282
Coastal shadow price		Mill. DKK	0.0086	0.0087	0.0087
Migration		Tons	1,199	978	896

Table A.15: Sensitivity analysis for the coastal economic parameters, scenario 4.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
Coastal cost parameter	High seas harvest	Tons	17,317	17,393	17,459
	Greenland	Tons	10,326	10,371	10,411
	Other fishing nations	Tons	6,991	7,021	7,048
	Coastal harvest	Tons	7,445	7,395	7,325
	High seas profit	Mill. DKK	86.13	86.30	86.45
	Coastal profit	Mill. DKK	65.30	61.02	57.00
	Land-based profit	Mill. DKK	39.55	39.52	39.41
	High seas stock size	Tons	94,416	94,114	93,859
	High seas shadow price	Mill. DKK	0.0037	0.0036	0.0036
	Coastal stock size	Tons	21,845	22,805	23,766
	Coastal shadow price	Mill. DKK	0.0097	0.0087	0.0078
	Migration	Tons	1,024	978	936
	Coastal price	High seas harvest	Tons	17,582	17,393
Greenland		Tons	10,484	10,371	10,264
Other fishing nations		Tons	7,098	7,021	6,949
Coastal harvest		Tons	7,242	7,395	7,449
High seas profit		Mill. DKK	86.59	86.30	86.06
Coastal profit		Mill. DKK	26.66	61.02	95.96
Land-based profit		Mill. DKK	39.28	39.52	39.57
High seas stock size		Tons	92,949	94,114	95,415
High seas shadow price		Mill. DKK	0.0036	0.0036	0.0037
Coastal stock size		Tons	24,597	22,805	22,019
Coastal shadow price		Mill, DKK	0.0043	0.0087	0.0013
Migration		Tons	934	978	1,027

Table A.16: Sensitivity analysis for the land based economic parameters, scenario 4.

Parameter	Indicator	Measurement unit	Lower bound	Benchmark	Upper bound
Land-based cost parameter	High seas harvest	Tons	17,374	17,393	17,421
	Greenland	Tons	10,381	10,371	10,360
	Other fishing nations	Tons	7,028	7,021	7,014
	Coastal harvest	Tons	7,415	7,395	7,346
	High seas profit	Mill. DKK	86.26	86.30	86.38
	Coastal profit	Mill. DKK	61.00	61.02	60.93
	Land-based profit	Mill. DKK	50.99	39.52	26.65
	High seas stock size	Tons	93,712	94,114	94,598
	High seas shadow price	Mill. DKK	0.0040	0.0036	0.0032
	Coastal stock size	Tons	22,371	22,805	23,606
	Coastal shadow price	Mill. DKK	0.0011	0.0087	0.0059
	Migration	Tons	993	978	976
	Land-based price	High seas harvest	Tons	17,414	17,393
Greenland		Tons	10,359	10,371	10,384
Other fishing nations		Tons	7,013	7,021	7,030
Coastal harvest		Tons	7,333	7,395	7,419
High seas profit		Mill. DKK	86.39	86.30	86.25
Coastal profit		Mill. DKK	60.90	61.02	61.99
Land-based profit		Mill. DKK	7.68	39.52	70.84
High seas stock size		Tons	94,682	94,114	93,680
High seas shadow price		Mill. DKK	0.0032	0.0036	0.0041
Coastal stock size		Tons	23,772	22,805	22,277
Coastal shadow price		Mill. DKK	0.0055	0.0087	0.012
Migration		Tons	944	978	997
Processing loss in land-based factories		High seas harvest	Tons	17,397	17,393
	Greenland	Tons	10,359	10,371	10,374
	Other fishing nations	Tons	7,013	7,021	7,023
	Coastal harvest	Tons	7,333	7,395	7,401
	High seas profit	Mill. DKK	86.40	86.30	86.29
	Coastal profit	Mill. DKK	60.61	61.02	61.02
	Land-based profit	Mill. DKK	8.51	39.52	44.94
	High seas stock size	Tons	94,682	94,114	94,031
	High seas shadow price	Mill. DKK	0.0032	0.0036	0.0037
	Coastal stock size	Tons	23,772	22,805	22,691
	Coastal shadow price	Mill. DKK	0.0055	0.0087	0.0092
	Migration	Tons	944	978	982