

Supplementary Material.

1. Supplementary Tables

2+3K		Allocations (in tons)						
Nunatsiavut Government Communal		2013	2014	2015	2016	2017	2018	2019
		132	131	132	119	126	140	140
Vessels under 100'	Fixed Gear<65'	2,271	2,580	2,312	2,169	1,901	2,119	2,122
	Mobile Gear<65'	80	91	82	77	67	75	75
	Fixed Gear 65'-100'	288	327	293	275	241	268	269
	Mobile Gear 65'-100'	8	9	8	7	6	7	7
Vessels over 100'	Offshore Enterprise Allocation Holders					1,194	1,332	1,333
	Scandinavian Long Liners					183	204	205
Canadian Quota		4,442	5,048	4,523	4,244	3,718	4,145	4,151
French Quota						115	128	128
TAC						3,833	4,274	4,279

Table 1 Turbot TAC and Canadian Allocations/Fleet sharing arrangements in area 2+3K¹

¹ Data for 2017-2019 were provided by the Torngat Secretariat. Data for the 2013-2016 NG communal access for 2+3KLMNO were provided by the NG and were split for areas 2+3K and 3LMNO accounting for shares of 69.33% and 30.67% for each area respectively. Data for the 2013-2016 Canadian Quota were obtained from total landings reported in the IFMP (2019) which were then split for areas 2+3K and 3LMNO accounting for shares of 69.33% and 30.67% for each area respectively. The shares for rest of the fleet sectors were obtained from IFMP (2013) and are as follows for 2+3K and 3LMNO respectively fg<65' (51.12%, 59.42%), mg<65' (1.81%, 1.55%), fg 65'-100' (6.48%, 2.61%), mg 65'-100' (0.17%, 0.19%) and vessels over 100' (37.04%, 32.84%).

3LMNO		Allocations (in tons)						
		2013	2014	2015	2016	2017	2018	2019
Nunatsiavut Government Communal		59	58	59	52	56	62	62
Vessels under 100'	Fixed Gear<65'	1,168	1,327	1,189	1,116	977	1,090	1,091
	Mobile Gear<65'	30	35	31	29	25	28	28
	Fixed Gear 65'-100'	51	58	52	49	43	48	48
	Mobile Gear 65'-100'	4	4	4	4	3	4	4
Vessels over 100'	Offshore Enterprise Allocation Holders					485	540	541
	Scandinavian Long Liners					56	62	62
Canadian Quota		1,965	2,233	2,001	1,877	1,645	1,834	1,836
Other NAFO members						9,321	10,393	10,406
TAC						10,966	12,227	12,242

Table 2 Turbot TAC Canadian Allocations/Fleet sharing arrangements in area 3LMNO¹

SFA 4	Allocations (in tons)						
	2013	2014	2015/16	2016/17*	2017/18	2018/19	2019/20
Offshore License Holders	10,394	10,394	10,394	10,769	10,687	10,687	7,121
Inshore	702	702	702	702	743	743	495
Innu	750	750	750	1,125	1,192	1,192	794
Scientific/Offshore Competitive	1,125	1,125	1,125	0	0	0	0
Nunatsiavut Government	300	300	300	675	1403	1,403	935
NSRF Survey (Northern Shrimp Research Foundation)	1,700	1,700	1,700	1,700	1,700	1,700	1,500
Total	14,971	14,971	14,971	14,971	15,725	15,725	10,845

Table 3 Northern Shrimp Allocations/Fleet sharing arrangements in SFA 4

SFA 5	Allocations (in tons)						
	2013	2014	2015/16	2016/17*	2017/18	2018/19	2019/20
Offshore License Holders	7,650	7,650	7,650	9,750	8,369	9,750	8,407
Northern Coalition	6,120	6,120	6,120	7,176	6,160	7,176	6,188
Innu	510	510	510	1,330	1,142	1,330	1,147
Nunatsiavut Government	1,260	1,043	1,260	2,537	2,178	2,537	2,188
NCC (NunatuKavut Community Council)*	750	533	750	1,594	1,368	1,594	1,374
Cartwright (Imakpick)	710	652	710	710	609	710	612
Inshore Affected Fisher (South Labrador)	3,400	2,409	3,400	2,266	1,945	2,266	1,954
Inshore Affected Fishers (N. Peninsula North 50-30)	400	283	400	267	229	267	230
Scientific/Offshore Competitive	2,500	1,770	2,500	0	0	0	
Total	23,300	20,970	23,300	25,630	22,000	25,630	22,100

Table 4 Northern Shrimp Allocations/Fleet sharing arrangements in SFA 5

* referred to as LMN (Labrador Métis Nation) up until 2015/16

	Formulas	Turbot 2+3K, 3LMNO	Northern Shrimp SFA 4, SFA 5
GE(1), a = 1, Theil's T	$GE(1) = \frac{1}{N} \sum_{i=1}^N \frac{y_i}{y} \ln \left(\frac{y_i}{y} \right)$	0.701	0.558
GE(0), a = 0, Theil's L Mean Log Deviation	$GE(0) = \frac{1}{N} \sum_{i=1}^N \ln \left(\frac{\bar{y}}{y_i} \right)$	1.148	0.484
	General Formula		
GE(2), a = 2	$GE(a) = \frac{1}{a(a-1)} \left[\frac{1}{N} \sum_{i=1}^N \left(\frac{y_i}{y} \right)^a - 1 \right]$	0.781	0.553

Table 5 Generalized Entropy (GE) index metrics to distributions of allocations for the turbot fishery and northern shrimp fisheries in 2019. The GE indexes have been calculated for a = 0, 1 and 2. The parameter a represents the weight given to distances between measures of incomes (y) at different parts of the distribution of these income measures. In this case allocations to number of stakeholder groups (N) have been used as an income measure to estimate the GE index metrics collectively for areas 2+3K and 3LMNO (turbot fishery) and for SFA 4² and SFA 5 (northern shrimp fishery) respectively.

² The SFA 4 allocation to the NSRF Survey (Northern Shrimp Research Foundation) has not been included in these estimates

2. Supplementary Figures

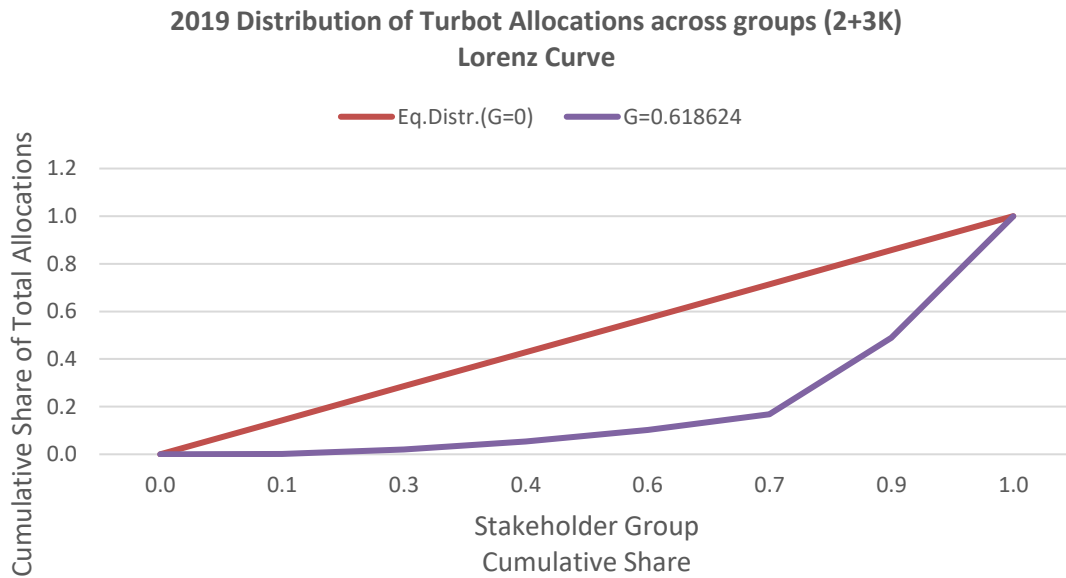


Figure 1 Lorenz Curve and Gini Coefficient for the regional distribution of turbot allocations in area 2+3K

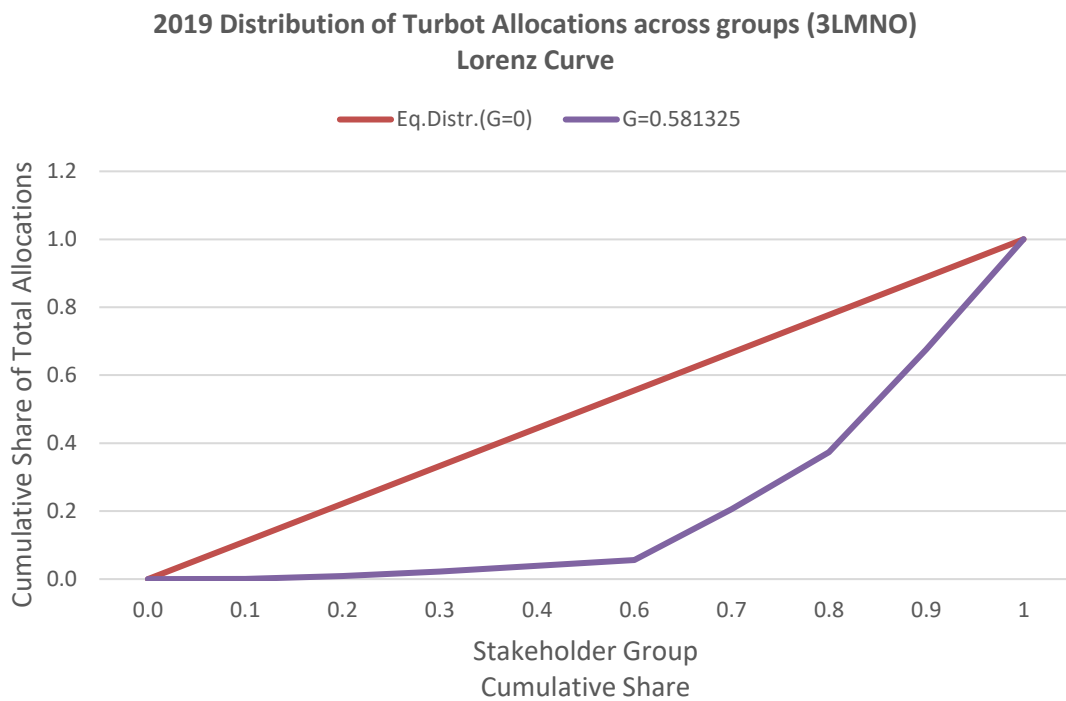


Figure 2 Lorenz Curves and Gini Coefficients for the regional distribution of turbot allocations in area 3LMNO

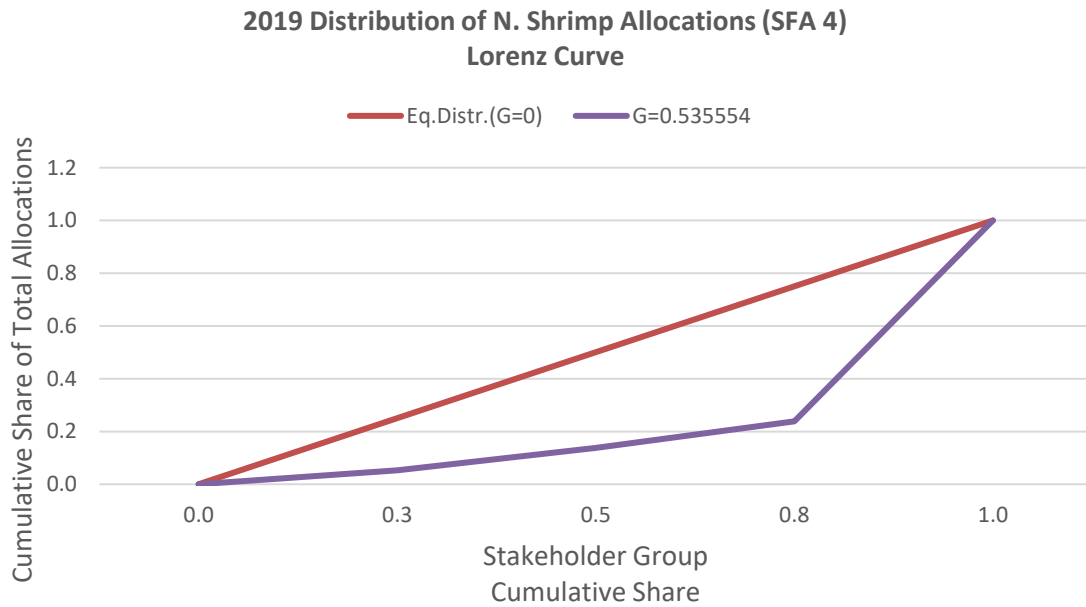


Figure 3 Lorenz Curves and Gini Coefficients for the regional distribution of N.shrimp allocations in area SFA 4³ (2019)

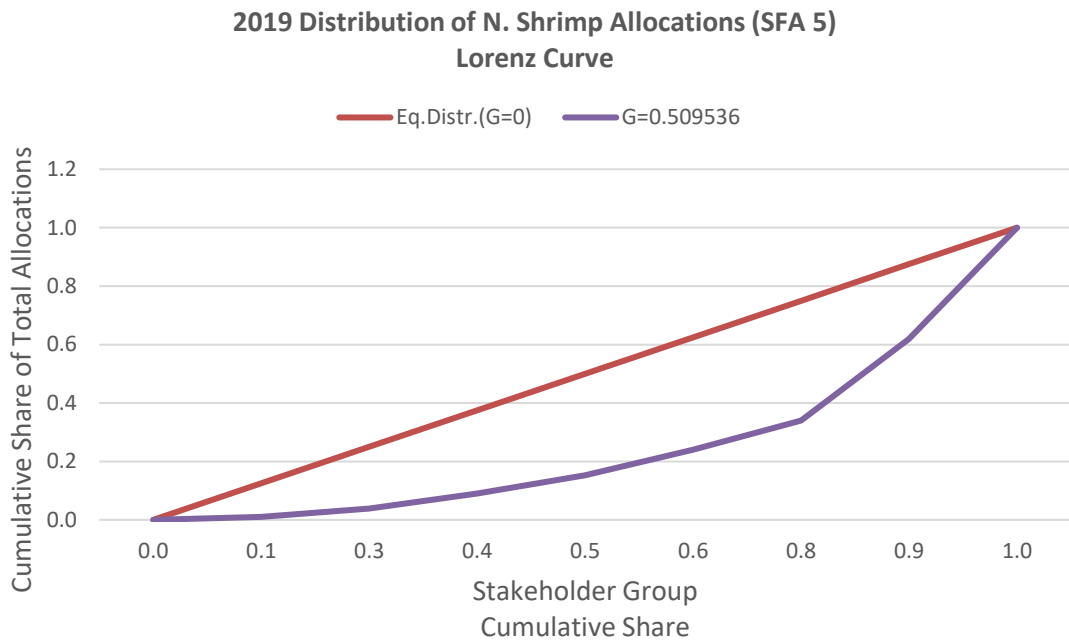


Figure 4 Lorenz Curve and Gini Coefficient for the regional distribution of N.shrimp allocations in area SFA 5 (2019)

³ The SFA 4 allocation to the NSRF Survey (Northern Shrimp Research Foundation) has not been included in these estimates