

Supplementary Figures

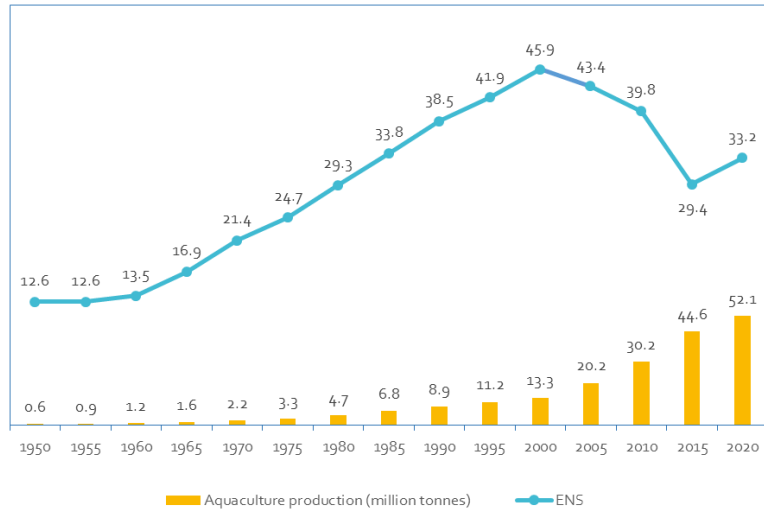
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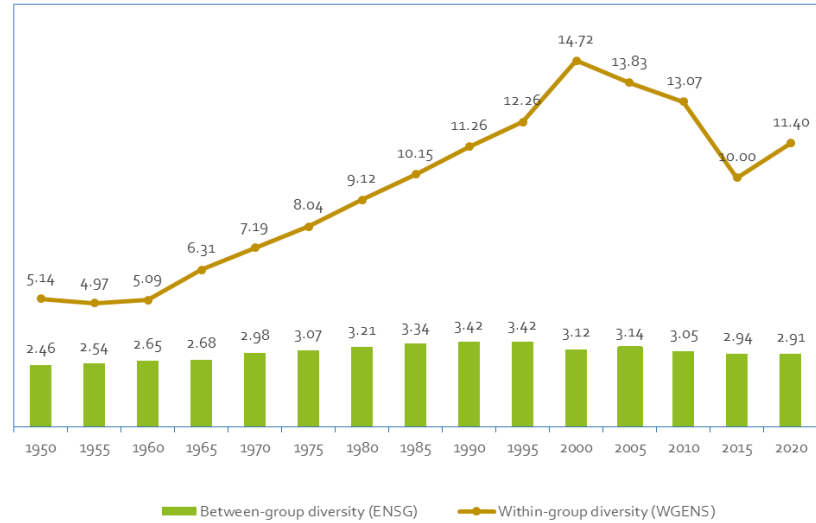
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Supplementary Figure 1: Species diversification in the ROW aquaculture (i.e. world aquaculture, excluding China), 1950–2020

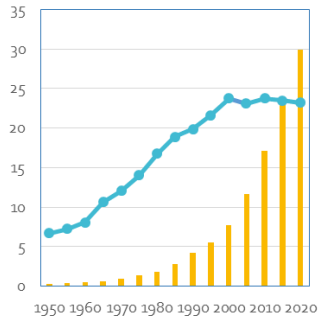
(a) ENS and production, all species



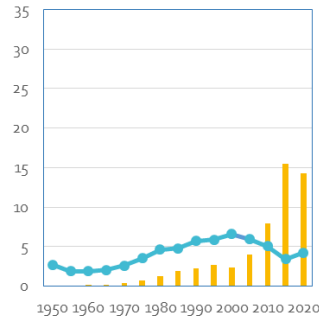
(b) WGENS and ENSG, all species



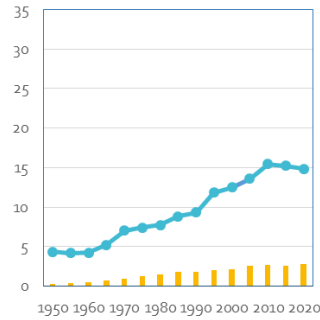
(c) ENS and production, finfish



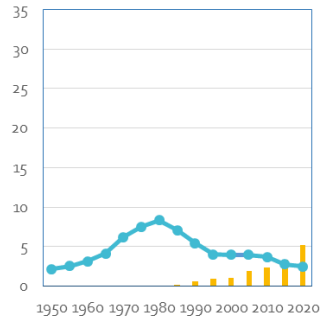
(d) ENS and production, algae



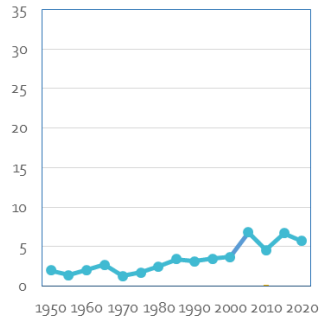
(e) ENS and production, molluscs



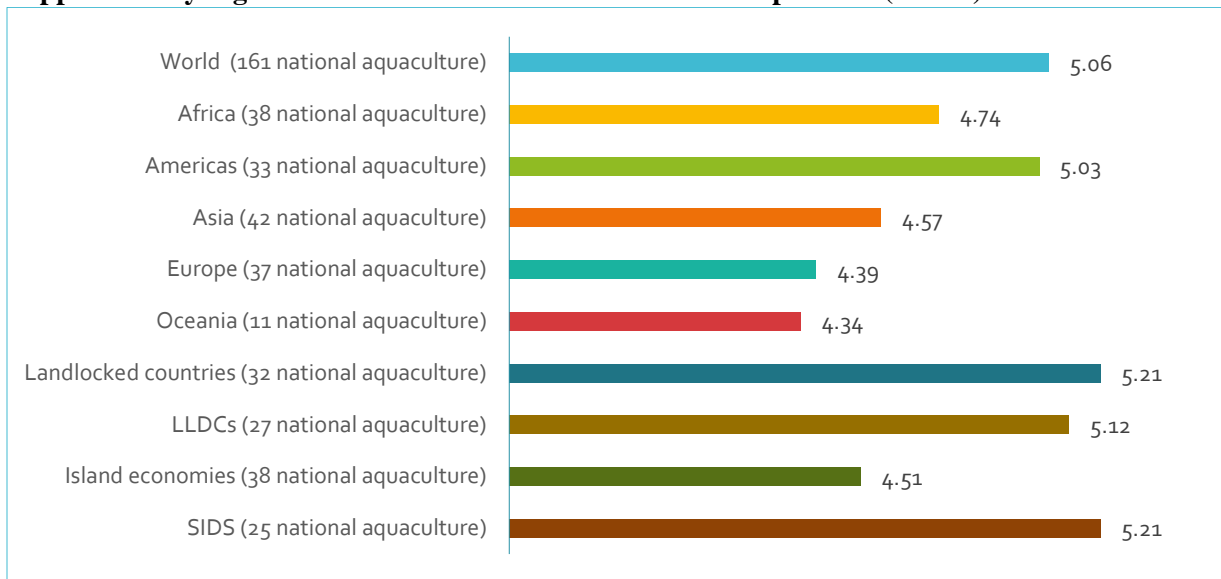
(f) ENS and production, crustaceans



(g) ENS and production, MAA

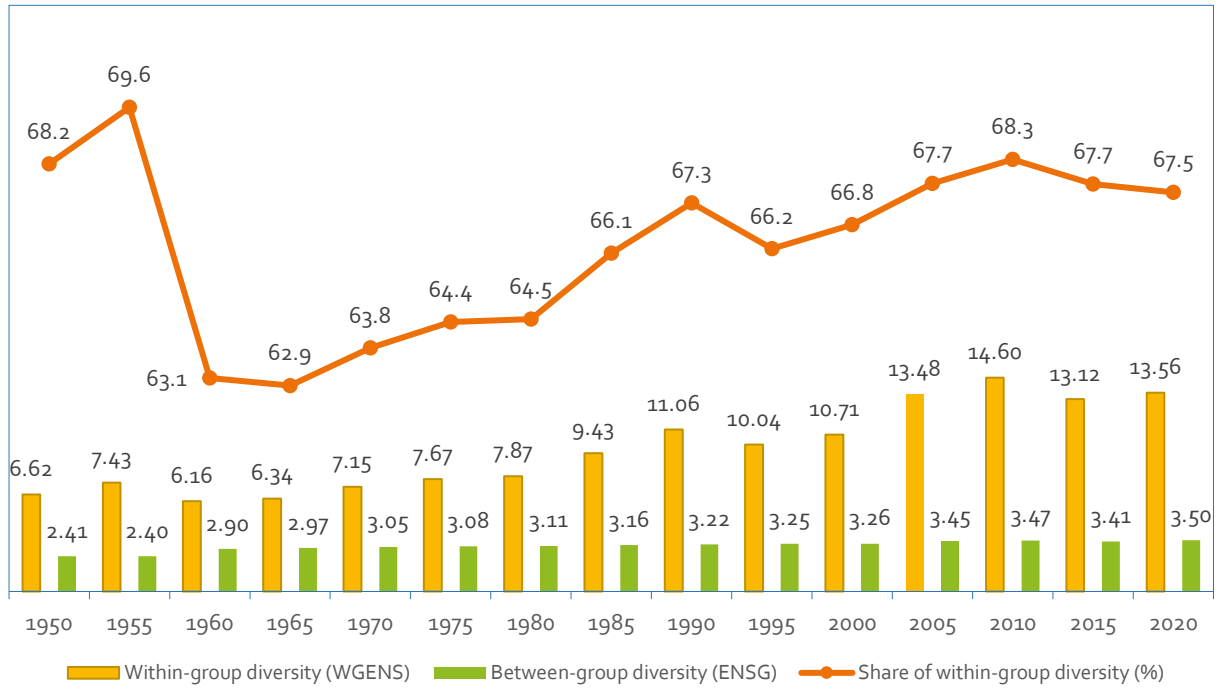


Supplementary Figure 2: Effective number of diversification patterns (ENDP)

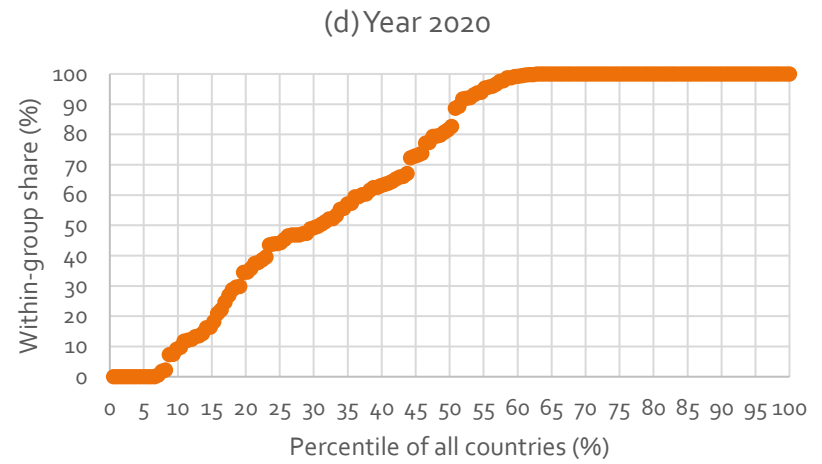
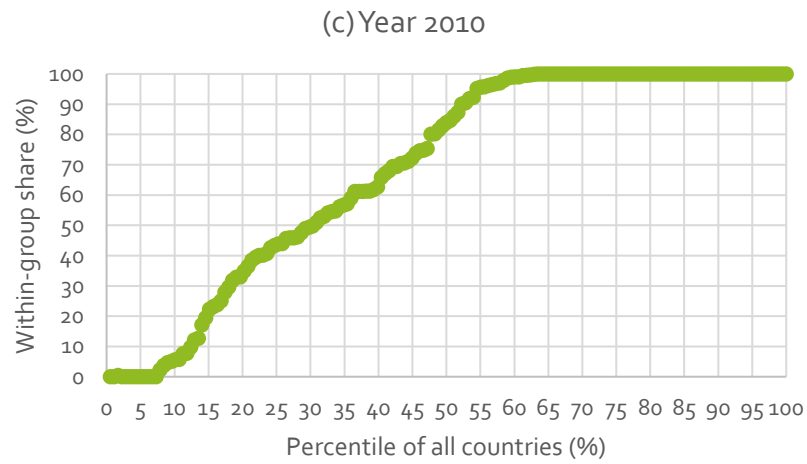
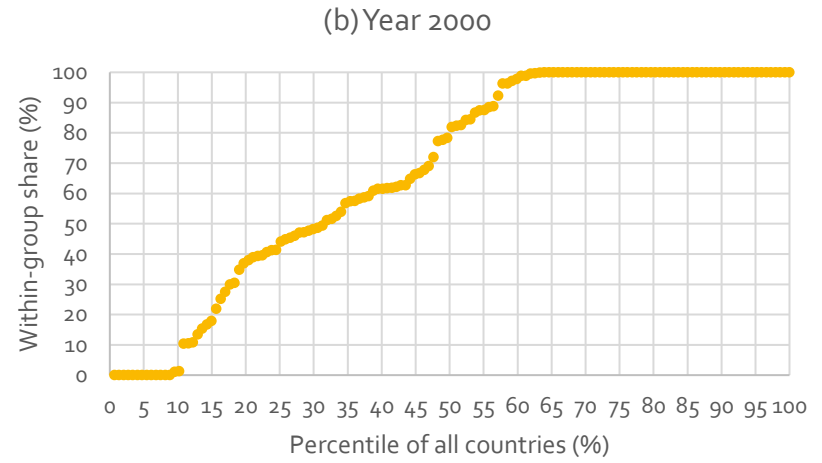
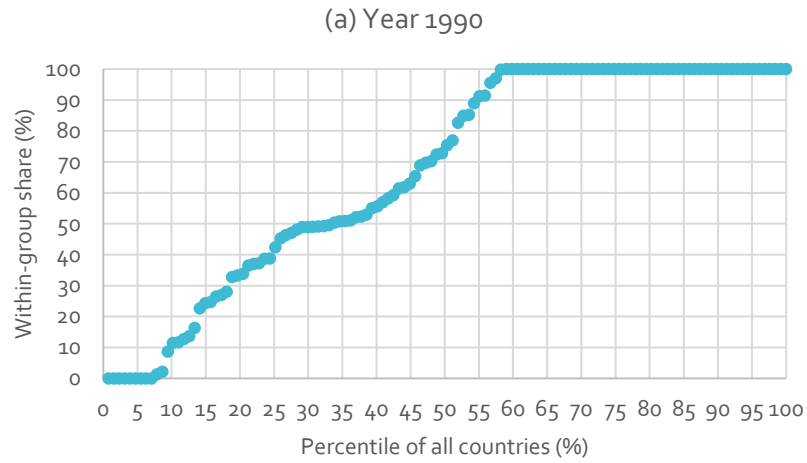


Notes: The “effective number of diversification patterns” (ENDP) measures the evenness of the distribution of six diversification patterns among countries – see more details in section 2.3. LLDCs = Landlocked Developing Countries. SIDS = Small Island Developing States.

Supplementary Figure 3: Decomposition of species diversity in world aquaculture, 1950–2020

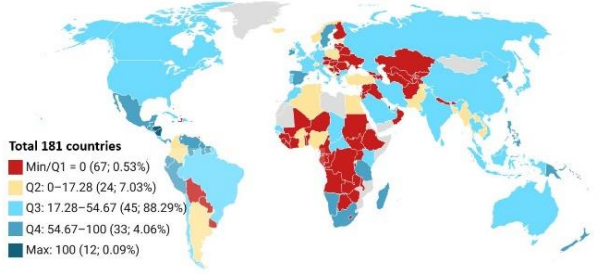


Supplementary Figure 4: Within-group share in species diversity: situations in four years

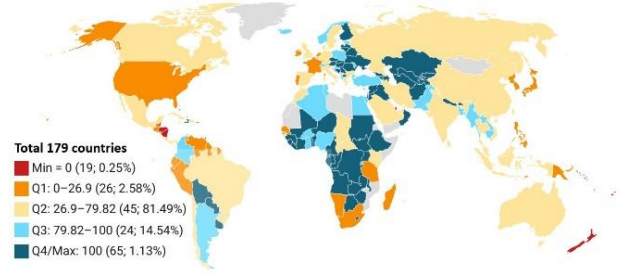


Supplementary Figure 5: Six components of species diversity, 2020

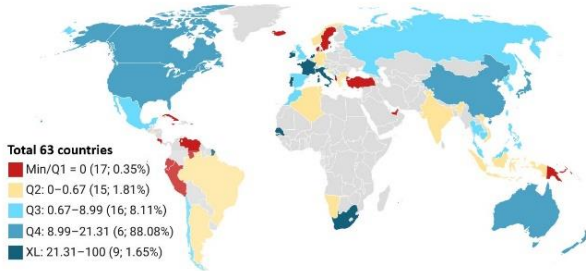
(a) Between-group contribution to diversity (%), 2020



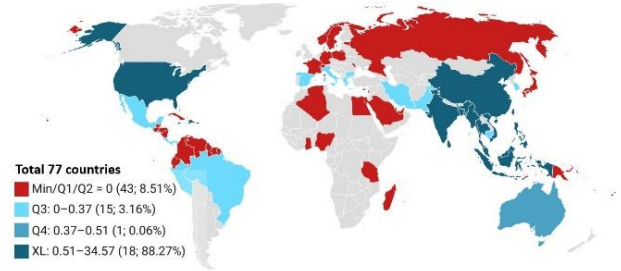
(b) Finfish contribution to diversity (%),



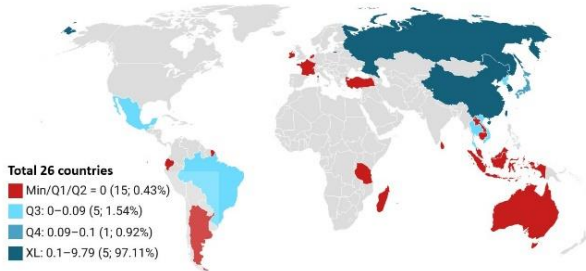
(c) Molluscs contribution to diversity (%), 2020



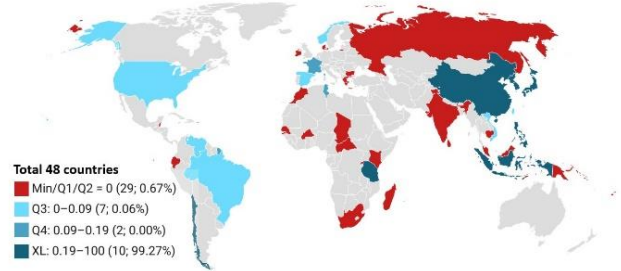
(d) Crustaceans contribution to diversity (%), 2020



(e) MAA contribution to diversity (%), 2020



(f) Algae contribution to diversity (%), 2020



Notes: The boundaries of the ranges are determined by quartile distributions presented in the table below. In parentheses, the first number is the number of countries in the category; the second number (in percentage) represents the category's share in world production.

- Chart (a): Among 181 countries with ENS > 1 in 2020, the contribution of between-group diversity to species diversity was zero (i.e. no between-group diversity) in 67 countries (0.43 percent of world production).
- Chart (b): Finfish diversity accounted for 100 percent of species diversity in 65 countries (more than one third of 179 finfish farming countries).
- Chart (c): Nine countries in "XL" had an extraordinarily large molluscs share in species diversity, which is greater than the third quartile plus 1.5 times of the difference between the third quartile and the first quartile, yet smaller than the maximum.
- Charts (d), (e) and (f): Crustaceans had no contribution to species diversity in more than half of crustacean farming countries. Same for MAA and algae.

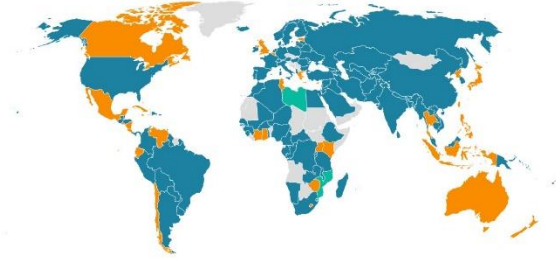
Quartiles	Contribution to species diversity (%)					
	Between-group share (181 countries)	Finfish share (179)	Molluscs share (63)	Crustaceans share (77)	MAA share (26)	Algae share (48)
Minimum	0	0	0	0	0	0
1st quartile	0	26.9	0	0	0	0
2nd quartile (median)	17.28	79.82	0.67	0	0	0
3rd quartile	54.67	100	8.99	0.37	0.09	0.09
Maximum, excluding outliers	n.a.	n.a.	21.31	0.51	0.1	0.19
Maximum	100	100	100	34.57	9.79	100

All maps were created using Datawrapper; the country/territory boundaries depicted therein do not represent authors' opinions. Countries/territories with a small land area may not be discernible on the maps.

Supplementary Figure 6: Comparison of ENS trends and WGENS trends in national aquaculture

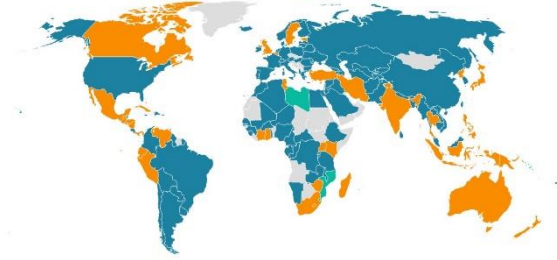
30-year trends of ENS changes (1990–2020)

Up (109, 71.71%; 80.85%) Down (40, 26.32%; 18.93%) Flat (3, 1.97%; 0.00%)



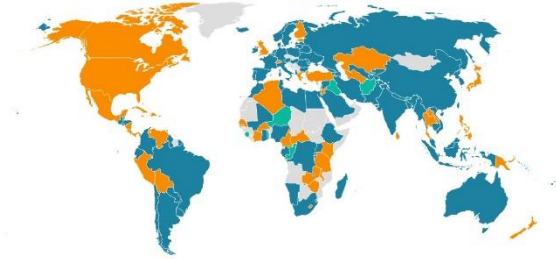
30-year trends of WGENS changes (1990–2020)

Up (100, 65.79%; 76.57%) Down (45, 29.61%; 23.2%) Flat (7, 4.61%; 0.01%)



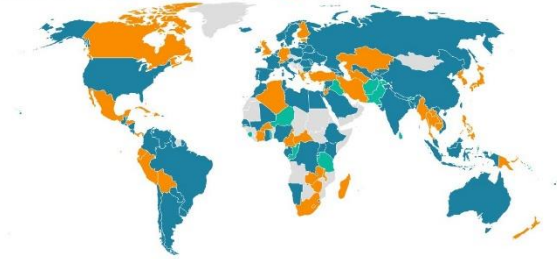
ENS changes in the first decade (1990–2000)

Up (89, 57.79%; 87.82%) Down (47, 30.52%; 11.95%) Flat (18, 11.69%; 0.02%)



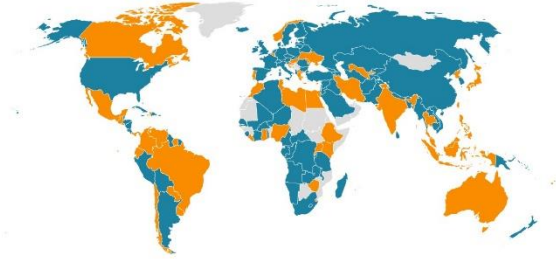
WGENS changes in the first decade (1990–2000)

Up (81, 52.6%; 82.83%) Down (51, 33.12%; 16.78%) Flat (22, 14.29%; 0.19%)



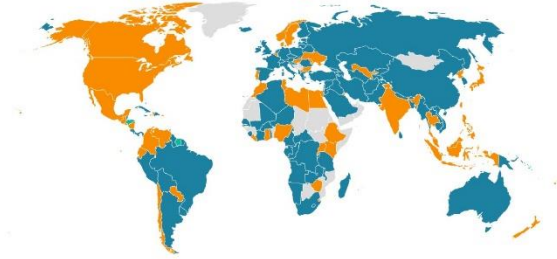
ENS changes in the second decade (2000–2010)

Up (102, 60.71%; 76.07%) Down (60, 35.71%; 23.75%) Flat (6, 3.57%; 0.00%)



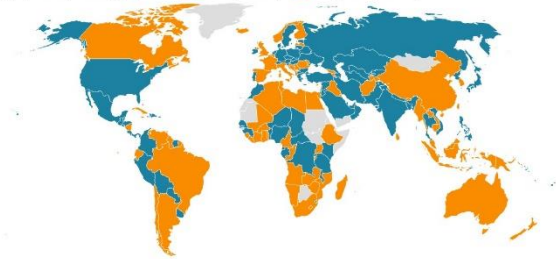
WGENS changes in the second decade (2000–2010)

Up (101, 60.12%; 75.86%) Down (55, 32.74%; 23.89%) Flat (12, 7.14%; 0.07%)



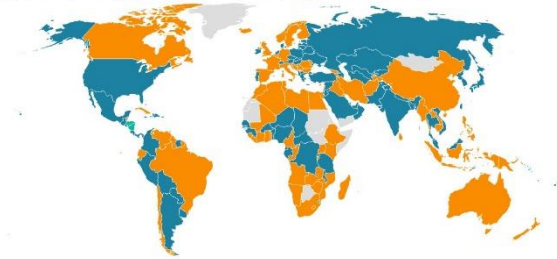
ENS changes in the third decade (2010–2020)

Up (91, 49.19%; 18.87%) Down (91, 49.19%; 80.99%) Flat (3, 1.62%; 0.00%)



WGENS changes in the third decade (2010–2020)

Up (86, 46.49%; 18.64%) Down (86, 46.49%; 81.13%) Flat (13, 7.03%; 0.09%)

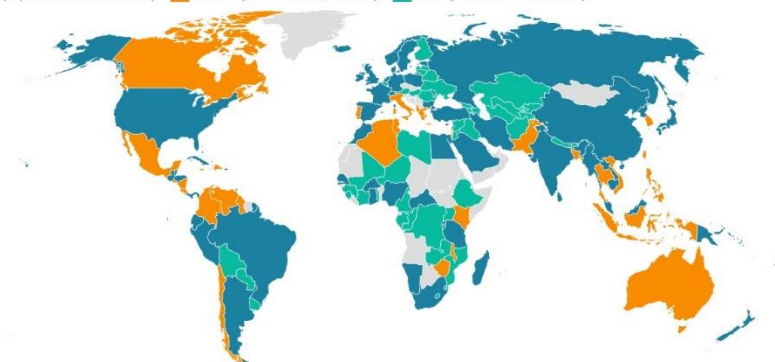


Notes: Up = ENS or WGENS increase; Down = ENS or WGENS decrease; and Flat = ENS or WGENS unchanged. In parentheses, the first number represents the number of national aquaculture in the category; the second number (in percentage) represents the prevalence of the category (i.e. the first number divided by the total number of countries in all categories); and the third number (in percentage) represents the category's share in world production during the period. National aquaculture that are not covered by the categorization, along with countries with no aquaculture, are illustrated in grey. All maps were created using Datawrapper; the country/territory boundaries depicted therein do not represent authors' opinions. Countries/territories with a small land area may not be discernible on the maps.

Supplementary Figure 7: ENSG trends in national aquaculture, 1990–2020

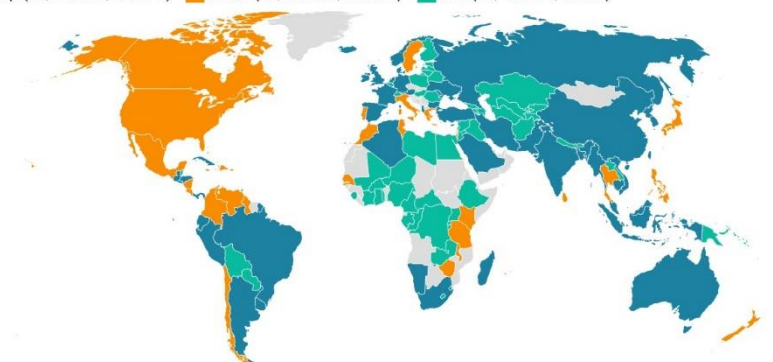
30-year trends of ENSG changes (1990–2020)

■ Up (66, 43.42%; 77.2%) ■ Down (37, 24.34%; 22.2%) ■ Flat (49, 32.24%; 0.39%)



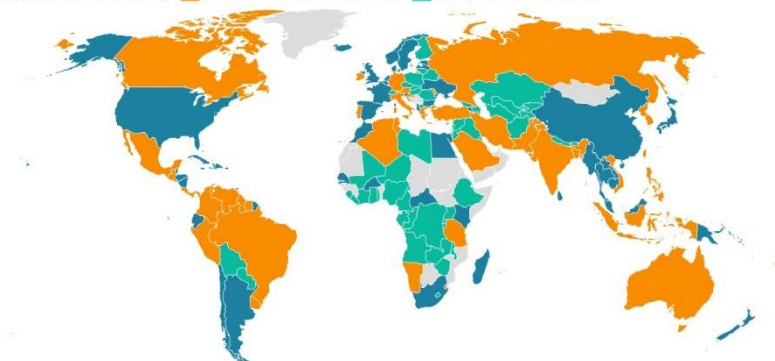
ENSG changes in the first decade (1990–2000)

■ Up (53, 34.42%; 85.91%) ■ Down (36, 23.38%; 12.85%) ■ Flat (65, 42.21%; 1.02%)



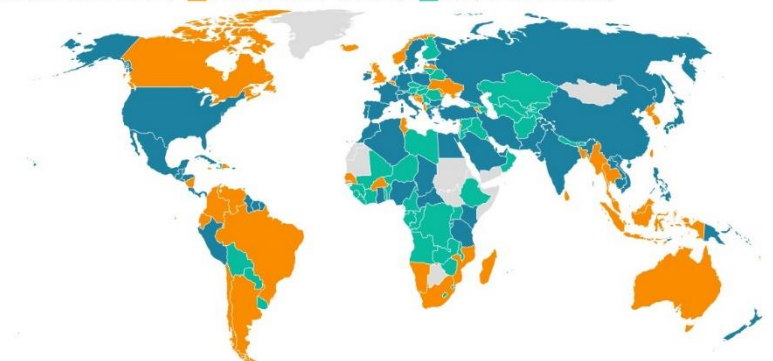
ENSG changes in the second decade (2000–2010)

■ Up (57, 33.93%; 76.67%) ■ Down (51, 30.36%; 22.55%) ■ Flat (60, 35.71%; 0.6%)



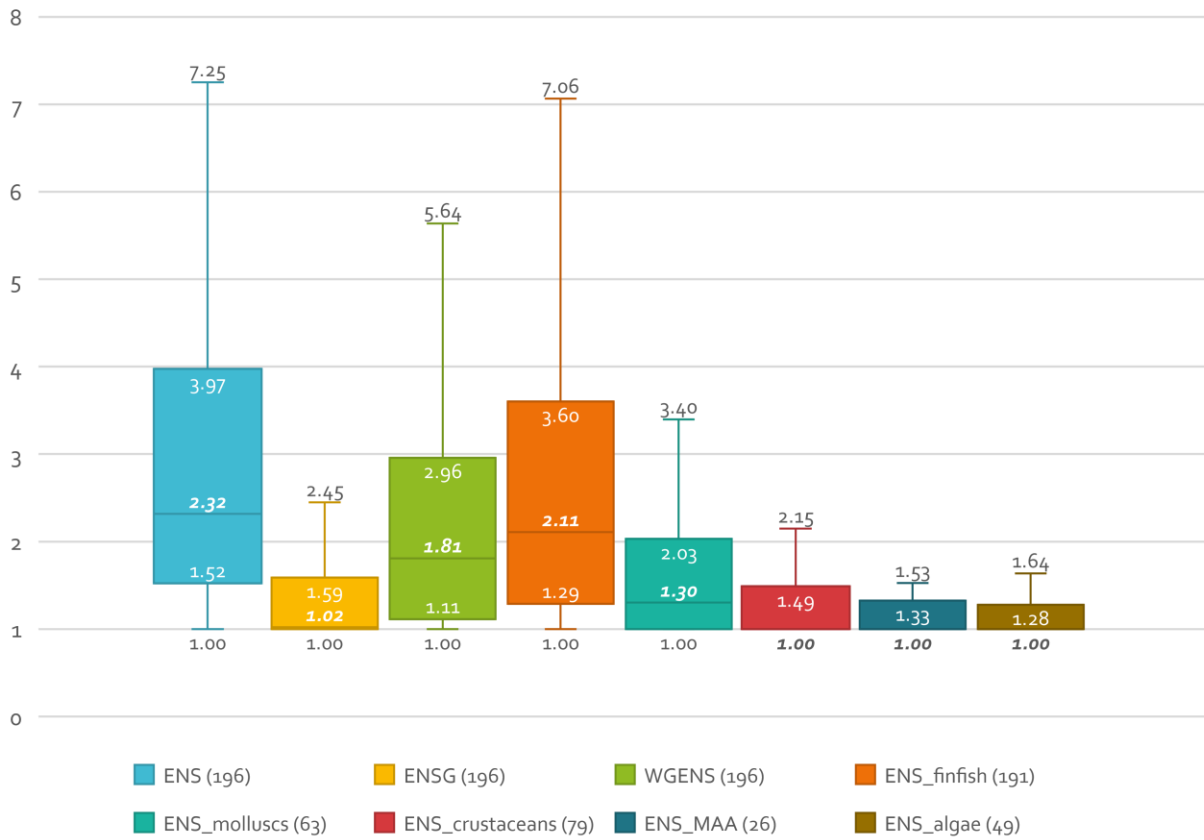
ENSG changes in the third decade (2010–2020)

■ Up (72, 38.92%; 75.27%) ■ Down (52, 28.11%; 24.17%) ■ Flat (61, 32.97%; 0.42%)



Notes: All maps were created using Datawrapper; the country/territory boundaries depicted therein do not represent authors' opinions. Countries/territories with a small land area may not be discernible on the maps. Down = ENSG decrease; Up = ENSG increase; and Flat = ENSG unchanged. In parentheses, the first number represents the number of national aquaculture in the category; the second number (in percentage) represents the prevalence of the category (i.e. the first number divided by the total number of countries in all categories); and the third number (in percentage) represents the category's share in world production during the period. National aquaculture that are not covered by the categorization, together with countries with no aquaculture, are illustrated in the grey colour.

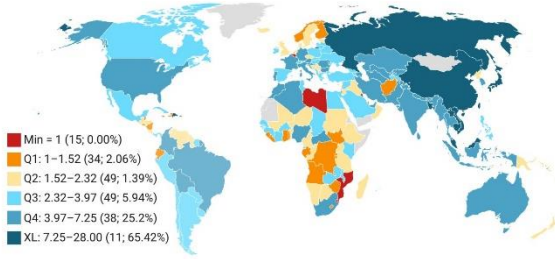
Supplementary Figure 8: Box-and-whisker plots of species diversity in national aquaculture, 2020



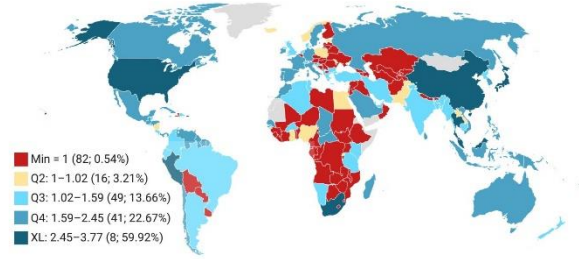
Notes: In the first bar (on ENS), the five numeric labels from bottom to top represent, respectively, the minimum ENS, the first quartile (25 percent), the median (50 percent, in bold and italic font), the third quartile (75 percent), and the “maximum” ENS excluding “outliers” that are extraordinarily large ENS with distance from the third quartile greater than 1.5 times of the height of the box (i.e. distance between the third quartile and the first quartile). When overlapped, only the label of a higher quartile is shown. In the legends, a number in parentheses represent the number of countries (including outliers) that farmed the species group. The outliers are not shown in the chart for clarity but presented in Supplementary Table 11. The quartile distributions are mapped in Supplementary Figure 9.

Supplementary Figure 9: Quartile distribution of measures of species diversity, 2020

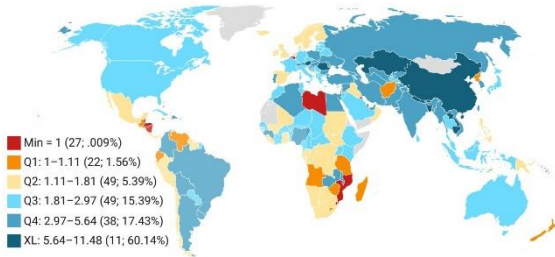
ENS (all species), 2020



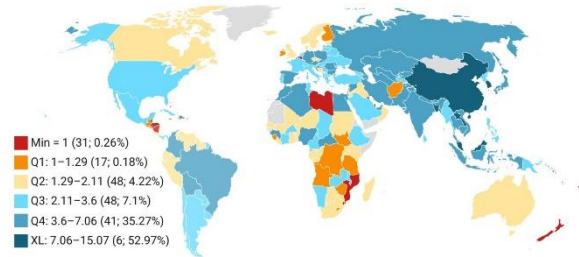
ENSG, 2020



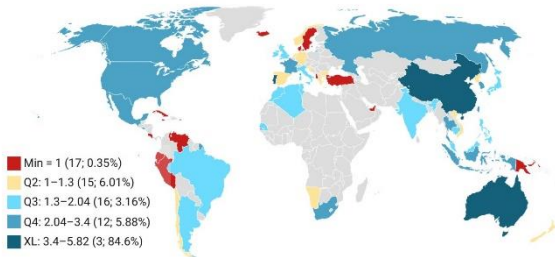
WGENS, 2020



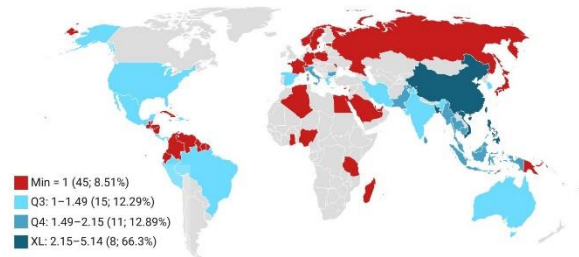
ENS (finfish), 2020



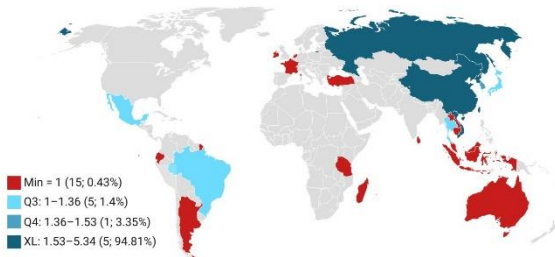
ENS (molluscs), 2020



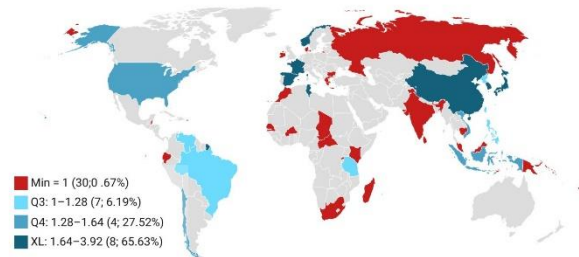
ENS (crustaceans), 2020



ENS (MAA), 2020



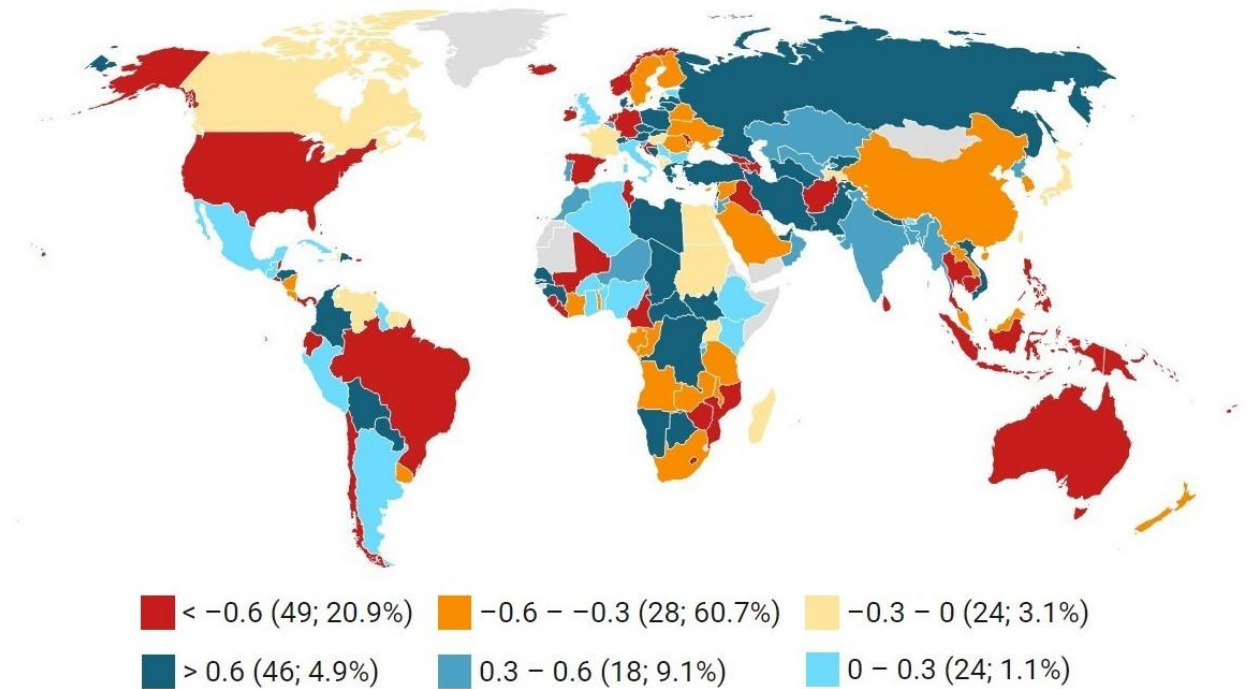
ENS (algae), 2020



Notes: The boundaries of the ranges are based on the quartile distributions illustrated in Supplementary Figure 8. The first three maps here are identical to map (a), (b), and (c) in Figure 3 in the main text. Readers may refer to the notes accompanying these two figures to better understand the maps presented here. All maps were created using Datawrapper; the country/territory boundaries depicted therein do not represent authors' opinions. Countries/territories with a small land area may not be discernible on the maps.

Supplementary Figure 10:

Temporal correlations between production and ENS, 2010–2020



Notes: In parentheses, the first number represents the number of national aquaculture in the category; the second number (in percentage) represents the category's share in world production during the period. For each country, there were up to 11 observations during 2010–2020. Thus, the temporal correlation between its production and ENS was statistically significant (p -value < 0.05) when $r > 0.6$ (dark blue) or $r < -0.6$ (dark red). Countries or territories that belong to these two categories are presented in Supplementary Table 14. All maps were created using Datawrapper; the country/territory boundaries depicted therein do not represent authors' opinions. Countries/territories with a small land area may not be discernible on the maps.

Supplementary Table 1a: Regional aquaculture with INCREASED species diversity, 1990–2020 and three sub-decades

Ranked by production share	Overall three decades (1990–2020): 22 regional aquaculture with increased ENS	First decade (1990–2000): 22 regional aquaculture with increased ENS	Second decade (2000–2010): 20 regional aquaculture with increased ENS	Third decade (2010–2020): 13 regional aquaculture with increased ENS
U1: ENS increased with both WGENS and ENSG up (share of world production during the period)				
1	<i>Developing regions (93.39 %)</i>	<i>Developing regions (88.24 %)</i>	<i>Developing regions (92.7 %)</i>	Southern Asia (8.09 %)
2	Asia (91.11 %)	South-eastern Asia (8.69 %)	Asia (90.83 %)	Central America (0.34 %)
3	Eastern Asia (66.19 %)	Southern Asia (6.69 %)	Eastern Asia (70.28 %)	Western Africa (0.32 %)
4	Southern Asia (7.52 %)	Southern Europe (1.54 %)	Southern Europe (0.98 %)	Eastern Europe (0.32 %)
5	Northern America (0.91 %)	Western Europe (1.41 %)	Western Europe (0.6 %)	Middle Africa (0.01 %)
6	Southern Europe (0.84 %)	Eastern Europe (0.7 %)	Eastern Africa (0.4 %)	
7	Western Europe (0.55 %)	Western Asia (0.21 %)	Oceania (0.27 %)	
8	Eastern Europe (0.38 %)	<i>Landlocked developing countries (0.19 %)</i>	Australia and New Zealand (0.25 %)	
9	Western Asia (0.32 %)	<i>Small Island Developing States (0.15 %)</i>	<i>Landlocked developing countries (0.24 %)</i>	
10	<i>Landlocked developing countries (0.31 %)</i>	Pacific islands (0.04 %)	Caribbean (0.06 %)	
11	Pacific islands (0.02 %)		Pacific islands (0.02 %)	
12	Middle Africa (0.01 %)		Southern Africa (0.01 %)	
13			Middle Africa (0.01 %)	
U2: ENS increased with only WGENS up (share of world production during the period)				
1	South America (2.15 %)	<i>World excluding China (36.16%)</i>	South-eastern Asia (13.42 %)	<i>Sub-Saharan Africa (0.78 %)</i>
2	Northern Africa (1.01 %)	<i>Developed regions (11.66 %)</i>	Africa (1.5 %)	Eastern Africa (0.44 %)
3	Eastern Africa (0.4 %)	Europe (5.34 %)	Eastern Europe (0.39 %)	<i>Landlocked developing countries (0.39 %)</i>
4	Western Africa (0.23 %)	Americas (3.36 %)	<i>Small Island Developing States (0.11 %)</i>	<i>Small Island Developing States (0.06 %)</i>
5	<i>Small Island Developing States (0.09 %)</i>	<i>Latin America and the Caribbean (1.78 %)</i>	Central Asia (0.01 %)	Central Asia (0.04 %)
6	Central Asia (0.04 %)	Northern America (1.57 %)		
7		South America (1.5 %)		
8		Northern Africa (0.38 %)		
9		Western Africa (0.07 %)		
10		Central Asia (0.06 %)		
U3: ENS increased with only ENSG up (share of world production during the period)				
1	Oceania (0.25 %)	Eastern Asia (74.5 %)	Northern America (1.12 %)	Northern America (0.61 %)
2	Australia and New Zealand (0.22 %)	Southern Africa (0.01 %)	Western Asia (0.3 %)	Southern Europe (0.6 %)
3	Caribbean (0.05 %)			Caribbean (0.03 %)
4	Southern Africa (0.01 %)			

Notes: This table is a rearrangement of relevant contents in Table 1. The share of each regional aquaculture in world production is presented in parentheses.

Supplementary Table 1b: Regional aquaculture with DECREASED species diversity, 1990–2020 and three sub-decades

Ranked by production share	Overall three decades (1990–2020): 10 regional aquaculture with decreased ENS	First decade (1990–2000): 10 regional aquaculture with decreased ENS	Second decade (2000–2010): 12 regional aquaculture with decreased ENS	Third decade (2010–2020): 19 regional aquaculture with decreased ENS
D1: ENS declined with both WGENS and ENSG down (share of world production during the period)				
1	<i>Developed regions (6.53 %)</i>	Northern Europe (1.68 %)	<i>World excluding China (34.91%)</i>	<i>World excluding China (42.01%)</i>
2	Europe (3.48 %)	Africa (0.72 %)	<i>Developed regions (7.27 %)</i>	South-eastern Asia (21.44 %)
3	Northern Europe (1.71 %)	<i>Sub-Saharan Africa (0.34 %)</i>	Europe (3.74 %)	<i>Developed regions (4.71 %)</i>
4	Central America (0.32 %)	Eastern Africa (0.25 %)	Northern Europe (1.77 %)	Americas (3.32 %)
5		Central America (0.19 %)	Central America (0.34 %)	Europe (2.88 %)
6			Western Africa (0.15 %)	<i>Latin America and the Caribbean (2.71 %)</i>
7				South America (2.34 %)
8				Northern Europe (1.69 %)
9				Western Europe (0.28 %)
10				Oceania (0.21 %)
D2: ENS declined with only WGENS down (share of world production during the period)				
1		Asia (90.16 %)	Americas (3.63 %)	<i>Developing regions (95.29 %)</i>
2		Oceania (0.33 %)	<i>Latin America and the Caribbean (2.51 %)</i>	Asia (91.55 %)
3		Australia and New Zealand (0.29 %)	South America (2.1 %)	Eastern Asia (61.61 %)
4		Caribbean (0.09 %)	Northern Africa (0.94 %)	Northern Africa (1.26 %)
5		Middle Africa (0.01 %)		Western Asia (0.37 %)
6				Australia and New Zealand (0.19 %)
7				Pacific islands (0.02 %)
8				Southern Africa (0.01 %)
D3: ENS declined with only ENSG down (share of world production during the period)				
1	<i>World excluding China (39.6%)</i>		Southern Asia (6.83 %)	Africa (2.04 %)
2	South-eastern Asia (17.05 %)		<i>Sub-Saharan Africa (0.57 %)</i>	
3	Americas (3.43 %)			
4	<i>Latin America and the Caribbean (2.51 %)</i>			
5	Africa (1.66 %)			
6	<i>Sub-Saharan Africa (0.64 %)</i>			

Notes: This table is a rearrangement of relevant contents in Table 1. The share of each regional aquaculture in world production is presented in parentheses.

Supplementary Table 2a: Inverted U-shape ENS trends, 1990–2020

Inverted U-shape: ENS increased in the first decade (or the second decade if no production in 1990) yet declined in the last decade. • Upward overall trends in blue: ENS ₂₀₂₀ > ENS ₁₉₉₀ (or ENS ₂₀₂₀ in case of no ENS ₁₉₉₀) • Downward overall trends in red: ENS ₂₀₂₀ < ENS ₁₉₉₀ (or ENS ₂₀₀₀ in case of no ENS ₁₉₉₀) Countries/territories indexed by their ranking in world aquaculture 2020 LLDCs = Landlocked Developing Countries SIDS = Small Island Developing States		Aquaculture production in 2020		Effective number of species (ENS)			
		Tonnes	Share of world production (%)	1990	2000	2010	2020
Total (59)	97 046 818	79.1701	n.a.	n.a.	n.a.	n.a.	
Africa (17)	1 840 400	1.5014	n.a.	n.a.	n.a.	n.a.	
8. Egypt	1 591 896	1.2987	3.27	3.95	3.90	3.77	
Landlocked (LLDCs)							
35. Uganda	123 897	0.1011	2.75	3.43	1.96	1.89	
45. Ghana	64 010	0.0522	1.70	1.90	1.39	1.36	
58. Tunisia	23 486	0.0192	6.92	7.34	5.45	2.95	
Island							
74. Madagascar	13 550	0.0111	1.75	2.42	3.10	2.11	
79. South Africa	9 753	0.0080	4.39	4.47	5.86	4.66	
Landlocked (LLDCs)							
85. Mali	7 686	0.0063	1.72	1.93	2.13	1.78	
114. Angola	2 062	0.0017		1.00	1.15	1.08	
Landlocked (LLDCs)							
123. Burundi	1 450	0.0012	1.00	1.18	1.43	1.30	
131. Congo	900	0.0007	1.00	1.00	2.49	1.60	
136. Togo	730	0.0006	1.00	1.00	2.13	1.31	
Landlocked (LLDCs)							
142. Ethiopia	534	0.0004	1.69	3.75	2.96	2.17	
146. Namibia	321	0.0003	1.00	3.59	4.15	1.61	
160. Sierra Leone	85	0.0001	1.00	1.00	1.28	1.25	
Island							
173. Mayotte	20	0.0000		1.00	1.64	1.00	
180. Libya	10	0.0000	1.00	2.95	2.55	1.00	
Island							
181. Réunion	10	0.0000	1.26	2.43	2.96	2.00	
Americas (10)	2 912 662	2.3761	n.a.	n.a.	n.a.	n.a.	
9. Chile	1 505 486	1.2282	3.92	5.05	4.48	3.39	
14. Ecuador	774 569	0.6319	1.53	1.77	1.66	1.11	
16. Brazil	630 200	0.5141	1.60	8.19	7.93	5.13	
113. Argentina	2 085	0.0017	1.00	2.71	3.20	3.12	
Island (SIDS)							
153. Guyana	138	0.0001	1.96	3.84	4.95	2.00	
Island (SIDS)							
159. Saint Lucia	92	0.0001	1.00	1.00	2.11	1.44	
Island (SIDS)							
162. Guadeloupe	45	0.0000	1.00	1.00	2.36	1.53	
Island (SIDS)							
163. Martinique	42	0.0000	2.17	2.75	2.47	1.68	
Island (SIDS)							
187. Trinidad and Tobago	4.2	0.0000	1.00	1.20	3.11	1.73	
190. French Guiana	2.0	0.0000	1.00	1.63	2.83	2.00	
Asia (17)	89 940 649	73.3729	n.a.	n.a.	n.a.	n.a.	
1. China	70 483 538	57.4999	13.57	16.61	28.18	28.00	
Island							
2. Indonesia	14 845 014	12.1105	10.26	10.30	6.40	5.63	
6. Republic of Korea	2 327 903	1.8991	6.90	7.14	7.74	6.95	
11. Myanmar	1 145 018	0.9341	1.11	1.22	4.70	3.98	
20. Cambodia	400 400	0.3266	5.52	6.03	8.20	7.70	
21. Malaysia	400 017	0.3263	4.26	9.47	9.12	8.47	

Inverted U-shape: ENS increased in the first decade (or the second decade if no production in 1990) yet declined in the last decade. • Upward overall trends in blue: ENS ₂₀₂₀ > ENS ₁₉₉₀ (or ENS ₂₀₂₀ in case of no ENS ₁₉₉₀) • Downward overall trends in red: ENS ₂₀₂₀ < ENS ₁₉₉₀ (or ENS ₂₀₀₀ in case of no ENS ₁₉₉₀) Countries/territories indexed by their ranking in world aquaculture 2020 LLDCs = Landlocked Developing Countries SIDS = Small Island Developing States		Aquaculture production in 2020		Effective number of species (ENS)			
		Tonnes	Share of world production (%)	1990	2000	2010	2020
Island	24. Taiwan Province of China	278 503	0.2272	11.40	15.66	11.21	11.04
	59. Iraq	22 704	0.0185	1.00	1.00	1.91	1.71
Landlocked (LLDCs)	66. Armenia	18 350	0.0150	1.93	2.70	3.51	2.77
Landlocked (LLDCs)	84. Afghanistan	8 050	0.0066	1.00	1.00	1.28	1.04
	98. China, Hong Kong Special Administrative Region	3 835	0.0031	12.05	12.27	9.52	7.25
Island	103. Brunei Darussalam	3 500	0.0029	3.46	4.86	3.82	2.47
	117. Georgia	2 027	0.0017	1.18	3.11	4.65	3.34
	134. Lebanon	828	0.0007	1.00	1.00	1.40	1.20
Landlocked (LLDCs)	135. Tajikistan	775	0.0006	2.06	2.41	3.82	2.94
Landlocked (LLDCs)	150. Bhutan	181	0.0001	1.00	1.00	7.15	6.31
Island (SIDS)	186. Bahrain	5.5	0.0000		1.00	2.48	1.36
	Europe (12)	2 246 879	1.8330	n.a.	n.a.	n.a.	n.a.
	10. Norway	1 490 412	1.2159	1.17	1.43	1.41	1.31
	25. Spain	276 571	0.2256	1.91	2.41	2.97	2.97
	28. France	191 350	0.1561	4.03	4.59	5.36	4.62
	36. Italy	122 778	0.1002	3.96	4.43	4.80	4.51
Island	42. Faeroe Islands	89 055	0.0727	1.03	1.17	1.20	1.01
Island	51. Iceland	40 595	0.0331	1.23	2.07	3.45	1.65
Landlocked (LLDCs)	75. Republic of Moldova	12 600	0.0103	1.99	5.27	4.57	4.17
	76. Romania	12 200	0.0100	4.49	5.34	7.01	5.93
	81. Albania	9 284	0.0076	1.58	2.14	3.72	3.36
	127. Channel Islands	1 107	0.0009	1.30	1.81	1.65	1.35
	137. Latvia	717	0.0006	1.00	1.80	2.51	2.51
	149. Belgium	209	0.0002	2.50	5.15	2.42	1.00
	Oceania (3)	106 228	0.0867	n.a.	n.a.	n.a.	n.a.
	39. Australia	106 088	0.0865	6.24	7.61	7.19	4.43
Island (SIDS)	154. Guam	118	0.0001	2.50	3.01	2.85	2.79
Island (SIDS)	172. Palau	22	0.0000	1.00	1.00	2.71	2.53

Supplementary Table 2b: Inverted N-shape ENS trends, 1990–2020

Inverted N-shape ENS trend: ENS decreased during first and third decades whereas increased during the second decade. • Upward overall trends in blue: $ENS_{2020} > ENS_{1990}$ • Downward overall trends in red: $ENS_{2020} < ENS_{1990}$ Countries/territories indexed by their ranking in world aquaculture 2020 LLDCs = Landlocked Developing Countries SIDS = Small Island Developing States	Aquaculture production in 2020		Effective number of species (ENS)				
	Tonnes	Share of world production (%)	1990	2000	2010	2020	
Total (18)	673 246	0.5492	n.a.	n.a.	n.a.	n.a.	
Africa (6)	62 533	0.0510	n.a.	n.a.	n.a.	n.a.	
Landlocked (LLDCs)	48. Zambia	45 670	0.0373	2.93	2.88	3.54	3.21
	92. Algeria	5 436	0.0044	3.34	2.76	5.51	4.48
	94. Côte d'Ivoire	4 620	0.0038	3.43	1.86	2.95	2.48
	102. Cameroon	3 556	0.0029	1.99	1.65	3.96	2.12
Landlocked (LLDCs)	109. Lesotho	2 600	0.0021	2.08	1.00	1.01	1.00
Landlocked (LLDCs)	138. Burkina Faso	651	0.0005	2.00	1.00	2.56	2.33
Americas (3)	56 528	0.0461	n.a.	n.a.	n.a.	n.a.	
	56. Nicaragua	29 410	0.0240	1.27	1.09	1.11	1.00
Island (SIDS)	57. Cuba	26 200	0.0214	3.98	3.25	4.00	3.97
Island (SIDS)	130. Jamaica	918	0.0007	1.08	1.02	1.19	1.05
Asia (2)	172 139	0.1404	n.a.	n.a.	n.a.	n.a.	
Landlocked (LLDCs)	34. Lao People's Democratic Republic	130 020	0.1061	8.00	5.12	10.39	10.33
Island	50. Sri Lanka	42 119	0.0344	1.14	1.07	5.88	5.17
Europe (3)	255 882	0.2087	n.a.	n.a.	n.a.	n.a.	
Island	27. United Kingdom	221 000	0.1803	2.44	1.79	2.13	1.69
Island	63. Malta	19 829	0.0162	1.89	1.48	2.00	1.71
	69. Finland	15 053	0.0123	1.08	1.07	1.31	1.26
Oceania (4)	126 164	0.1029	n.a.	n.a.	n.a.	n.a.	
Island	37. New Zealand	118 582	0.0967	1.74	1.53	1.60	1.57
Island (SIDS)	89. Papua New Guinea	6 102	0.0050	1.82	1.21	2.86	2.30
Island (SIDS)	122. New Caledonia	1 478	0.0012	1.51	1.11	1.25	1.03
Island (SIDS)	192. Kiribati	2.0	0.0000	1.04	1.01	1.02	1.00

Supplementary Table 2c: Straight-down ENS trends, 1990–2020

Straight down: ENS decreased in all three decades or the second and third decades in case of no aquaculture production in 1990 • Upward overall trends in blue: $ENS_{2020} > ENS_{1990}$ (or ENS_{2020} in case of no ENS_{1990}) • Downward overall trends in red: $ENS_{2020} < ENS_{1990}$ (or ENS_{2000} in case of no ENS_{1990}) Countries/territories indexed by their ranking in world aquaculture 2020 LLDCs = Landlocked Developing Countries SIDS = Small Island Developing States	Aquaculture production in 2020		Effective number of species (ENS)				
	Tonnes	Share of world production (%)	1990	2000	2010	2020	
Total (8)	273 105	0.2228	n.a.	n.a.	n.a.	n.a.	
Africa (3)	18 978	0.0155	n.a.	n.a.	n.a.	n.a.	
Landlocked (LLDCs)	68. Zimbabwe	15 425	0.0126	2.20	1.22	1.15	1.03
Island (SIDS)	104. Mauritius	3 298	0.0027	3.64	3.07	1.53	1.15
	147. Liberia	255	0.0002		3.35	1.69	1.48
Americas (2)	224 616	0.1832	n.a.	n.a.	n.a.	n.a.	
	30. Canada	171 007	0.1395	6.75	4.40	3.60	3.15
	46. Venezuela (Bolivarian Republic of)	53 609	0.0437	4.26	3.03	2.34	1.85
Asia (2)	7 793	0.0064	n.a.	n.a.	n.a.	n.a.	
Island	86. Cyprus	7 343	0.0060	2.53	2.38	2.20	2.05
	144. Kuwait	450	0.0004		3.76	1.15	1.00
Europe (1)	21 718	0.0177	n.a.	n.a.	n.a.	n.a.	
	60. Croatia	21 718	0.0177		7.30	7.14	5.12

Supplementary Table 2d: Straight-up ENS trends, 1990–2020

Straight-up: ENS increased in all three decades or the second and third decades in case of no aquaculture production in 1990 • Upward overall trends in blue: $ENS_{2020} > ENS_{1990}$ (or ENS_{2020} in case of no ENS_{1990}) • Downward overall trends in red: $ENS_{2020} < ENS_{1990}$ (or ENS_{2000} in case of no ENS_{1990}) Countries/territories indexed by their ranking in world aquaculture 2020 LLDCs = Landlocked Developing Countries SIDS = Small Island Developing States		Aquaculture production in 2020		Effective number of species (ENS)			
		Tonnes	Share of world production (%)	1990	2000	2010	2020
Total (31)	8 205 452	6.6939	n.a.	n.a.	n.a.	n.a.	
Africa (3)	4 299	0.0035	n.a.	n.a.	n.a.	n.a.	
	101. Democratic Republic of the Congo	3 590	0.0029	1.00	1.01	1.13	1.15
Landlocked (LLDCs)	139. Niger	649	0.0005	1.00	1.00	1.82	1.92
	161. Gabon	60	0.0000	1.00	1.24	1.31	1.33
Americas (3)	71 734	0.0585	n.a.	n.a.	n.a.	n.a.	
	44. Honduras	71 151	0.0580	1.20	1.62	1.96	1.99
Island (SIDS)	141. Belize	565	0.0005	1.00	1.00	1.43	1.47
Island (SIDS)	176. Puerto Rico	18	0.0000	1.13	1.79	1.97	2.65
Asia (10)	7 562 660	6.1696	n.a.	n.a.	n.a.	n.a.	
	4. Viet Nam	4 614 692	3.7646	2.91	4.22	6.43	8.24
	5. Bangladesh	2 583 866	2.1079	1.65	7.69	12.01	14.30
	31. Pakistan	162 462	0.1325	1.03	1.04	5.56	5.67
	40. Saudi Arabia	99 907	0.0815	1.21	2.16	2.19	3.95
Landlocked (LLDCs)	43. Nepal	76 822	0.0627	1.75	4.40	5.87	6.98
	71. Israel	14 700	0.0120	3.09	5.35	5.77	5.80
Island (SIDS)	93. Singapore	4 829	0.0039	4.38	4.79	8.07	11.67
Landlocked (LLDCs)	110. Kyrgyzstan	2 550	0.0021	1.80	2.09	2.95	3.98
	111. Syrian Arab Republic	2 300	0.0019	1.69	2.35	3.42	3.67
Landlocked (LLDCs)	143. Azerbaijan	533	0.0004	1.57	1.68	2.68	4.74
Europe (14)	561 255	0.4579	n.a.	n.a.	n.a.	n.a.	
	22. Russian Federation	291 194	0.2376	2.02	4.67	5.45	10.03
	47. Poland	47 700	0.0389	1.67	2.28	2.85	3.69
	49. Denmark	42 629	0.0348	1.13	1.31	1.62	2.24
	52. Netherlands	39 940	0.0326	1.14	1.61	1.95	2.18
Island	53. Ireland	37 751	0.0308	2.41	3.13	3.18	3.29
	55. Germany	32 258	0.0263	3.51	3.56	4.15	5.42
Landlocked	62. Czechia	20 401	0.0166		1.87	1.96	2.09
	70. Bulgaria	15 052	0.0123	1.93	5.37	6.02	6.24
	77. Sweden	12 090	0.0099	2.14	2.17	2.20	2.24
Landlocked	82. Belarus	9 266	0.0076	1.03	1.68	2.20	2.48
	95. Austria	4 527	0.0037	1.89	2.60	4.18	7.02
	96. Lithuania	4 477	0.0037	1.07	1.22	1.52	2.85
Landlocked	112. Slovakia	2 296	0.0019		1.85	2.11	3.82
	118. Slovenia	1 673	0.0014		2.78	3.64	4.38
Oceania (1)	5 504	0.0045	n.a.	n.a.	n.a.	n.a.	
Island (SIDS)	91. Solomon Islands	5 504	0.0045	1.00	1.00	1.00	1.01

Supplementary Table 2e: U-shape ENS trends, 1990–2020

U-shape: ENS declined in the first decade (or the second decade if no production in 1990) yet increased in the last decade • Upward overall trends in blue: ENS ₂₀₂₀ > ENS ₁₉₉₀ (or ENS ₂₀₂₀ in case of no ENS ₁₉₉₀) • Downward overall trends in red: ENS ₂₀₂₀ < ENS ₁₉₉₀ (or ENS ₂₀₀₀ in case of no ENS ₁₉₉₀) Countries/territories indexed by their ranking in world aquaculture 2020 LLDCs = Landlocked Developing Countries SIDS = Small Island Developing States		Aquaculture production in 2020		Effective number of species (ENS)			
		Tonnes	Share of world production (%)	1990	2000	2010	2020
Total (28)	5 889 312	4.8045	n.a.	n.a.	n.a.	n.a.	
Africa (5)	140 111	0.1143	n.a.	n.a.	n.a.	n.a.	
	38. United Republic of Tanzania	108 568	0.0886	1.18	1.03	1.03	1.70
	61. Kenya	20 831	0.0170	4.61	3.54	2.14	2.33
Landlocked (LLDCs)	80. Malawi	9 393	0.0077	2.52	1.32	3.10	3.56
	128. Senegal	1 100	0.0009	1.82	1.41	3.30	3.67
Landlocked (LLDCs)	148. Central African Republic	219	0.0002	1.21	1.00	3.33	4.86
Americas (10)	899 209	0.7336	n.a.	n.a.	n.a.	n.a.	
	18. United States of America	448 535	0.3659	5.08	4.82	5.76	6.60
	23. Mexico	278 694	0.2274	5.80	3.55	2.14	2.78
	32. Peru	143 830	0.1173	3.17	2.75	2.75	3.62
	67. Costa Rica	16 269	0.0133	2.65	1.99	2.02	2.12
	97. Panama	3 879	0.0032	2.07	2.02	2.01	3.04
Landlocked (LLDCs)	100. Bolivia (Plurinational State of)	3 720	0.0030	2.93	1.78	3.88	5.09
Island (SIDS)	108. Dominican Republic	2 680	0.0022	5.01	3.20	3.96	7.67
Island (SIDS)	121. Haiti	1 560	0.0013		1.76	1.38	1.52
Island (SIDS)	165. Suriname	37	0.0000		1.94	1.18	2.54
Island (SIDS)	185. Bahamas	6.0	0.0000	1.58	1.00	1.00	1.57
Asia (7)	4 712 007	3.8440	n.a.	n.a.	n.a.	n.a.	
Island	7. Philippines	2 322 831	1.8949	5.45	4.12	3.56	3.93
Island	12. Japan	996 297	0.8128	8.98	8.53	8.08	8.68
	13. Thailand	962 467	0.7852	8.28	7.48	6.70	7.24
	19. Türkiye	421 411	0.3438	3.47	2.86	3.03	3.61
Landlocked (LLDCs)	88. Kazakhstan	6 795	0.0055	1.89	1.31	3.73	7.06
	115. Jordan	2 055	0.0017	1.89	1.06	2.00	2.00
Landlocked (LLDCs)	151. Turkmenistan	150	0.0001	1.97	1.14	2.46	4.45
Europe (4)	136 509	0.1114	n.a.	n.a.	n.a.	n.a.	
	33. Greece	131 737	0.1075	4.41	3.80	3.45	3.69
Landlocked	116. Switzerland	2 048	0.0017	1.55	1.15	1.73	3.58
Landlocked (LLDCs)	119. North Macedonia	1 634	0.0013		2.64	1.72	2.13
	129. Estonia	1 090	0.0009	1.97	1.67	1.82	1.85
Oceania (2)	1 476	0.0012	n.a.	n.a.	n.a.	n.a.	
Island (SIDS)	124. French Polynesia	1 371	0.0011	2.43	1.48	1.14	1.54
Island (SIDS)	155. Tonga	105	0.0001		3.13	1.01	1.01

Supplementary Table 2f: N-shape ENS trends, 1990–2020

N-shape: ENS increased during first and third decades whereas declined during the second one • Upward overall trends in blue: $ENS_{2020} > ENS_{1990}$ • Downward overall trends in red: $ENS_{2020} < ENS_{1990}$ Countries/territories indexed by their ranking in world aquaculture 2020 LLDCs = Landlocked Developing Countries SIDS = Small Island Developing States		Aquaculture production in 2020		Effective number of species (ENS)			
		Tonnes	Share of world production (%)	1990	2000	2010	2020
Total (17)		10 458 029	8.5316	n.a.	n.a.	n.a.	n.a.
Africa (4)		270 420	0.2206	n.a.	n.a.	n.a.	n.a.
	26. Nigeria	261 711	0.2135	4.39	6.84	5.39	5.66
Landlocked (LLDCs)	87. Rwanda	7 059	0.0058	1.31	1.32	1.13	1.40
	120. Morocco	1 618	0.0013	4.01	6.85	5.68	6.51
	166. Gambia	33	0.0000	1.00	2.87	2.04	2.56
Americas (5)		235 705	0.1923	n.a.	n.a.	n.a.	n.a.
	29. Colombia	179 351	0.1463	3.26	5.52	4.51	5.25
	54. Guatemala	33 651	0.0275	1.86	5.12	1.18	1.98
Landlocked (LLDCs)	73. Paraguay	14 100	0.0115	2.79	4.85	2.09	2.83
	83. El Salvador	8 500	0.0069	1.83	2.12	1.38	1.51
	157. Uruguay	103	0.0001	1.00	1.98	1.59	3.27
Asia (4)		9 900 089	8.0764	n.a.	n.a.	n.a.	n.a.
	3. India	8 641 286	7.0495	5.51	6.15	4.55	6.58
	15. Democratic People's Republic of Korea	680 300	0.5550	1.91	2.20	1.55	1.59
	17. Iran (Islamic Republic of)	480 500	0.3920	3.56	4.49	4.16	4.90
Landlocked (LLDCs)	41. Uzbekistan	98 003	0.0800	2.01	3.16	2.82	4.97
Europe (3)		51 493	0.0420	n.a.	n.a.	n.a.	n.a.
	64. Ukraine	18 568	0.0151	1.64	2.57	1.89	3.08
Landlocked	65. Hungary	18 373	0.0150	2.36	3.04	2.97	3.05
	72. Portugal	14 552	0.0119	3.79	6.15	5.94	6.49
Oceania (1)		322	0.0003	n.a.	n.a.	n.a.	n.a.
Island (SIDS)	145. Fiji	322	0.0003	1.06	2.09	1.94	3.28

Supplementary Table 3: Categorizing ENS trends in regional aquaculture, 1990–2020

Inverted U-shape (14)	Straight-up (6)	U-shape (5)	Inverted N-shape (4)	N-shape (2)	Straight-down (1)
ENS increased between 1990 and 2020					
<i>Developing regions (95.8%; U1, U1, D2)</i>	Northern America (0.51%; U2, U3, U3)	Eastern Africa (0.29%; D1, U1, U2)	Asia (91.61%; D2, U1, D2)	Southern Asia (9.79%; U1, D3, U1)	
Eastern Asia (61%; U3, U1, D2)	Southern Europe (0.5%; U1, U1, U3)	Caribbean (0.03%; D2, U1, U3)	Oceania (0.2%; D2, U1, D1)	Western Africa (0.28%; U2, D1, U1)	
South America (2.7%; U2, D2, D1)	<i>LLDCs (0.48%; U1, U1, U2)</i>	Middle Africa (0.01%; D2, U1, U1)	AU & NZ (0.18; D2, U1, D2)		
Northern Africa (1.33%; U2, D2, D2)	Eastern Europe (0.37%; U1, U2, U1)				
Western Asia (0.49%; U1, U3, D2)	Central Asia (0.09%; U2, U2, U2)				
Western Europe (0.22%; U1, U1, D1)	<i>SIDS (0.05%; U1, U2, U2)</i>				
Pacific islands (0.01%; U1, U1, D2)					
Southern Africa (0.01%; U3, U1, D2)					
ENS declined between 1990 and 2020					
<i>World excluding China (42.5%; U2, D1, D1)</i>		<i>Sub-Saharan Africa (0.6%; D1, D3, U2)</i>	Africa (1.92%; D1, U2, D3)		Northern Europe (1.6%; D1, D1, D1)
South-eastern Asia (20.26%; U1, U2, D1)		Central America (0.36%; D1, D1, U1)			
<i>Developed regions (4.2%; U2, D1, D1)</i>					
Americas (3.59%; U2, D2, D1)					
<i>LAC (3.08%; U2, D2, D1)</i>					
Europe (2.68%; U2, D1, D1)					

Notes: This table is a rearrangement of relevant contents in Table 1. The share of each regional aquaculture in world production is presented in parentheses. The categorization of the six scenarios (U1, U2, U3, D1, D2, and D3) is presented in Table 2.

Supplementary Table 4: Within-group share in species diversity in regional aquaculture

World and 32 regional aquaculture	Average within-group share in overall species diversity (%)				
	Overall 1990–2020	First decade 1990–2000	Second decade 2000–2010	Third decade 2010–2020	Third decade minus first decade
World	67.33	66.46	67.62	67.94	1.49
<i>World excluding China</i>	68.79	67.70	69.95	68.93	1.23
<i>Developed regions</i>	65.83	64.72	66.23	66.65	1.93
<i>Developing regions</i>	65.84	64.22	66.22	67.12	2.90
<i>Small Island Developing States</i>	53.92	53.09	54.55	53.74	0.65
<i>Landlocked developing countries</i>	99.85	99.95	99.82	99.78	-0.17
Africa	78.22	72.95	77.41	84.69	11.74
<i>Sub-Saharan Africa</i>	63.44	56.23	60.94	72.85	16.62
Western Africa	99.38	99.39	99.47	99.27	-0.12
Northern Africa	98.76	98.33	99.15	98.91	0.58
Middle Africa	98.53	100.00	99.60	95.85	-4.15
Eastern Africa	44.61	37.34	43.13	52.49	15.15
Southern Africa	43.39	49.03	41.69	40.17	-8.87
Americas	62.10	59.90	64.79	62.39	2.49
<i>Latin America and the Caribbean</i>	57.59	54.92	60.47	58.18	3.26
Caribbean	72.93	79.49	73.60	65.52	-13.97
Northern America	58.82	59.66	60.46	56.86	-2.80
South America	55.85	49.85	60.82	58.07	8.23
Central America	44.99	49.85	43.48	40.95	-8.91
Asia	65.65	64.48	65.86	66.60	2.11
Central Asia	100.00	100.00	100.00	100.00	0.00
Western Asia	90.40	95.28	87.86	87.96	-7.32
Southern Asia	88.39	89.49	88.23	87.56	-1.93
Eastern Asia	61.85	61.08	62.25	62.20	1.12
South-eastern Asia	58.35	56.30	58.66	60.28	3.98
Europe	71.47	69.60	72.12	72.72	3.13
Eastern Europe	93.12	91.46	97.40	90.84	-0.62
Northern Europe	71.76	73.73	69.12	72.25	-1.49
Western Europe	65.85	64.66	66.03	66.73	2.07
Southern Europe	64.75	64.18	65.18	64.96	0.78
Oceania	46.77	47.97	47.66	44.55	-3.42
Australia and New Zealand	54.62	60.63	53.71	49.42	-11.21
Pacific islands	23.09	12.87	24.67	32.37	19.50

Notes: See Table 1 for the definitions of the 32 regional aquaculture.

Supplementary Table 5: National aquaculture in 2020 where within-group species diversity was the sole source of species diversity

Countries or territories with within-group share = 100 in 2020 (indexed by ranking in world production 2020) AF = Africa; AM = Americas; AS = Asia; ER = Europe; ON = Oceania LLDCs = Landlocked Developing Countries				Aquaculture production		ENS (= WGENS)	Single species group farmed
				Tonnes	Share of world (%)		
Overall 67 countries/territories				653 103	0.5328	n.a.	n.a.
AF	Landlocked	LLDCs	35. Uganda	123 897	0.1011	1.888	Finfish
AS	Landlocked	LLDCs	41. Uzbekistan	98 003	0.0800	4.967	Finfish
AS	Landlocked	LLDCs	43. Nepal	76 822	0.0627	6.982	Finfish
AF	Landlocked	LLDCs	48. Zambia	45 670	0.0373	3.212	Finfish
AS			59. Iraq	22 704	0.0185	1.708	Finfish
ER	Landlocked		62. Czechia	20 401	0.0166	2.085	Finfish
ER			63. Malta	19 829	0.0162	1.713	Finfish
ER			64. Ukraine	18 568	0.0151	3.078	Finfish
ER	Landlocked		65. Hungary	18 373	0.0150	3.053	Finfish
AS	Landlocked	LLDCs	66. Armenia	18 350	0.0150	2.770	Finfish
AF	Landlocked	LLDCs	68. Zimbabwe	15 425	0.0126	1.027	Finfish
ER			69. Finland	15 053	0.0123	1.264	Finfish
AS			71. Israel	14 700	0.0120	5.804	Finfish
AM	Landlocked	LLDCs	73. Paraguay	14 100	0.0115	2.829	Finfish
ER			76. Romania	12 200	0.0100	5.934	Finfish
AF			78. Sudan	9 850	0.0080	1.656	Finfish
AF	Landlocked	LLDCs	80. Malawi	9 393	0.0077	3.560	Finfish
ER	Landlocked		82. Belarus	9 266	0.0076	2.479	Finfish
AS	Landlocked	LLDCs	84. Afghanistan	8 050	0.0066	1.038	Finfish
AF	Landlocked	LLDCs	85. Mali	7 686	0.0063	1.778	Finfish
AS	Landlocked	LLDCs	88. Kazakhstan	6 795	0.0055	7.064	Finfish
ER	Landlocked		90. Serbia	6 010	0.0049	2.301	Finfish
AF			94. Côte d'Ivoire	4 620	0.0038	2.485	Finfish
ER			95. Austria	4 527	0.0037	7.018	Finfish
ER			96. Lithuania	4 477	0.0037	2.847	Finfish
ER			99. Bosnia and Herzegovina	3 776	0.0031	1.893	Finfish
AM	Landlocked	LLDCs	100. Bolivia (Plurinational State of)	3 720	0.0030	5.088	Finfish
AF			101. Democratic Republic of the Congo	3 590	0.0029	1.153	Finfish
AF			102. Cameroon	3 556	0.0029	2.123	Finfish
AF			107. Benin	2 987	0.0024	1.998	Finfish
AF	Landlocked	LLDCs	109. Lesotho	2 600	0.0021	1.003	Finfish
AS	Landlocked	LLDCs	110. Kyrgyzstan	2 550	0.0021	3.978	Finfish
AS			111. Syrian Arab Republic	2 300	0.0019	3.672	Finfish
ER	Landlocked		112. Slovakia	2 296	0.0019	3.821	Finfish
AF			114. Angola	2 062	0.0017	1.078	Finfish
AS			115. Jordan	2 055	0.0017	2.000	Finfish
AS			117. Georgia	2 027	0.0017	3.337	Finfish
ER	Landlocked	LLDCs	119. North Macedonia	1 634	0.0013	2.132	Finfish
AM			121. Haiti	1 560	0.0013	1.522	Finfish
AF	Landlocked	LLDCs	123. Burundi	1 450	0.0012	1.298	Finfish
AS			125. Oman	1 307	0.0011	1.624	Finfish
AF			126. Guinea	1 135	0.0009	3.711	Finfish
ER			127. Channel Islands	1 107	0.0009	1.346	Molluscs
AF			131. Congo	900	0.0007	1.600	Finfish
AS	Landlocked	LLDCs	135. Tajikistan	775	0.0006	2.943	Finfish
AF			136. Togo	730	0.0006	1.305	Finfish
ER			137. Latvia	717	0.0006	2.511	Finfish
AF	Landlocked	LLDCs	139. Niger	649	0.0005	1.924	Finfish

Countries or territories with within-group share = 100 in 2020 (indexed by ranking in world production 2020) AF = Africa; AM = Americas; AS = Asia; ER = Europe; ON = Oceania LLDCs = Landlocked Developing Countries				Aquaculture production		ENS (= WGENS)	Single species group farmed
				Tonnes	Share of world (%)		
AS			140. State of Palestine	600	0.0005	1.697	Finfish
AF	Landlocked	LLDCs	142. Ethiopia	534	0.0004	2.172	Finfish
AS	Landlocked	LLDCs	143. Azerbaijan	533	0.0004	4.739	Finfish
AF			147. Liberia	255	0.0002	1.485	Finfish
AS	Landlocked	LLDCs	150. Bhutan	181	0.0001	6.315	Finfish
AS	Landlocked	LLDCs	151. Turkmenistan	150	0.0001	4.452	Finfish
AF	Landlocked	LLDCs	152. Botswana	146	0.0001	1.760	Finfish
ON			155. Tonga	105	0.0001	1.014	Algae
AM			157. Uruguay	103	0.0001	3.275	Finfish
AF			160. Sierra Leone	85	0.0001	1.251	Finfish
AF			161. Gabon	60	0.0000	1.332	Finfish
AF	Landlocked	LLDCs	167. South Sudan	30	0.0000	1.278	Finfish
ON			172. Palau	22	0.0000	2.533	Finfish
AF			177. Equatorial Guinea	15	0.0000	2.693	Finfish
AF			181. Réunion	10	0.0000	2.000	Finfish
AM			184. United States Virgin Islands	8	0.0000	2.828	Finfish
AS			186. Bahrain	6	0.0000	1.356	Finfish
AM			187. Trinidad and Tobago	4	0.0000	1.731	Finfish
AM			191. French Guiana	2	0.0000	2.000	Finfish

Supplementary Table 6: Species diversity in landlocked aquaculture, 2020

Landlocked aquaculture in 2020 (indexed by their ranking in world production 2020) AF = Africa; AM = Americas; AS = Asia; ER = Europe; ON = Oceania LLDCs = Landlocked Developing Countries			Aquaculture production, 2020		Diversity measures			Within-group share (%)
			Tonnes	Share of world (%)	ENS	WGENS	ENSG	
Overall 37 landlocked aquaculture			648 292	0.5289	n.a.	n.a.	n.a.	n.a.
AS	LLDCs	34. Lao People's Democratic Republic	130 020	0.1061	10.33	10.26	1.01	99.7
AF	LLDCs	35. Uganda	123 897	0.1011	1.89	1.89	1.00	100.0
AS	LLDCs	41. Uzbekistan	98 003	0.0800	4.97	4.97	1.00	100.0
AS	LLDCs	43. Nepal	76 822	0.0627	6.98	6.98	1.00	100.0
AF	LLDCs	48. Zambia	45 670	0.0373	3.21	3.21	1.00	100.0
ER		62. Czechia	20 401	0.0166	2.09	2.09	1.00	100.0
ER		65. Hungary	18 373	0.0150	3.05	3.05	1.00	100.0
AS	LLDCs	66. Armenia	18 350	0.0150	2.77	2.77	1.00	100.0
AF	LLDCs	68. Zimbabwe	15 425	0.0126	1.03	1.03	1.00	100.0
AM	LLDCs	73. Paraguay	14 100	0.0115	2.83	2.83	1.00	100.0
ER	LLDCs	75. Republic of Moldova	12 600	0.0103	4.17	4.16	1.00	99.8
AF	LLDCs	80. Malawi	9 393	0.0077	3.56	3.56	1.00	100.0
ER		82. Belarus	9 266	0.0076	2.48	2.48	1.00	100.0
AS	LLDCs	84. Afghanistan	8 050	0.0066	1.04	1.04	1.00	100.0
AF	LLDCs	85. Mali	7 686	0.0063	1.78	1.78	1.00	100.0
AF	LLDCs	87. Rwanda	7 059	0.0058	1.40	1.39	1.00	98.8
AS	LLDCs	88. Kazakhstan	6 795	0.0055	7.06	7.06	1.00	100.0
ER		90. Serbia	6 010	0.0049	2.30	2.30	1.00	100.0
AM	LLDCs	100. Bolivia (Plurinational State of)	3 720	0.0030	5.09	5.09	1.00	100.0
AF	LLDCs	109. Lesotho	2 600	0.0021	1.003	1.003	1.00	100.0
AS	LLDCs	110. Kyrgyzstan	2 550	0.0021	3.98	3.98	1.00	100.0
ER		112. Slovakia	2 296	0.0019	3.82	3.82	1.00	100.0
ER		116. Switzerland	2 048	0.0017	3.58	3.32	1.08	94.0
ER	LLDCs	119. North Macedonia	1 634	0.0013	2.13	2.13	1.00	100.0
AF	LLDCs	123. Burundi	1 450	0.0012	1.30	1.30	1.00	100.0
AS	LLDCs	135. Tajikistan	775	0.0006	2.94	2.94	1.00	100.0
AF	LLDCs	138. Burkina Faso	651	0.0005	2.33	2.22	1.05	93.8
AF	LLDCs	139. Niger	649	0.0005	1.92	1.92	1.00	100.0
AF	LLDCs	142. Ethiopia	534	0.0004	2.17	2.17	1.00	100.0
AS	LLDCs	143. Azerbaijan	533	0.0004	4.74	4.74	1.00	100.0
AF	LLDCs	148. Central African Republic	219	0.0002	4.86	2.84	1.71	66.0
AS	LLDCs	150. Bhutan	181	0.0001	6.31	6.31	1.00	100.0
AS	LLDCs	151. Turkmenistan	150	0.0001	4.45	4.45	1.00	100.0
AF	LLDCs	152. Botswana	146	0.0001	1.76	1.76	1.00	100.0
AF	LLDCs	156. Chad	105	0.0001	3.42	2.10	1.63	60.4
AF	LLDCs	158. Eswatini	100	0.0001	1.00	1.00	1.00	n.a.
AF	LLDCs	167. South Sudan	30	0.00002	1.28	1.28	1.00	100.0

Supplementary Table 7: National aquaculture in 2020 with between-group diversity greater than within-group diversity (ENSG > WGNES)

55 countries/territories with ENSG > WGENS in 2020 (indexed by ranking in world production 2020) AF = Africa; AM = Americas; AS = Asia; ER = Europe; ON = Oceania SIDS = Small Island Developing States				Aquaculture production		Overall Species diversity (ENS)	Within-group diversity		Between-group diversity	
				Tonnes	Share of world (%)		WGENS	Within-group share (%)	ENSG	Between-group share (%)
Overall 55 countries/territories				9 597 813	7.8298	n.a.	n.a.	n.a.	n.a.	
AS		Island	7. Philippines	2 322 831	1.8949	3.934	1.632	36	2.411	64
AM			9. Chile	1 505 486	1.2282	3.385	1.770	47	1.913	53
AS		Island	12. Japan	996 297	0.8128	8.684	2.776	47	3.128	53
AS			13. Thailand	962 467	0.7852	7.237	2.653	49	2.728	51
AM			14. Ecuador	774 569	0.6319	1.109	1.013	12	1.095	88
AS			15. Democratic People's Republic of Korea	680 300	0.5550	1.593	1.056	12	1.508	88
AM			18. United States of America	448 535	0.3659	6.604	2.353	45	2.807	55
AS			21. Malaysia	400 017	0.3263	8.467	2.719	47	3.114	53
AM			23. Mexico	278 694	0.2274	2.776	1.356	30	2.048	70
ER			25. Spain	276 571	0.2256	2.966	1.607	44	1.846	56
AM			32. Peru	143 830	0.1173	3.615	1.235	16	2.928	84
ON		Island	37. New Zealand	118 582	0.0967	1.573	1.067	14	1.474	86
AF			38. United Republic of Tanzania	108 568	0.0886	1.705	1.091	16	1.563	84
AS			40. Saudi Arabia	99 907	0.0815	3.952	1.980	50	1.996	50
ER		Island	42. Faeroe Islands	89 055	0.0727	1.010	1.001	9	1.009	91
AM			44. Honduras	71 151	0.0580	1.992	1.000	-	1.992	100
AM			46. Venezuela (Bolivarian Republic of)	53 609	0.0437	1.853	1.047	7	1.770	93
ER			49. Denmark	42 629	0.0348	2.237	1.464	47	1.528	53
ER			52. Netherlands	39 940	0.0326	2.179	1.463	49	1.490	51
ER		Island	53. Ireland	37 751	0.0308	3.285	1.688	44	1.947	56
AM			54. Guatemala	33 651	0.0275	1.981	1.016	2	1.951	98
AM			56. Nicaragua	29 410	0.0240	1.003	1.000	-	1.003	100
AM			67. Costa Rica	16 269	0.0133	2.116	1.418	47	1.493	53
AF		Island	74. Madagascar	13 550	0.0111	2.114	1.004	1	2.105	99
ER			77. Sweden	12 090	0.0099	2.237	1.375	40	1.627	60
AF			79. South Africa	9 753	0.0080	4.660	1.701	35	2.740	65
AM			83. El Salvador	8 500	0.0069	1.506	1.008	2	1.494	98
ON	SIDS	Island	89. Papua New Guinea	6 102	0.0050	2.302	1.252	27	1.840	73
ON	SIDS	Island	91. Solomon Islands	5 504	0.0045	1.006	1.000	-	1.006	100
AM			97. Panama	3 879	0.0032	3.038	1.535	39	1.979	61
ON	SIDS	Island	122. New Caledonia	1 478	0.0012	1.031	1.004	14	1.026	86
ON	SIDS	Island	124. French Polynesia	1 371	0.0011	1.539	1.043	10	1.476	90
AF			128. Senegal	1 100	0.0009	3.665	1.837	47	1.995	53

55 countries/territories with ENSG > WGENS in 2020 (indexed by ranking in world production 2020) AF = Africa; AM = Americas; AS = Asia; ER = Europe; ON = Oceania SIDS = Small Island Developing States				Aquaculture production		Overall Species diversity (ENS)	Within-group diversity		Between-group diversity	
				Tonnes	Share of world (%)		WGENS	Within-group share (%)	ENSG	Between-group share (%)
AM	SIDS	Island	130. Jamaica	918	0.0007	1.048	1.018	38	1.029	62
ER			132. Montenegro	885	0.0007	2.869	1.589	44	1.806	56
AS	SIDS	Island	133. Timor-Leste	835	0.0007	1.732	1.105	18	1.568	82
AM	SIDS		141. Belize	565	0.0005	1.474	1.000	-	1.474	100
ON	SIDS	Island	145. Fiji	322	0.0003	3.279	1.170	13	2.802	87
AF			146. Namibia	321	0.0003	1.609	1.124	25	1.431	75
AM	SIDS		153. Guyana	138	0.0001	1.999	1.165	22	1.716	78
AM	SIDS	Island	159. Saint Lucia	92	0.0001	1.441	1.000	-	1.441	100
AM	SIDS	Island	163. Martinique	42	0.0000	1.680	1.115	21	1.507	79
ON	SIDS	Island	164. Northern Mariana Islands	41	0.0000	2.205	1.103	12	1.999	88
AM	SIDS		165. Suriname	37	0.0000	2.543	1.419	37	1.792	63
AF			166. Gambia	33	0.0000	2.563	1.311	29	1.955	71
AM	SIDS	Island	168. Barbados	26	0.0000	1.101	1.000	-	1.101	100
AS			169. Qatar	23	0.0000	1.164	1.000	-	1.164	100
AM	SIDS	Island	170. Grenada	23	0.0000	1.112	1.000	-	1.112	100
AM	SIDS	Island	174. Antigua and Barbuda	20	0.0000	2.000	1.000	-	2.000	100
AM	SIDS	Island	176. Puerto Rico	18	0.0000	2.648	1.401	35	1.890	65
ON	SIDS	Island	179. Samoa	10	0.0000	1.011	1.001	7	1.011	93
ON	SIDS	Island	182. Marshall Islands	10	0.0000	1.579	1.000	-	1.579	100
AM	SIDS	Island	185. Bahamas	6	0.0000	1.569	1.000	-	1.569	100
ON	SIDS	Island	188. Vanuatu	3	0.0000	1.989	1.226	30	1.622	70
AM	SIDS	Island	190. Saint Kitts and Nevis	2	0.0000	2.000	1.000	-	2.000	100

Supplementary Table 8: Species diversity in island aquaculture, 2020

Island aquaculture in 2020 (indexed by their ranking in world production 2020) AF = Africa; AM = Americas; AS = Asia; ER = Europe; ON = Oceania SIDS = Small Island Developing States				Aquaculture production, 2020		Diversity measures			Between- group share (%)
				Tonnes	Share of world (%)	ENS	WGENS	ENSG	
Overall 60 island aquaculture				19 092 507	15.5755	n.a.	n.a.	n.a.	n.a.
28 island aquaculture with ENSG > WGENS (highlighted in red)				3 595 628	2.9333	n.a.	n.a.	n.a.	n.a.
22 island aquaculture with ENSG < WGENS				15 496 796	12.6422	n.a.	n.a.	n.a.	n.a.
10 island aquaculture with no species diversity (ENS = 1; italic)				83	0.0001	n.a.	n.a.	n.a.	n.a.
AS	Island		2. Indonesia	14 845 014	12.1105	5.63	2.47	2.28	48
AS	Island		7. Philippines	2 322 831	1.8949	3.93	1.63	2.41	64
AS	Island		12. Japan	996 297	0.8128	8.68	2.78	3.13	53
AS	Island		24. Taiwan Province of China	278 503	0.2272	11.04	4.65	2.38	36
ER	Island		27. United Kingdom	221 000	0.1803	1.69	1.34	1.26	45
ON	Island		37. New Zealand	118 582	0.0967	1.57	1.07	1.47	86
ER	Island		42. Faeroe Islands	89 055	0.0727	1.01	1.00	1.01	91
AS	Island		50. Sri Lanka	42 119	0.0344	5.17	2.93	1.77	35
ER	Island		51. Iceland	40 595	0.0331	1.65	1.65	1.00	0
ER	Island		53. Ireland	37 751	0.0308	3.29	1.69	1.95	56
AM	Island	SIDS	57. Cuba	26 200	0.0214	3.97	2.09	1.90	47
ER	Island		63. Malta	19 829	0.0162	1.71	1.71	1.00	0
AF	Island		74. Madagascar	13 550	0.0111	2.11	1.00	2.10	99
AS	Island		86. Cyprus	7 343	0.0060	2.05	2.02	1.02	2
ON	Island	SIDS	89. Papua New Guinea	6 102	0.0050	2.30	1.25	1.84	73
ON	Island	SIDS	91. Solomon Islands	5 504	0.0045	1.01	1.00	1.01	100
AS	Island	SIDS	93. Singapore	4 829	0.0039	11.67	6.06	1.93	27
AS	Island		103. Brunei Darussalam	3 500	0.0029	2.47	1.68	1.47	43
AF	Island	SIDS	104. Mauritius	3 298	0.0027	1.15	1.11	1.04	26
AM	Island	SIDS	108. Dominican Republic	2 680	0.0022	7.67	5.26	1.46	18
AM	Island	SIDS	121. Haiti	1 560	0.0013	1.52	1.52	1.00	0
ON	Island	SIDS	122. New Caledonia	1 478	0.0012	1.03	1.00	1.03	86
ON	Island	SIDS	124. French Polynesia	1 371	0.0011	1.54	1.04	1.48	90
AM	Island	SIDS	130. Jamaica	918	0.0007	1.05	1.02	1.03	62
AS	Island	SIDS	133. Timor-Leste	835	0.0007	1.73	1.10	1.57	82
AM		SIDS	141. Belize	565	0.0005	1.47	1.00	1.47	100
ON	Island	SIDS	145. Fiji	322	0.0003	3.28	1.17	2.80	87
AM		SIDS	153. Guyana	138	0.0001	2.00	1.17	1.72	78
ON	Island	SIDS	154. Guam	118	0.0001	2.79	1.94	1.44	36

Island aquaculture in 2020 (indexed by their ranking in world production 2020) AF = Africa; AM = Americas; AS = Asia; ER = Europe; ON = Oceania SIDS = Small Island Developing States				Aquaculture production, 2020		Diversity measures			Between-group share (%)
				Tonnes	Share of world (%)	ENS	WGENS	ENSG	
ON	Island	SIDS	155. Tonga	105	0.0001	1.01	1.01	1.00	0
AM	Island	SIDS	159. Saint Lucia	92	0.0001	1.44	1.00	1.44	100
AM	Island	SIDS	162. Guadeloupe	45	0.0000	1.53	1.27	1.20	43
AM	Island	SIDS	163. Martinique	42	0.0000	1.68	1.11	1.51	79
ON	Island	SIDS	164. Northern Mariana Islands	41	0.0000	2.21	1.10	2.00	88
AM		SIDS	165. Suriname	37	0.0000	2.54	1.42	1.79	63
AM	Island	SIDS	168. Barbados	26	0.0000	1.10	1.00	1.10	100
AM	Island	SIDS	170. Grenada	23	0.0000	1.11	1.00	1.11	100
AF	Island	SIDS	171. Cabo Verde	22	0.0000	1.00	1.00	1.00	
ON	Island	SIDS	172. Palau	22	0.0000	2.53	2.53	1.00	0
ON	Island	SIDS	173. American Samoa	20	0.0000	1.00	1.00	1.00	
AM	Island	SIDS	174. Antigua and Barbuda	20	0.0000	2.00	1.00	2.00	100
AF	Island		175. Mayotte	20	0.0000	1.00	1.00	1.00	
AM	Island	SIDS	176. Puerto Rico	18	0.0000	2.65	1.40	1.89	65
AM	Island	SIDS	178. Saint Vincent and the Grenadines	13	0.0000	1.00	1.00	1.00	
ON	Island	SIDS	179. Samoa	10	0.0000	1.01	1.00	1.01	93
AF	Island		181. Réunion	10	0.0000	2.00	2.00	1.00	0
ON	Island	SIDS	182. Marshall Islands	10	0.0000	1.58	1.00	1.58	100
ON	Island	SIDS	183. Cook Islands	8.5	0.0000	2.92	2.03	1.44	34
AM	Island	SIDS	184. United States Virgin Islands	8.0	0.0000	2.83	2.83	1.00	0
AM	Island	SIDS	185. Bahamas	6.0	0.0000	1.57	1.00	1.57	100
AS	Island	SIDS	186. Bahrain	5.5	0.0000	1.36	1.36	1.00	0
AM	Island	SIDS	187. Trinidad and Tobago	4.2	0.0000	1.73	1.73	1.00	0
ON	Island	SIDS	188. Vanuatu	3.1	0.0000	1.99	1.23	1.62	70
ON	Island	SIDS	189. Tuvalu	2.5	0.0000	1.00	1.00	1.00	
ON	Island	SIDS	191. Kiribati	2.0	0.0000	1.00	1.00	1.00	
AM	Island	SIDS	192. Saint Kitts and Nevis	2.0	0.0000	2.00	1.00	2.00	100
AM	Island	SIDS	193. Aruba	1.5	0.0000	1.00	1.00	1.00	
AM	Island	SIDS	194. British Virgin Islands	1.0	0.0000	1.00	1.00	1.00	
ON	Island	SIDS	195. Nauru	0.5	0.0000	1.00	1.00	1.00	
AM	Island		196. Bonaire, Sint Eustatius and Saba	0.2	0.0000	1.00	1.00	1.00	

Supplementary Table 9a: National aquaculture whose ENS trend during 1990–2020 belonged to the category of U3

16 national aquaculture whose diversity change between 1990 and 2020 belonged to the category of U3 = ENS increase (only ENSG up); see Figure 2a.		Aquaculture production, 2020		Diversity in 1990			Diversity in 2020			Diversity change between 1990 and 2020		
		Tonnes	Share of world (%)	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ΔENS	ΔWGENS	ΔENSG
AS	India	8 641 286	7.0495	5.51	4.74	1.16	6.58	4.59	1.43	1.07	-0.15	0.27
AS	Iran (Islamic Republic of)	480 500	0.3920	3.56	3.56	1.00	4.90	3.53	1.39	1.33	-0.04	0.39
AS	Türkiye	421 411	0.3438	3.47	3.47	1.00	3.61	3.42	1.06	0.14	-0.05	0.06
AM	Peru	143 830	0.1173	3.17	1.46	2.17	3.62	1.23	2.93	0.44	-0.23	0.75
AM	Honduras	71 151	0.0580	1.20	1.02	1.18	1.99	1.00	1.99	0.80	-0.02	0.81
AM	Guatemala	33 651	0.0275	1.86	1.15	1.61	1.98	1.02	1.95	0.13	-0.13	0.34
AF	Madagascar	13 550	0.0111	1.75	1.50	1.17	2.11	1.00	2.10	0.37	-0.49	0.94
ER	Sweden	12 090	0.0099	2.14	1.45	1.47	2.24	1.38	1.63	0.09	-0.08	0.15
AF	South Africa	9 753	0.0080	4.39	2.13	2.06	4.66	1.70	2.74	0.27	-0.43	0.68
ON	Papua New Guinea	6 102	0.0050	1.82	1.82	1.00	2.30	1.25	1.84	0.48	-0.57	0.84
ON	Solomon Islands	5 504	0.0045	1.00	1.00	1.00	1.01	1.00	1.01	0.01	0.00	0.01
AM	Panama	3 879	0.0032	2.07	1.54	1.35	3.04	1.54	1.98	0.96	-0.01	0.63
AM	Belize	565	0.0005	1.00	1.00	1.00	1.47	1.00	1.47	0.47	0.00	0.47
ON	Guam	118	0.0001	2.50	2.50	1.00	2.79	1.94	1.44	0.29	-0.56	0.44
AM	Saint Lucia	92	0.0001	1.00	1.00	1.00	1.44	1.00	1.44	0.44	0.00	0.44
AM	Saint Kitts and Nevis	2	0.0000	1.00	1.00	1.00	2.00	1.00	2.00	1.00	0.00	1.00

Supplementary Table 9b: National aquaculture whose ENS trend during 1990–2020 belonged to the category of D3

7 national aquaculture whose diversity change between 1990 and 2020 belonged to the category of D3 = ENS decrease (only ENSG down); see Figure 2a.		Aquaculture production, 2020		Diversity in 1990			Diversity in 2020			Diversity change between 1990 and 2020		
		Tonnes	Share of world (%)	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ΔENS	ΔWGENS	ΔENSG
AM	Chile	1 505 486	1.2282	3.92	1.66	2.36	3.39	1.77	1.91	-0.53	0.11	-0.44
AS	Taiwan Province of China	278 503	0.2272	11.40	4.63	2.46	11.04	4.65	2.38	-0.36	0.02	-0.09
ER	Greece	131 737	0.1075	4.41	2.26	1.95	3.69	2.40	1.54	-0.71	0.14	-0.41
AM	Costa Rica	16 269	0.0133	2.65	1.27	2.08	2.12	1.42	1.49	-0.53	0.15	-0.59
ON	New Caledonia	1 478	0.0012	1.51	1.00	1.51	1.03	1.00	1.03	-0.48	0.00	-0.48
AM	Jamaica	918	0.0007	1.08	1.01	1.06	1.05	1.02	1.03	-0.03	0.01	-0.03
AM	Martinique	42	0.0000	2.17	1.09	1.98	1.68	1.11	1.51	-0.49	0.02	-0.48

Supplementary Table 10: National aquaculture with no species diversity (ENS = 1)

Species groups	All national aquaculture		National aquaculture with no species diversity in the species group (ENS = 1)			
	Number of countries that farmed the species group	Total production (tonnes)	Prevalence		Aquaculture production	
			Number of countries	Share of total (%)	Tonnes	Share of total (%)
Year 1990						
All species	158	17 280 438	32	20.25	6 350	0.04
Finfish	143	8 676 399	31	21.68	148 256	1.71
Algae	17	4 195 304	11	64.71	171 012	4.08
Molluscs	48	3 608 731	19	39.58	67 538	1.87
Crustaceans	61	754 794	30	49.18	25 603	3.39
MAA	11	45 210	8	72.73	4 581	10.13
Year 2000						
All species	173	43 016 624	27	15.61	7 879	0.02
Finfish	162	20 813 371	35	21.60	121 122	0.58
Algae	23	10 595 565	14	60.87	123 781	1.17
Molluscs	61	9 757 564	25	40.98	111 067	1.14
Crustaceans	69	1 693 442	37	53.62	53 938	3.19
MAA	12	156 682	6	50.00	1 160	0.74
Year 2010						
All species	189	77 994 008	13	6.88	2 560	0.00
Finfish	182	37 752 735	25	13.74	36 450	0.10
Algae	34	20 174 325	20	58.82	27 641	0.14
Molluscs	62	13 728 260	21	33.87	65 359	0.48
Crustaceans	79	5 481 791	45	56.96	316 873	5.78
MAA	26	856 897	14	53.85	30 105	3.51
Year 2020						
All species	196	122 580 187	15	7.65	4 014	0.00
Finfish	191	57 461 094	31	16.23	147 412	0.26
Algae	49	35 077 578	30	61.22	233 528	0.67
Molluscs	63	17 740 526	17	26.98	62 478	0.35
Crustaceans	79	11 237 016	45	56.96	956 144	8.51
MAA	26	1 063 972	15	57.69	4 599	0.43

Supplementary Table 11: National aquaculture with extraordinarily high diversity (aka outliers)

Country or territory	All species			Finfish	Crustaceans	Molluscs	MAA	Algae
	ENS (11; 5.6 %)	ENSG (8; 4 %)	WGENS (11; 5.6 %)	ENS (7; 3.6 %)	ENS (8; 10 %)	ENS (3; 4.8 %)	ENS (5; 18.5 %)	ENS (8; 15.7 %)
1. China	28.00	3.77	7.43	15.07	5.14	5.82	5.34	3.92
5. Bangladesh	14.30		11.48	12.25	3.97			
94. Singapore	11.67		6.06	8.40	4.76			
24. Taiwan Province of China	11.04				2.40		1.97	
34. Lao People's Democratic Republic	10.33		10.26	10.28				
22. Russian Federation	10.03						2.01	
12. Japan	8.68	3.13						2.39
21. Malaysia	8.47	3.11		11.45				
4. Viet Nam	8.24				3.34		2.01	
20. Cambodia	7.70		6.19					
109. Dominican Republic	7.67							
32. Peru		2.93						
18. United States of America		2.81						
146. Fiji		2.80			2.23			
80. South Africa		2.74						
13. Thailand		2.73						
89. Kazakhstan			7.06	7.06				
96. Austria			7.02					
43. Nepal			6.98					
151. Bhutan			6.31					
77. Romania			5.93					
72. Israel			5.80					
6. Republic of Korea				7.40				3.39
7. Philippines					3.05			
190. Vanuatu					2.96			
38. Australia						3.90		
73. Portugal						3.89		
15. Democratic People's Republic of Korea							2.42	
28. France								2.50
42. Faeroe Islands								2.18
25. Spain								1.90
10. Norway								1.78
58. Tunisia								1.70

Notes: ENS = effective number of species. ENSG = effective number of species group. WGENS = within-group ENS. MAA = Miscellaneous aquatic animals and animal products. In parentheses, the first number represents the number of “outliers” (i.e. countries with extraordinarily high species diversity); and the second number represents the prevalence of outliers (i.e. the percentage of outliers in the total number of countries with aquaculture production of the species group).

Supplementary Table 12: Cross-sectional correlation between aquaculture production and species diversity in national aquaculture

Year	ENS	WGENS	ENSG	ENS (finfish)	ENS (crustaceans)	ENS (molluscs)	ENS (MAA)	ENS (Algae)
1990	0.4976*** (158)	0.229*** (158)	0.356*** (158)	0.2907*** (143)	0.2763** (61)	0.6674*** (48)	0.7125** (11)	0.4914** (17)
1991	0.4707*** (158)	0.1968** (158)	0.3662*** (158)	0.2933*** (145)	0.2669** (61)	0.6806*** (49)	0.8601*** (10)	0.4346* (16)
1992	0.4438*** (161)	0.1741** (161)	0.3433*** (161)	0.2837*** (150)	0.2348* (67)	0.6698*** (50)	0.5883* (10)	0.4091* (18)
1993	0.4173*** (161)	0.1614** (161)	0.3261*** (161)	0.2614*** (150)	0.2995** (66)	0.6513*** (51)	0.5535* (11)	0.3851 (18)
1994	0.4168*** (162)	0.158** (162)	0.3277*** (162)	0.2529*** (149)	0.3131*** (68)	0.5516*** (50)	0.4875 (11)	0.4557* (18)
1995	0.4344*** (164)	0.1737** (164)	0.3156*** (164)	0.2682*** (152)	0.3863*** (68)	0.582*** (53)	0.5479* (11)	0.4251* (20)
1996	0.4172*** (168)	0.1679** (168)	0.3015*** (168)	0.266*** (157)	0.4942*** (68)	0.5819*** (55)	0.4738 (11)	0.2896 (20)
1997	0.4324*** (167)	0.1737** (167)	0.305*** (167)	0.277*** (156)	0.5219*** (69)	0.6208*** (56)	0.6097** (12)	0.3162 (19)
1998	0.4356*** (169)	0.1754** (169)	0.3113*** (169)	0.2753*** (156)	0.4182*** (69)	0.5828*** (57)	0.6639** (12)	0.445** (20)
1999	0.4489*** (170)	0.1825** (170)	0.3047*** (170)	0.2945*** (157)	0.5082*** (67)	0.58*** (59)	0.6037** (14)	0.3932* (22)
2000	0.4498*** (173)	0.1825** (173)	0.303*** (173)	0.2792*** (162)	0.6278*** (69)	0.5044*** (61)	0.5178* (12)	0.4652** (23)
2001	0.4745*** (173)	0.1898** (173)	0.2994*** (173)	0.2905*** (162)	0.6901*** (66)	0.5182*** (60)	0.4759 (13)	0.4774** (26)
2002	0.4809*** (173)	0.1887** (173)	0.2964*** (173)	0.2877*** (163)	0.7835*** (68)	0.5842*** (58)	0.52* (14)	0.5077*** (26)
2003	0.6162*** (177)	0.2722*** (177)	0.3191*** (177)	0.3801*** (167)	0.8883*** (71)	0.6322*** (58)	0.9403*** (13)	0.7433*** (25)
2004	0.6332*** (180)	0.2847*** (180)	0.3327*** (180)	0.37*** (169)	0.8727*** (71)	0.6178*** (60)	0.9385*** (16)	0.8147*** (25)
2005	0.648*** (183)	0.2748*** (183)	0.3354*** (183)	0.3864*** (171)	0.8262*** (78)	0.5955*** (61)	0.9003*** (16)	0.7543*** (27)
2006	0.6767*** (189)	0.3044*** (189)	0.3404*** (189)	0.4285*** (177)	0.8183*** (80)	0.6024*** (60)	0.9139*** (18)	0.7789*** (26)
2007	0.6904*** (188)	0.303*** (188)	0.3498*** (188)	0.4376*** (180)	0.8393*** (84)	0.6088*** (60)	0.9505*** (17)	0.7908*** (27)
2008	0.6958*** (187)	0.2928*** (187)	0.3417*** (187)	0.4421*** (179)	0.8198*** (84)	0.6378*** (60)	0.9596*** (21)	0.7536*** (30)
2009	0.6758*** (189)	0.277*** (189)	0.3428*** (189)	0.4291*** (181)	0.7527*** (83)	0.6422*** (61)	0.942*** (24)	0.7523*** (30)
2010	0.679*** (189)	0.2637*** (189)	0.3624*** (189)	0.4284*** (182)	0.7559*** (79)	0.6349*** (62)	0.8913*** (26)	0.6908*** (34)
2011	0.6822*** (192)	0.2647*** (192)	0.3452*** (192)	0.4382*** (187)	0.7056*** (81)	0.6196*** (64)	0.826*** (26)	0.7811*** (36)
2012	0.6875*** (192)	0.267*** (192)	0.3515*** (192)	0.4477*** (187)	0.7201*** (80)	0.618*** (63)	0.804*** (25)	0.7587*** (37)
2013	0.665*** (191)	0.2698*** (191)	0.3502*** (191)	0.462*** (186)	0.8148*** (79)	0.6345*** (63)	0.8109*** (26)	0.7261*** (40)
2014	0.641*** (194)	0.2454*** (194)	0.3452*** (194)	0.4572*** (188)	0.7616*** (77)	0.6167*** (63)	0.8794*** (29)	0.5912*** (43)
2015	0.6369*** (198)	0.2436*** (198)	0.346*** (198)	0.4556*** (191)	0.6904*** (77)	0.5659*** (63)	0.8782*** (27)	0.4798*** (51)
2016	0.6459*** (198)	0.2505*** (198)	0.3496*** (198)	0.465*** (193)	0.6608*** (80)	0.6036*** (62)	0.8689*** (28)	0.5318*** (51)
2017	0.6477*** (199)	0.2456*** (199)	0.3653*** (199)	0.4659*** (193)	0.6058*** (79)	0.6309*** (63)	0.8999*** (30)	0.5966*** (52)
2018	0.6454*** (198)	0.2427*** (198)	0.3578*** (198)	0.4643*** (192)	0.5955*** (78)	0.5903*** (65)	0.8942*** (28)	0.5351*** (52)
2019	0.6405*** (196)	0.242*** (196)	0.3693*** (196)	0.4593*** (190)	0.5676*** (83)	0.5847*** (62)	0.8985*** (27)	0.5494*** (48)
2020	0.6454*** (196)	0.2388*** (196)	0.3759*** (196)	0.4677*** (191)	0.5519*** (79)	0.5815*** (63)	0.8984*** (26)	0.6318*** (49)
Minimum	0.4168	0.1580	0.2964	0.2529	0.2348	0.5044	0.4738	0.2896
Median	0.6351	0.2424	0.3422	0.3832	0.6443	0.6062	0.8431	0.5334
Maximum	0.6958	0.3044	0.3759	0.4677	0.8883	0.6806	0.9596	0.8147

Notes: ***p < 0.01; **p < 0.05; *p < 0.1. The number in parentheses represents the number of national aquaculture available to calculate the cross-sectional correlation in each year.

Supplementary Table 13: Temporal correlation between a country's production and diversity during 2010–2020

Temporal correlation between aquaculture production and eight diversity measures	Correlation coefficient (Pearson's <i>r</i>)					Share of all national aquaculture (count) or world production (prn)					
	Number of countries	Min <i>r</i>	Median <i>r</i>	Mean <i>r</i>	Max <i>r</i>	<i>r</i> not statistically significant		Positive <i>r</i> , statistically significant		Negative <i>r</i> , statistically significant	
						Count (%)	Prn (%)	Count (%)	Prn (%)	Count (%)	Prn (%)
Overall three decades: 1990–2020											
<i>ENS, all species</i>	196	-1.0000	0.1008	0.0856	0.9910	37.8	15.2	37.2	68.1	25.0	16.5
ENSG	143	-1.0000	-0.0542	-0.0150	0.9727	45.5	6.0	27.3	70.4	27.3	23.3
WGENS	188	-1.0000	0.0648	0.0780	0.9910	39.9	14.3	35.6	72.8	24.5	12.8
ENS, finfish	180	-1.0000	0.1347	0.1245	0.9910	40.0	21.5	41.1	69.9	18.9	8.6
ENS, molluscs	56	-1.0000	-0.0055	0.0764	1.0000	51.8	9.3	28.6	84.0	19.6	6.6
ENS, crustaceans	59	-0.8385	-0.1236	-0.0250	0.9734	50.8	18.4	22.0	62.2	27.1	18.9
ENS, MAA	13	-0.8026	0.4193	0.1996	0.8959	46.2	8.8	38.5	88.0	15.4	2.3
ENS, algae	31	-0.9272	0.1564	0.1598	0.9995	61.3	3.5	25.8	88.9	12.9	7.0
First decade: 1990–2000											
ENS, all species	154	-1.0000	-0.0296	0.0191	1.0000	62.3	19.1	20.1	73.0	17.5	7.8
ENSG	101	-1.0000	-0.0839	-0.0503	1.0000	61.4	84.4	17.8	2.1	20.8	12.4
WGENS	147	-1.0000	0.0452	0.0189	0.9714	65.3	20.6	17.7	74.4	17.0	4.7
ENS, finfish	140	-1.0000	0.1004	0.0529	1.0000	62.1	13.6	20.0	81.2	17.9	5.0
ENS, molluscs	38	-1.0000	-0.0287	0.0798	1.0000	63.2	25.2	23.7	1.9	13.2	71.7
ENS, crustaceans	41	-0.8779	-0.2260	-0.0569	0.9325	70.7	44.8	17.1	28.5	12.2	25.5
ENS, MAA	6	-0.4353	0.5582	0.3238	0.8276	66.7		33.3	54.3		
ENS, algae	9	-0.7390	-0.1095	0.0260	0.8714	55.6	22.7	33.3	68.8	11.1	6.6
Second decade: 2000–2010											
ENS, all species	181	-1.0000	-0.0315	-0.0025	0.9583	61.9	12.9	21.0	72.3	17.1	14.7
ENSG	125	-0.9908	-0.2252	-0.1194	0.9507	56.8	18.5	16.0	65.9	27.2	15.0
WGENS	176	-1.0000	0.0105	0.0216	0.9705	63.6	20.4	21.0	71.9	15.3	7.5
ENS, finfish	167	-1.0000	0.1859	0.1510	1.0000	58.1	24.9	29.9	72.2	12.0	2.8
ENS, molluscs	48	-1.0000	-0.1360	-0.1027	1.0000	62.5	12.2	14.6	81.1	22.9	6.7
ENS, crustaceans	49	-0.9808	-0.0676	-0.0160	1.0000	57.1	82.5	20.4	11.9	22.4	3.8
ENS, MAA	12	-0.9225	0.4497	0.2491	1.0000	50.0	7.8	33.3	87.9	16.7	2.8
ENS, algae	19	-1.0000	0.0018	0.0283	1.0000	57.9	4.8	21.1	82.8	21.1	11.7
Third decade: 2010–2020											
ENS, all species	189	-1.0000	-0.0812	-0.0341	1.0000	49.7	74.0	24.3	4.9	25.9	20.9
ENSG	131	-1.0000	-0.0259	0.0032	0.9883	55.0	22.4	23.7	68.2	21.4	8.8
WGENS	176	-1.0000	-0.1118	-0.0427	1.0000	54.0	18.0	21.6	5.2	24.4	76.7
ENS, finfish	168	-1.0000	-0.0133	-0.0240	1.0000	51.8	14.7	23.8	69.0	24.4	16.2
ENS, molluscs	52	-0.9226	-0.0977	-0.0574	0.9783	53.8	90.8	19.2	3.4	26.9	5.7
ENS, crustaceans	41	-0.9323	-0.1882	-0.0838	0.9866	56.1	14.7	14.6	1.0	29.3	77.2
ENS, MAA	13	-0.9481	0.1688	-0.0124	0.9676	53.8	8.4	23.1	89.4	23.1	1.3
ENS, algae	29	-0.9990	0.0681	0.1304	1.0000	62.1	92.3	27.6	7.2	10.3	0.0

Notes: The first row (in *italic* fonts) contains the following information. Among the estimated temporal correlations during 1990–2020 for 196 national aquaculture (one correlation for each country), the minimum, median, mean and maximum correlations were, respectively, -1.0000, 0.1008, 0.0856, and 0.991. For 37.8 percent of the 196 national aquaculture (accounting of 15.2 percent of world production), the correlations were statistically insignificant, whereas the correlation was significantly positive in 37.2 percent of the 196 national aquaculture (68.1 percent of world production), while significantly negative in 25 percent (16.5 percent of production). Information in other rows can be interpreted in similar ways.

Supplementary Table 14: National aquaculture with statistically significant temporal correlations between production and ENS in the most recent decade (2010–2020)

46 national aquaculture with POSITIVE, statistically significant correlation between production and ENS during 2010–2020 (ranked by production share; 24.3 percent of all national aquaculture; 4.9 percent of world production)					49 national aquaculture with NEGATIVE, statistically significant correlation between production and ENS during 2010–2020 (ranked by production share; 25.9 percent of all national aquaculture; 20.9 percent of world production)				
National aquaculture	Share of world production (%)	Number of years	Pearson's r	p-value	National aquaculture	Share of world production (%)	Number of years	Pearson's r	p-value
Viet Nam	3.4981	11	0.7945	0.0035	Indonesia	12.8975	11	-0.6031	0.0495
Iran (Islamic Republic of)	0.3501	11	0.8630	0.0006	Philippines	2.3237	11	-0.8751	0.0004
Türkiye	0.2590	11	0.7757	0.0050	Norway	1.2764	11	-0.7355	0.0099
Russian Federation	0.1752	11	0.9889	0.0000	Chile	1.1148	11	-0.6985	0.0168
Pakistan	0.1481	11	0.9687	0.0000	Thailand	1.0016	11	-0.6534	0.0292
Greece	0.1164	11	0.6473	0.0313	Brazil	0.5210	11	-0.7841	0.0043
Colombia	0.1100	11	0.6565	0.0282	Ecuador	0.4457	11	-0.9130	0.0001
Honduras	0.0553	11	0.7355	0.0099	United States of America	0.4332	11	-0.6946	0.0177
Nepal	0.0480	11	0.7708	0.0055	Spain	0.2814	11	-0.7364	0.0098
Poland	0.0370	11	0.7263	0.0114	Cambodia	0.1689	11	-0.9352	0.0000
Denmark	0.0362	11	0.8186	0.0021	Australia	0.0859	11	-0.7274	0.0112
Czechia	0.0202	11	0.6219	0.0411	Faeroe Islands	0.0764	11	-0.7294	0.0109
Paraguay	0.0082	11	0.6347	0.0359	Netherlands	0.0518	11	-0.6701	0.0241
Singapore	0.0052	11	0.6047	0.0488	Ireland	0.0382	11	-0.8586	0.0007
Bosnia and Herzegovina	0.0041	11	0.6770	0.0221	Germany	0.0331	11	-0.9184	0.0001
Lithuania	0.0038	11	0.6465	0.0316	Sri Lanka	0.0263	11	-0.7141	0.0136
Austria	0.0034	11	0.9840	0.0000	Iraq	0.0229	11	-0.6500	0.0304
Democratic Republic of the Congo	0.0031	11	0.7979	0.0033	Croatia	0.0162	11	-0.8934	0.0002
Bolivia (Plurinational State of)	0.0024	11	0.8911	0.0002	Iceland	0.0152	11	-0.9234	0.0001
Dominican Republic	0.0020	11	0.8514	0.0009	Tunisia	0.0150	11	-0.8145	0.0023
United Arab Emirates	0.0017	11	0.7771	0.0049	Armenia	0.0130	11	-0.7212	0.0123
Slovakia	0.0016	11	0.8242	0.0018	Malta	0.0114	11	-0.7782	0.0048
Switzerland	0.0016	11	0.9380	0.0000	Republic of Moldova	0.0107	11	-0.8756	0.0004
Kyrgyzstan	0.0013	11	0.6080	0.0472	Zimbabwe	0.0097	11	-0.9172	0.0001
Lebanon	0.0010	11	0.6986	0.0168	Solomon Islands	0.0079	11	-0.6435	0.0326
Senegal	0.0009	11	0.8079	0.0026	Panama	0.0079	11	-0.7246	0.0117
Latvia	0.0007	11	0.7775	0.0049	El Salvador	0.0061	11	-0.7266	0.0113

46 national aquaculture with POSITIVE, statistically significant correlation between production and ENS during 2010–2020 (ranked by production share; 24.3 percent of all national aquaculture; 4.9 percent of world production)					49 national aquaculture with NEGATIVE, statistically significant correlation between production and ENS during 2010–2020 (ranked by production share; 25.9 percent of all national aquaculture; 20.9 percent of world production)				
National aquaculture	Share of world production (%)	Number of years	Pearson's r	p-value	National aquaculture	Share of world production (%)	Number of years	Pearson's r	p-value
Namibia	0.0005	11	0.8638	0.0006	Afghanistan	0.0053	11	-0.6954	0.0175
Guinea	0.0005	11	0.7362	0.0098	Papua New Guinea	0.0045	11	-0.9358	0.0000
Central African Republic	0.0002	11	0.9640	0.0000	Belize	0.0036	11	-0.6836	0.0204
Guam	0.0001	11	0.8917	0.0002	Mali	0.0035	11	-0.6592	0.0273
Chad	0.0001	11	0.8030	0.0029	French Polynesia	0.0019	11	-0.9402	0.0000
Turkmenistan	0.0001	11	0.8461	0.0010	Cameroon	0.0019	11	-0.7832	0.0044
Réunion	0.0001	11	0.8975	0.0002	Georgia	0.0016	11	-0.9368	0.0000
Northern Mariana Islands	0.0000	11	0.9101	0.0001	Mozambique	0.0015	11	-0.7498	0.0079
Gambia	0.0000	11	0.9638	0.0000	Mauritius	0.0013	11	-0.6405	0.0338
Botswana	0.0000	6	0.9910	0.0001	Channel Islands	0.0012	11	-0.6148	0.0441
Libya	0.0000	11	1.0000	-	Lesotho	0.0012	11	-0.8955	0.0002
South Sudan	0.0000	9	0.7091	0.0324	Timor-Leste	0.0008	11	-0.9233	0.0001
Antigua and Barbuda	0.0000	11	0.8536	0.0008	Fiji	0.0006	11	-0.9307	0.0000
Grenada	0.0000	6	0.9363	0.0060	Azerbaijan	0.0005	11	-0.7561	0.0071
Cook Islands	0.0000	11	0.8822	0.0003	Kuwait	0.0003	11	-0.7259	0.0114
Bahamas	0.0000	11	0.7014	0.0162	Liberia	0.0002	11	-0.6024	0.0498
French Guiana	0.0000	11	0.7732	0.0053	Sierra Leone	0.0001	11	-1.0000	0.0000
Marshall Islands	0.0000	7	0.8008	0.0305	Saint Lucia	0.0000	11	-0.8413	0.0012
Saint Kitts and Nevis	0.0000	11	0.9281	0.0000	Guadeloupe	0.0000	11	-0.7131	0.0138
					Barbados	0.0000	11	-0.8221	0.0019
					United States Virgin Islands	0.0000	11	-0.9930	0.0000
					Dominica	0.0000	7	-1.0000	0.0000

Supplementary Table 15a: Countries in the “Both > median” category (i.e. relatively high within-group diversity and between-group diversity)

Countries (or territories) in this category are (i) indexed according to ranking in world production; (ii) highlighted in red text when ENS < median and in blue text when ENS > median; and (iii) mapped in Figure 3e in blue.	Aquaculture production, 2020		Diversity measures, 2020			
	Tonnes	Share of world (%)	ENS	WGENS	ENSG	
World (48 countries)	111 188 012	90.7063	n.a.	n.a.	n.a.	
Africa (8)	53 446	0.0436	n.a.	n.a.	n.a.	
58. Tunisia	23 486	0.0192	2.95	2.82	1.04	
61. Kenya	20 831	0.0170	2.33	1.96	1.19	
92. Algeria	5 436	0.0044	4.48	3.99	1.12	
120. Morocco	1 618	0.0013	6.51	2.66	2.45	
128. Senegal	1 100	0.0009	3.67	1.84	2.00	
Landlocked (LLDCs)	138. Burkina Faso	651	0.0005	2.33	2.22	1.05
Landlocked (LLDCs)	148. Central African Republic	219	0.0002	4.86	2.84	1.71
Landlocked (LLDCs)	156. Chad	105	0.0001	3.42	2.10	1.63
Americas (7)	1 460 057	1.1911	n.a.	n.a.	n.a.	
16. Brazil	630 200	0.5141	5.13	3.29	1.56	
18. United States of America	448 535	0.3659	6.60	2.35	2.81	
29. Colombia	179 351	0.1463	5.25	4.60	1.14	
30. Canada	171 007	0.1395	3.15	1.98	1.59	
Island (SIDS)	57. Cuba	26 200	0.0214	3.97	2.09	1.90
Island (SIDS)	108. Dominican Republic	2 680	0.0022	7.67	5.26	1.46
113. Argentina	2 085	0.0017	3.12	3.00	1.04	
Asia (19)	108 734 650	88.7049	n.a.	n.a.	n.a.	
1. China	70 483 538	57.4999	28.00	7.43	3.77	
Island	2. Indonesia	14 845 014	12.1105	5.63	2.47	2.28
3. India	8 641 286	7.0495	6.58	4.59	1.43	
4. Viet Nam	4 614 692	3.7646	8.24	3.79	2.17	
5. Bangladesh	2 583 866	2.1079	14.30	11.48	1.25	
6. Republic of Korea	2 327 903	1.8991	6.95	3.30	2.11	
11. Myanmar	1 145 018	0.9341	3.98	3.13	1.27	
Island	12. Japan	996 297	0.8128	8.68	2.78	3.13
13. Thailand	962 467	0.7852	7.24	2.65	2.73	
17. Iran (Islamic Republic of)	480 500	0.3920	4.90	3.53	1.39	
19. Türkiye	421 411	0.3438	3.61	3.42	1.06	
20. Cambodia	400 400	0.3266	7.70	6.19	1.24	
21. Malaysia	400 017	0.3263	8.47	2.72	3.11	
Island	24. Taiwan Province of China	278 503	0.2272	11.04	4.65	2.38
40. Saudi Arabia	99 907	0.0815	3.95	1.98	2.00	
Island	50. Sri Lanka	42 119	0.0344	5.17	2.93	1.77
Island (SIDS)	93. Singapore	4 829	0.0039	11.67	6.06	1.93
98. China, Hong Kong Special Administrative Region	3 835	0.0031	7.25	4.64	1.56	
106. United Arab Emirates	3 048	0.0025	4.49	3.31	1.36	
Europe (11)	833 644	0.6801	n.a.	n.a.	n.a.	
22. Russian Federation	291 194	0.2376	10.03	5.29	1.89	
28. France	191 350	0.1561	4.62	2.60	1.77	
33. Greece	131 737	0.1075	3.69	2.40	1.54	
36. Italy	122 778	0.1002	4.51	2.31	1.95	
55. Germany	32 258	0.0263	5.42	2.73	1.99	
60. Croatia	21 718	0.0177	5.12	4.58	1.12	
70. Bulgaria	15 052	0.0123	6.24	4.11	1.52	
72. Portugal	14 552	0.0119	6.49	3.28	1.98	
81. Albania	9 284	0.0076	3.36	2.93	1.15	
Landlocked	116. Switzerland	2 048	0.0017	3.58	3.32	1.08
118. Slovenia	1 673	0.0014	4.38	2.52	1.74	
Oceania (3)	106 215	0.0866	n.a.	n.a.	n.a.	
39. Australia	106 088	0.0865	4.43	2.14	2.07	
Island (SIDS)	154. Guam	118	0.0001	2.79	1.94	1.44
Island (SIDS)	183. Cook Islands	9	0.0000	2.92	2.03	1.44

Supplementary Table 15b: Countries in the “Both < median” category (i.e. relatively low within-group diversity and between-group diversity)

Countries (or territories) in this category are (i) indexed according to ranking in world production; (ii) highlighted in red text when ENS < median and in blue text when ENS > median; and (iii) mapped in Figure 3e in red.		Aquaculture production, 2020		Diversity measures, 2020		
		Tonnes	Share of world (%)	ENS	WGENS	ENSG
	World (48 countries)	1 845 263	1.5054	n.a.	n.a.	n.a.
	Africa (21)	119 252	0.0973	n.a.	n.a.	n.a.
	45. Ghana	64 010	0.0522	1.36	1.36	1.00
Landlocked (LLDCs)	68. Zimbabwe	15 425	0.0126	1.03	1.03	1.00
	78. Sudan	9 850	0.0080	1.66	1.66	1.00
Landlocked (LLDCs)	85. Mali	7 686	0.0063	1.78	1.78	1.00
Landlocked (LLDCs)	87. Rwanda	7 059	0.0058	1.40	1.39	1.00
	101. Democratic Republic of the Congo	3 590	0.0029	1.15	1.15	1.00
	105. Mozambique	3 162	0.0026	1.00	1.00	1.00
Landlocked (LLDCs)	109. Lesotho	2 600	0.0021	1.00	1.00	1.00
	114. Angola	2 062	0.0017	1.08	1.08	1.00
Landlocked (LLDCs)	123. Burundi	1 450	0.0012	1.30	1.30	1.00
	131. Congo	900	0.0007	1.60	1.60	1.00
	136. Togo	730	0.0006	1.31	1.31	1.00
	147. Liberia	255	0.0002	1.48	1.48	1.00
Landlocked (LLDCs)	152. Botswana	146	0.0001	1.76	1.76	1.00
Landlocked (LLDCs)	158. Eswatini	100	0.0001	1.00	1.00	1.00
	160. Sierra Leone	85	0.0001	1.25	1.25	1.00
	161. Gabon	60	0.0000	1.33	1.33	1.00
Landlocked (LLDCs)	167. South Sudan	30	0.0000	1.28	1.28	1.00
Island (SIDS)	172. Cabo Verde	22	0.0000	1.00	1.00	1.00
Island	173. Mayotte	20	0.0000	1.00	1.00	1.00
	181. Libya	10.0	0.0000	1.00	1.00	1.00
	America (7)	30 990	0.0253	n.a.	n.a.	n.a.
	56. Nicaragua	29 410	0.0240	1.00	1.00	1.00
Island (SIDS)	121. Haiti	1 560	0.0013	1.52	1.52	1.00
Island (SIDS)	178. Saint Vincent and the Grenadines	13	0.0000	1.00	1.00	1.00
Island (SIDS)	187. Trinidad and Tobago	4	0.0000	1.73	1.73	1.00
Island (SIDS)	193. Aruba	2	0.0000	1.00	1.00	1.00
Island (SIDS)	194. British Virgin Islands	1	0.0000	1.00	1.00	1.00
Island	196. Bonaire, Sint Eustatius and Saba	1	0.0000	1.00	1.00	1.00
	Asia (6)	33 117	0.0270	n.a.	n.a.	n.a.
	59. Iraq	22 704	0.0185	1.71	1.71	1.00
Landlocked (LLDCs)	84. Afghanistan	8 050	0.0066	1.04	1.04	1.00
	125. Oman	1 307	0.0011	1.62	1.62	1.00
	140. State of Palestine	600	0.0005	1.70	1.70	1.00
	144. Kuwait	450	0.0004	1.00	1.00	1.00
Island (SIDS)	186. Bahrain	6	0.0000	1.36	1.36	1.00
	Europe (7)	1 656 261	1.3512	n.a.	n.a.	n.a.
	10. Norway	1 490 412	1.2159	1.31	1.29	1.01
Island	42. Faeroe Islands	89 055	0.0727	1.01	1.00	1.01
Island	51. Iceland	40 595	0.0331	1.65	1.65	1.00
Island	63. Malta	19 829	0.0162	1.71	1.71	1.00
	69. Finland	15 053	0.0123	1.26	1.26	1.00
	127. Channel Islands	1 107	0.0009	1.35	1.35	1.00
	149. Belgium	209	0.0002	1.00	1.00	1.00
	Oceania (7)	5 644	0.0046	n.a.	n.a.	n.a.
Island (SIDS)	91. Solomon Islands	5 504	0.0045	1.01	1.00	1.01
Island (SIDS)	155. Tonga	105	0.0001	1.01	1.01	1.00
Island (SIDS)	174. American Samoa	20	0.0000	1.00	1.00	1.00
Island (SIDS)	179. Samoa	10	0.0000	1.01	1.00	1.01
Island (SIDS)	189. Tuvalu	3	0.0000	1.00	1.00	1.00
Island (SIDS)	191. Kiribati	2	0.0000	1.00	1.00	1.00
Island (SIDS)	195. Nauru	1	0.0000	1.00	1.00	1.00

Supplementary Table 15c: Countries in the “WGENS > median; ENSG ≤ median” category (i.e. relatively high within-group diversity yet relatively low between-group diversity)

Countries (or territories) in this category are (i) indexed according to ranking in world production; (ii) highlighted in red text when ENS < median and in blue text when ENS > median; and (iii) mapped in Figure 3e in green.		Aquaculture production, 2020		Diversity measures, 2020		
		Tonnes	Share of world (%)	ENS	WGENS	ENSG
	World (50 countries)	2 752 730	2.2457	n.a.	n.a.	n.a.
	Africa (13)	2 046 073	1.6692	n.a.	n.a.	n.a.
	8. Egypt	1 591 896	1.2987	3.77	3.73	1.01
	26. Nigeria	261 711	0.2135	5.66	5.64	1.00
Landlocked (LLDCs)	35. Uganda	123 897	0.1011	1.89	1.89	1.00
Landlocked (LLDCs)	48. Zambia	45 670	0.0373	3.21	3.21	1.00
Landlocked (LLDCs)	80. Malawi	9 393	0.0077	3.56	3.56	1.00
	94. Côte d'Ivoire	4 620	0.0038	2.48	2.48	1.00
	102. Cameroon	3 556	0.0029	2.12	2.12	1.00
	107. Benin	2 987	0.0024	2.00	2.00	1.00
	126. Guinea	1 135	0.0009	3.71	3.71	1.00
Landlocked (LLDCs)	139. Niger	649	0.0005	1.92	1.92	1.00
Landlocked (LLDCs)	142. Ethiopia	534	0.0004	2.17	2.17	1.00
	177. Equatorial Guinea	15	0.0000	2.69	2.69	1.00
Island	181. Réunion	10	0.0000	2.00	2.00	1.00
	Americas (5)	17 933	0.0146	n.a.	n.a.	n.a.
Landlocked (LLDCs)	73. Paraguay	14 100	0.0115	2.83	2.83	1.00
Landlocked (LLDCs)	100. Bolivia (Plurinational State of)	3 720	0.0030	5.09	5.09	1.00
	157. Uruguay	103	0.0001	3.27	3.27	1.00
Island (SIDS)	184. United States Virgin Islands	8	0.0000	2.83	2.83	1.00
	190. French Guiana	2	0.0000	2.00	2.00	1.00
	Asia (16)	525 066	0.4283	n.a.	n.a.	n.a.
	31. Pakistan	162 462	0.1325	5.67	5.59	1.01
Landlocked (LLDCs)	34. Lao People's Democratic Republic	130 020	0.1061	10.33	10.26	1.01
Landlocked (LLDCs)	41. Uzbekistan	98 003	0.0800	4.97	4.97	1.00
Landlocked (LLDCs)	43. Nepal	76 822	0.0627	6.98	6.98	1.00
Landlocked (LLDCs)	66. Armenia	18 350	0.0150	2.77	2.77	1.00
	71. Israel	14 700	0.0120	5.80	5.80	1.00
Island	86. Cyprus	7 343	0.0060	2.05	2.02	1.02
Landlocked (LLDCs)	88. Kazakhstan	6 795	0.0055	7.06	7.06	1.00
Landlocked (LLDCs)	110. Kyrgyzstan	2 550	0.0021	3.98	3.98	1.00
	111. Syrian Arab Republic	2 300	0.0019	3.67	3.67	1.00
	115. Jordan	2 055	0.0017	2.00	2.00	1.00
	117. Georgia	2 027	0.0017	3.34	3.34	1.00
Landlocked (LLDCs)	135. Tajikistan	775	0.0006	2.94	2.94	1.00
Landlocked (LLDCs)	143. Azerbaijan	533	0.0004	4.74	4.74	1.00
Landlocked (LLDCs)	150. Bhutan	181	0.0001	6.31	6.31	1.00
Landlocked (LLDCs)	151. Turkmenistan	150	0.0001	4.45	4.45	1.00
	Europe (15)	163 637	0.1335	n.a.	n.a.	n.a.
	47. Poland	47 700	0.0389	3.69	3.69	1.00
Landlocked	62. Czechia	20 401	0.0166	2.09	2.09	1.00
	64. Ukraine	18 568	0.0151	3.08	3.08	1.00
Landlocked	65. Hungary	18 373	0.0150	3.05	3.05	1.00
Landlocked (LLDCs)	75. Republic of Moldova	12 600	0.0103	4.17	4.16	1.00
	76. Romania	12 200	0.0100	5.93	5.93	1.00
Landlocked	82. Belarus	9 266	0.0076	2.48	2.48	1.00
Landlocked	90. Serbia	6 010	0.0049	2.30	2.30	1.00
	95. Austria	4 527	0.0037	7.02	7.02	1.00
	96. Lithuania	4 477	0.0037	2.85	2.85	1.00
	99. Bosnia and Herzegovina	3 776	0.0031	1.89	1.89	1.00
Landlocked	112. Slovakia	2 296	0.0019	3.82	3.82	1.00
Landlocked (LLDCs)	119. North Macedonia	1 634	0.0013	2.13	2.13	1.00
	129. Estonia	1 090	0.0009	1.85	1.84	1.01
	137. Latvia	717	0.0006	2.51	2.51	1.00
	Oceania (1)	22	0.0000	n.a.	n.a.	n.a.
Island (SIDS)	172. Palau	22	0.0000	2.53	2.53	1.00

Supplementary Table 15d: Countries in the “WGENS ≤ median; ENSG > median” category (i.e. relatively low within-group diversity yet relatively high between-group diversity)

Countries (or territories) in this category are (i) indexed according to ranking in world production; (ii) highlighted in red text when ENS < median and in blue text when ENS > median; and (iii) mapped in Figure 3e in purple.		Aquaculture production, 2020		Diversity measures, 2020		
		Tonnes	Share of world (%)	ENS	WGENS	ENSG
	Total (50)	6 794 182	5.5426	n.a.	n.a.	n.a.
	Africa (6)	135 523	0.1106	n.a.	n.a.	n.a.
	38. United Republic of Tanzania	108 568	0.0886	1.70	1.09	1.56
Island	74. Madagascar	13 550	0.0111	2.11	1.00	2.10
	79. South Africa	9 753	0.0080	4.66	1.70	2.74
Island (SIDS)	104. Mauritius	3 298	0.0027	1.15	1.11	1.04
	146. Namibia	321	0.0003	1.61	1.12	1.43
	166. Gambia	33	0.0000	2.56	1.31	1.96
	Americas (23)	2 891 567	2.3589	n.a.	n.a.	n.a.
	9. Chile	1 505 486	1.2282	3.39	1.77	1.91
	14. Ecuador	774 569	0.6319	1.11	1.01	1.10
	23. Mexico	278 694	0.2274	2.78	1.36	2.05
	32. Peru	143 830	0.1173	3.62	1.23	2.93
	44. Honduras	71 151	0.0580	1.99	1.00	1.99
	46. Venezuela (Bolivarian Republic of)	53 609	0.0437	1.85	1.05	1.77
	54. Guatemala	33 651	0.0275	1.98	1.02	1.95
	67. Costa Rica	16 269	0.0133	2.12	1.42	1.49
	83. El Salvador	8 500	0.0069	1.51	1.01	1.49
	97. Panama	3 879	0.0032	3.04	1.54	1.98
Island (SIDS)	130. Jamaica	918	0.0007	1.05	1.02	1.03
Island (SIDS)	141. Belize	565	0.0005	1.47	1.00	1.47
Island (SIDS)	153. Guyana	138	0.0001	2.00	1.17	1.72
Island (SIDS)	159. Saint Lucia	92	0.0001	1.44	1.00	1.44
Island (SIDS)	162. Guadeloupe	45	0.0000	1.53	1.27	1.20
Island (SIDS)	163. Martinique	42	0.0000	1.68	1.11	1.51
Island (SIDS)	165. Suriname	37	0.0000	2.54	1.42	1.79
Island (SIDS)	168. Barbados	26	0.0000	1.10	1.00	1.10
Island (SIDS)	170. Grenada	23	0.0000	1.11	1.00	1.11
Island (SIDS)	173. Antigua and Barbuda	20	0.0000	2.00	1.00	2.00
Island (SIDS)	176. Puerto Rico	18	0.0000	2.65	1.40	1.89
Island (SIDS)	185. Bahamas	6	0.0000	1.57	1.00	1.57
Island (SIDS)	192. Saint Kitts and Nevis	2	0.0000	2.00	1.00	2.00
	Asia (6)	3 008 317	2.4542	n.a.	n.a.	n.a.
Island	7. Philippines	2 322 831	1.8949	3.93	1.63	2.41
	15. Democratic People's Republic of Korea	680 300	0.5550	1.59	1.06	1.51
Island	103. Brunei Darussalam	3 500	0.0029	2.47	1.68	1.47
Island (SIDS)	133. Timor-Leste	835	0.0007	1.73	1.10	1.57
	134. Lebanon	828	0.0007	1.20	1.10	1.09
	169. Qatar	23	0.0000	1.16	1.00	1.16
	Europe (7)	630 865	0.5147	n.a.	n.a.	n.a.
	25. Spain	276 571	0.2256	2.97	1.61	1.85
Island	27. United Kingdom	221 000	0.1803	1.69	1.34	1.26
	49. Denmark	42 629	0.0348	2.24	1.46	1.53
	52. Netherlands	39 940	0.0326	2.18	1.46	1.49
Island	53. Ireland	37 751	0.0308	3.29	1.69	1.95
	77. Sweden	12 090	0.0099	2.24	1.38	1.63
	132. Montenegro	885	0.0007	2.87	1.59	1.81
	Oceania (8)	127 909	0.1043	n.a.	n.a.	n.a.
Island	37. New Zealand	118 582	0.0967	1.57	1.07	1.47
Island (SIDS)	89. Papua New Guinea	6 102	0.0050	2.30	1.25	1.84
Island (SIDS)	122. New Caledonia	1 478	0.0012	1.03	1.00	1.03
Island (SIDS)	124. French Polynesia	1 371	0.0011	1.54	1.04	1.48
Island (SIDS)	145. Fiji	322	0.0003	3.28	1.17	2.80
Island (SIDS)	164. Northern Mariana Islands	41	0.0000	2.21	1.10	2.00
Island (SIDS)	182. Marshall Islands	10	0.0000	1.58	1.00	1.58
Island (SIDS)	188. Vanuatu	3	0.0000	1.99	1.23	1.62

Supplementary Table 16: Species diversity in countries with the largest land area

Top 10 countries with the largest land area	Share of world (%)		Diversity measures, 2020		
	Land area	Aquaculture production, 2020	ENS	WGENS	ENSG
1. Russian Federation	12.75	0.1752	7.01	5.38	1.31
2. Canada	7.45	0.1734	3.55	2.09	1.70
3. United States of America	7.33	0.4332	6.68	2.47	2.71
4. China	7.16	57.9137	28.10	7.68	3.66
5. Brazil	6.35	0.5210	6.57	3.86	1.69
6. Australia	5.77	0.0859	5.28	2.33	2.26
7. India	2.45	5.5156	6.29	4.59	1.37
8. Argentina	2.07	0.0031	3.35	2.97	1.14
9. Kazakhstan	2.03	0.0025	4.88	4.88	1.00
10. Algeria	1.78	0.0031	5.14	4.52	1.13

Notes: Land area data from FAO. 2016. AQUASTAT Main Database – Food and Agriculture Organization of the United Nations (FAO).

Supplementary Table 17: Examples of relatively large between-group diversity in inland aquaculture, 2020

Countries/territories (ranked by production)	Inland aquaculture production, 2020										
	Tonnes	Between- group diversity (ENSG)	Finfish share (%)	Crustacean share (%)		Molluscs share (%)		MAA share (%)		Algae share (%)	
				Overall	Largest species	Overall	Largest species	Overall	Largest species	Overall	Largest species
China	30 945 335	1.72	83.58	13.76	<i>PC</i> (7.74)	0.60	<i>CC</i> (0.29)	1.86	<i>TS</i> (1.07)	0.20	<i>SP</i> (0.20)
Thailand	405 656	1.39	91.09	8.00	<i>MR</i> (8.00)			0.91			
United States of America	243 721	1.84	70.34	29.66	<i>PC</i> (29.66)						
Taiwan Province of China	119 496	1.72	85.79	8.45	<i>MR</i> (5.42)	3.42	<i>CF</i> (3.42)	2.34	<i>RC</i> (1.37)		
Spain	19 266	1.54	84.41	15.57	<i>PC</i> (15.57)			-		0.02	<i>SP</i> (0.02)
Chile	1 928	1.86	31.48					-		68.52	<i>SP</i> (65.35)
Australia	1 460	1.36	90.94	9.06	<i>CQ</i> (4.22)						
Tunisia	994	1.29	92.96					-		7.04	<i>SP</i> (7.04)
Singapore	673	2.04	50.14	0.32	<i>MR</i> (0.23)			49.54	<i>RC</i> (49.54)		
Central African Republic	219	1.71	77.17					-		22.83	<i>SP</i> (22.83)
Fiji	145	1.86	69.02	30.98	<i>MR</i> (30.98)						
Chad	105	1.63	80.95					-		19.05	<i>SP</i> (19.05)

Notes: Including countries or territories with inland aquaculture production in 2020 greater than 100 tonnes and between-group diversity higher than 1.2 ENSG.

PC = *Procambarus clarkii*; *MR* = *Macrobrachium rosenbergii*; *CQ* = *Cherax quadricarinatus*; *CC* = *Cipangopaludina chinensis*; *CF* = *Corbicula fluminea*; *TS* = *Trionyx sinensis*; *RC* = *Rana catesbeiana*; *SP* = *Spirulina spp.*

Supplementary Table 18: A summary of key results

Country or area: <ul style="list-style-type: none"> • Regional aquaculture in italic • National aquaculture indexed by production ranking in 2020 • LDLK = Landlocked • LLDCs = Landlocked Developing Countries • ISLD = Island • SIDS = Small Island Developing States 	Aquaculture production		Diversity measures ENS = Effective number of species (a measure of overall species diversity); WGENS = Within-group ENS (a measure of within-group diversity); ENSG = Effective number of species groups (a measure of between-group diversity); ENS = WGENS × ENSG												U1: ENS increase (both components up) U2: ENS increase (only WGENS up) U3: ENS increase (only ENSG up) D1: ENS decrease (both components down) D2: ENS decrease (only WGENS down) D3: ENS decrease (only ENSG down)				
	Year 2020		Year 1990			Year 2000			Year 2010			Year 2020			Overall: 1990–2020		1990–2000	2000–2010	2010–2020
	Thousand tonnes	% of world production	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ENS	WGENS	ENSG					
World	122 580 187	100.0000	35.61	11.06	3.22	34.88	10.71	3.26	50.59	14.60	3.47	47.46	13.56	3.50	Inverted N	U1	D2	U1	D2
<i>World excluding China</i>	<i>52 096 649</i>	<i>42.5001</i>	<i>38.46</i>	<i>11.26</i>	<i>3.42</i>	<i>45.87</i>	<i>14.72</i>	<i>3.12</i>	<i>39.84</i>	<i>13.07</i>	<i>3.05</i>	<i>33.18</i>	<i>11.40</i>	<i>2.91</i>	<i>Inverted U</i>	<i>D3</i>	<i>U2</i>	<i>D1</i>	<i>D1</i>
<i>Developed regions</i>	<i>5 146 959</i>	<i>4.1989</i>	<i>19.68</i>	<i>6.60</i>	<i>2.98</i>	<i>20.15</i>	<i>7.29</i>	<i>2.76</i>	<i>18.47</i>	<i>6.98</i>	<i>2.65</i>	<i>15.68</i>	<i>6.33</i>	<i>2.48</i>	<i>Inverted U</i>	<i>D1</i>	<i>U2</i>	<i>D1</i>	<i>D1</i>
<i>Developing regions</i>	<i>117 433 228</i>	<i>95.8011</i>	<i>28.11</i>	<i>8.77</i>	<i>3.21</i>	<i>29.03</i>	<i>8.85</i>	<i>3.28</i>	<i>45.66</i>	<i>13.08</i>	<i>3.49</i>	<i>44.30</i>	<i>12.58</i>	<i>3.52</i>	<i>Inverted U</i>	<i>U1</i>	<i>U1</i>	<i>U1</i>	<i>D2</i>
<i>Small Island Developing States</i>	<i>56 507</i>	<i>0.0461</i>	<i>7.68</i>	<i>2.56</i>	<i>3.00</i>	<i>10.71</i>	<i>3.23</i>	<i>3.31</i>	<i>12.73</i>	<i>3.97</i>	<i>3.20</i>	<i>13.75</i>	<i>4.66</i>	<i>2.95</i>	<i>Straight up</i>	<i>U2</i>	<i>U1</i>	<i>U2</i>	<i>U2</i>
<i>Landlocked developing countries</i>	<i>589 897</i>	<i>0.4812</i>	<i>4.89</i>	<i>4.88</i>	<i>1.00</i>	<i>9.45</i>	<i>9.43</i>	<i>1.00</i>	<i>11.19</i>	<i>11.13</i>	<i>1.01</i>	<i>14.07</i>	<i>14.02</i>	<i>1.00</i>	<i>Straight up</i>	<i>U1</i>	<i>U1</i>	<i>U1</i>	<i>U2</i>
Asia	112 301 149	91.6144	29.70	9.23	3.22	28.70	8.71	3.30	44.06	12.56	3.51	42.28	11.96	3.53	Inverted N	U1	D2	U1	D2
<i>Eastern Asia</i>	<i>74 770 377</i>	<i>60.9971</i>	<i>20.45</i>	<i>6.41</i>	<i>3.19</i>	<i>20.48</i>	<i>6.28</i>	<i>3.26</i>	<i>31.58</i>	<i>8.67</i>	<i>3.64</i>	<i>30.35</i>	<i>8.08</i>	<i>3.76</i>	<i>Inverted U</i>	<i>U1</i>	<i>U3</i>	<i>U1</i>	<i>D2</i>
<i>South-eastern Asia</i>	<i>24 829 623</i>	<i>20.2558</i>	<i>15.84</i>	<i>4.81</i>	<i>3.30</i>	<i>17.51</i>	<i>5.23</i>	<i>3.35</i>	<i>17.54</i>	<i>5.74</i>	<i>3.06</i>	<i>14.39</i>	<i>5.06</i>	<i>2.85</i>	<i>Inverted U</i>	<i>D3</i>	<i>U1</i>	<i>U2</i>	<i>D1</i>
<i>Southern Asia</i>	<i>11 995 286</i>	<i>9.7857</i>	<i>6.44</i>	<i>5.39</i>	<i>1.20</i>	<i>8.20</i>	<i>6.34</i>	<i>1.29</i>	<i>7.79</i>	<i>6.36</i>	<i>1.23</i>	<i>10.49</i>	<i>7.56</i>	<i>1.39</i>	<i>N-shape</i>	<i>U1</i>	<i>U1</i>	<i>D3</i>	<i>U1</i>
<i>Western Asia</i>	<i>597 590</i>	<i>0.4875</i>	<i>4.57</i>	<i>4.52</i>	<i>1.01</i>	<i>6.26</i>	<i>5.63</i>	<i>1.11</i>	<i>7.52</i>	<i>5.60</i>	<i>1.34</i>	<i>7.52</i>	<i>5.48</i>	<i>1.37</i>	<i>Inverted U</i>	<i>U1</i>	<i>U1</i>	<i>U3</i>	<i>D2</i>
<i>Central Asia</i>	<i>108 273</i>	<i>0.0883</i>	<i>2.07</i>	<i>2.07</i>	<i>1.00</i>	<i>3.05</i>	<i>3.05</i>	<i>1.00</i>	<i>3.47</i>	<i>3.47</i>	<i>1.00</i>	<i>5.71</i>	<i>5.71</i>	<i>1.00</i>	<i>Straight up</i>	<i>U2</i>	<i>U2</i>	<i>U2</i>	<i>U2</i>
1. China	70 483 538	57.4999	13.57	4.56	2.98	16.61	5.15	3.23	28.18	7.75	3.64	28.00	7.43	3.77	Inverted U	U1	U1	U1	D2
ISLD 2. Indonesia	14 845 014	12.1105	10.26	4.22	2.43	10.30	4.23	2.44	6.40	2.67	2.39	5.63	2.47	2.28	Inverted U	D1	U1	D1	D1
3. India	8 641 286	7.0495	5.51	4.74	1.16	6.15	4.89	1.26	4.55	3.76	1.21	6.58	4.59	1.43	N-shape	U3	U1	D1	U1
4. Viet Nam	4 614 692	3.7646	2.91	1.33	2.19	4.22	1.80	2.35	6.43	3.55	1.81	8.24	3.79	2.17	Straight up	U2	U1	U2	U1
5. Bangladesh	2 583 866	2.1079	1.65	1.20	1.37	7.69	5.58	1.38	12.01	9.39	1.28	14.30	11.48	1.25	Straight up	U2	U1	U2	U2
6. Republic of Korea	2 327 903	1.8991	6.90	2.74	2.52	7.14	2.61	2.74	7.74	3.22	2.41	6.95	3.30	2.11	Inverted U	U2	U3	U2	D3
ISLD 7. Philippines	2 322 831	1.8949	5.45	1.87	2.91	4.12	1.71	2.41	3.56	1.67	2.14	3.93	1.63	2.41	U-shape	D1	D1	D1	U3
11. Myanmar	1 145 018	0.9341	1.11	1.11	1.00	1.22	1.00	1.22	4.70	3.21	1.46	3.98	3.13	1.27	Inverted U	U1	U3	U1	D1
ISLD 12. Japan	996 297	0.8128	8.98	2.92	3.07	8.53	2.78	3.07	8.08	2.60	3.11	8.68	2.78	3.13	U-shape	D2	D1	D2	U1
13. Thailand	962 467	0.7852	8.28	2.83	2.93	7.48	2.58	2.90	6.70	2.31	2.90	7.24	2.65	2.73	U-shape	D1	D1	D2	U2
15. Democratic People's Republic of Korea	680 300	0.5550	1.91	1.49	1.28	2.20	1.42	1.55	1.55	1.03	1.51	1.59	1.06	1.51	N-shape	D2	U3	D1	U2
17. Iran (Islamic Republic of)	480 500	0.3920	3.56	3.56	1.00	4.49	3.25	1.38	4.16	3.63	1.15	4.90	3.53	1.39	N-shape	U3	U3	D3	U3
19. Türkiye	421 411	0.3438	3.47	3.47	1.00	2.86	2.78	1.03	3.03	2.99	1.01	3.61	3.42	1.06	U-shape	U3	D2	U2	U1
20. Cambodia	400 400	0.3266	5.52	5.52	1.00	6.03	5.24	1.15	8.20	6.98	1.17	7.70	6.19	1.24	Inverted U	U1	U3	U1	D2
21. Malaysia	400 017	0.3263	4.26	2.04	2.09	9.47	2.89	3.28	9.12	2.46	3.71	8.47	2.72	3.11	Inverted U	U1	U1	D2	D3
ISLD 24. Taiwan Province of China	278 503	0.2272	11.40	4.63	2.46	15.66	5.61	2.79	11.21	4.39	2.55	11.04	4.65	2.38	Inverted U	D3	U1	D1	D3
31. Pakistan	162 462	0.1325	1.03	1.00	1.03	1.04	1.00	1.04	5.56	5.52	1.01	5.67	5.59	1.01	Straight up	U2	U3	U2	U1
LLDCs 34. Lao People's Democratic Republic	130 020	0.1061	8.00	8.00	1.00	5.12	5.12	1.00	10.39	10.37	1.00	10.33	10.26	1.01	Inverted N	U1	D2	U1	D2
40. Saudi Arabia	99 907	0.0815	1.21	1.08	1.13	2.16	1.15	1.88	2.19	1.30	1.69	3.95	1.98	2.00	Straight up	U1	U1	U2	U1
LLDCs 41. Uzbekistan	98 003	0.0800	2.01	2.01	1.00	3.16	3.16	1.00	2.82	2.82	1.00	4.97	4.97	1.00	N-shape	U2	U2	D2	U2
LLDCs 43. Nepal	76 822	0.0627	1.75	1.75	1.00	4.40	4.40	1.00	5.87	5.87	1.00	6.98	6.98	1.00	Straight up	U2	U2	U2	U2
ISLD 50. Sri Lanka	42 119	0.0344	1.14	1.00	1.14	1.07	1.00	1.07	5.88	2.96	1.99	5.17	2.93	1.77	Inverted N	U1	D3	U1	D1
59. Iraq	22 704	0.0185	1.00	1.00	1.00	1.00	1.00	1.00	1.91	1.91	1.00	1.71	1.71	1.00	Inverted U	U2	U2	U2	D2
LLDCs 66. Armenia	18 350	0.0150	1.93	1.93	1.00	2.70	2.70	1.00	3.51	3.42	1.03	2.77	2.77	1.00	Inverted U	U2	U2	U1	D1
71. Israel	14 700	0.0120	3.09	3.08	1.00	5.35	5.35	1.00	5.77	5.77	1.00	5.80	5.80	1.00	Straight up	U2	U2	U2	U2
LLDCs 84. Afghanistan	8 050	0.0066	1.00	1.00	1.00	1.00	1.00	1.00	1.28	1.28	1.00	1.04	1.04	1.00	Inverted U	U2	U2	U2	D2
ISLD 86. Cyprus	7 343	0.0060	2.53	2.53	1.00	2.38	2.04	1.16	2.20	2.20	1.00	2.05	2.02	1.02	Straight down	D2	D2	D3	D2
LLDCs 88. Kazakhstan	6 795	0.0055	1.89	1.89	1.00	1.31	1.31	1.00	3.73	3.73	1.00	7.06	7.06	1.00	U-shape	U2	D2	U2	U2
SIDS 93. Singapore	4 829	0.0039	4.38	1.65	2.66	4.79	2.17	2.21	8.07	5.77	1.40	11.67	6.06	1.93	Straight up	U2	U2	U2	U1

Country or area: • Regional aquaculture in italic • National aquaculture indexed by production ranking in 2020 • LDLC = Landlocked • LLDCs = Landlocked Developing Countries • ISLD = Island • SIDS = Small Island Developing States	Aquaculture production		Diversity measures ENS = Effective number of species (a measure of overall species diversity); WGENS = Within-group ENS (a measure of within-group diversity); ENSG = Effective number of species groups (a measure of between-group diversity); ENS = WGENS × ENSG												U1: ENS increase (both components up) U2: ENS increase (only WGENS up) U3: ENS increase (only ENSG up) D1: ENS decrease (both components down) D2: ENS decrease (only WGENS down) D3: ENS decrease (only ENSG down)				
	Year 2020		Year 1990			Year 2000			Year 2010			Year 2020			Overall: 1990–2020		1990–2000	2000–2010	2010–2020
	Thousand tonnes	% of world production	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ENS	WGENS	ENSG					
98. China, Hong Kong Special Administrative Region	3 835	0.0031	12.05	9.15	1.32	12.27	9.27	1.32	9.52	6.28	1.52	7.25	4.64	1.56	Inverted U	D2	U1	D2	D2
ISLD 103. Brunei Darussalam	3 500	0.0029	3.46	3.46	1.00	4.86	2.62	1.86	3.82	2.08	1.83	2.47	1.68	1.47	Inverted U	D2	U3	D1	D1
106. United Arab Emirates	3 048	0.0025							1.32	1.00	1.32	4.49	3.31	1.36					U1
LLDCs 110. Kyrgyzstan	2 550	0.0021	1.80	1.80	1.00	2.09	2.09	1.00	2.95	2.95	1.00	3.98	3.98	1.00	Straight up	U2	U2	U2	U2
111. Syrian Arab Republic	2 300	0.0019	1.69	1.69	1.00	2.35	2.35	1.00	3.42	3.42	1.00	3.67	3.67	1.00	Straight up	U2	U2	U2	U2
115. Jordan	2 055	0.0017	1.89	1.89	1.00	1.06	1.06	1.00	2.00	2.00	1.00	2.00	2.00	1.00	U-shape	U2	D2	U2	U2
117. Georgia	2 027	0.0017	1.18	1.18	1.00	3.11	3.11	1.00	4.65	4.65	1.00	3.34	3.34	1.00	Inverted U	U2	U2	U2	D2
125. Oman	1 307	0.0011							1.00	1.00	1.00	1.62	1.62	1.00					U2
SIDS 133. Timor-Leste	835	0.0007							1.20	1.03	1.17	1.73	1.10	1.57					U1
134. Lebanon	828	0.0007	1.00	1.00	1.00	1.00	1.00	1.00	1.40	1.26	1.11	1.20	1.10	1.09	Inverted U	U1		U1	D1
LLDCs 135. Tajikistan	775	0.0006	2.06	2.06	1.00	2.41	2.41	1.00	3.82	3.82	1.00	2.94	2.94	1.00	Inverted U	U2	U2	U2	D2
140. State of Palestine	600	0.0005							2.81	2.81	1.00	1.70	1.70	1.00					D2
LLDCs 143. Azerbaijan	533	0.0004	1.57	1.57	1.00	1.68	1.68	1.00	2.68	2.68	1.00	4.74	4.74	1.00	Straight up	U2	U2	U2	U2
144. Kuwait	450	0.0004				3.76	3.76	1.00	1.15	1.15	1.00	1.00	1.00	1.00	Straight down			D2	D2
LLDCs 150. Bhutan	181	0.0001	1.00	1.00	1.00	1.00	1.00	1.00	7.15	7.15	1.00	6.31	6.31	1.00	Inverted U	U2		U2	D2
LLDCs 151. Turkmenistan	150	0.0001	1.97	1.97	1.00	1.14	1.14	1.00	2.46	2.46	1.00	4.45	4.45	1.00	U-shape	U2	D2	U2	U2
169. Qatar	23	0.0000							1.00	1.00	1.00	1.16	1.00	1.16					U3
SIDS 186. Bahrain	6	0.0000				1.00	1.00	1.00	2.48	2.48	1.00	1.36	1.36	1.00	Inverted U	U2		U2	D2
Americas	4 400 548	3.5899	13.06	4.17	3.13	16.04	6.84	2.34	15.93	5.78	2.76	11.46	4.18	2.74	Inverted U	D3	U2	D2	D1
<i>Northern America</i>	<i>619 542</i>	<i>0.5054</i>	<i>6.63</i>	<i>2.87</i>	<i>2.31</i>	<i>6.66</i>	<i>3.52</i>	<i>1.89</i>	<i>7.71</i>	<i>3.20</i>	<i>2.41</i>	<i>8.06</i>	<i>3.09</i>	<i>2.61</i>	<i>Straight up</i>	<i>U1</i>	<i>U2</i>	<i>U3</i>	<i>U3</i>
<i>Latin America and the Caribbean</i>	<i>3 781 006</i>	<i>3.0845</i>	<i>9.05</i>	<i>2.93</i>	<i>3.09</i>	<i>13.70</i>	<i>5.65</i>	<i>2.43</i>	<i>11.13</i>	<i>4.02</i>	<i>2.77</i>	<i>8.70</i>	<i>3.24</i>	<i>2.68</i>	<i>Inverted U</i>	<i>D3</i>	<i>U2</i>	<i>D2</i>	<i>D1</i>
<i>South America</i>	<i>3 307 229</i>	<i>2.6980</i>	<i>6.20</i>	<i>2.01</i>	<i>3.08</i>	<i>12.40</i>	<i>5.28</i>	<i>2.35</i>	<i>11.23</i>	<i>4.13</i>	<i>2.72</i>	<i>8.47</i>	<i>3.16</i>	<i>2.68</i>	<i>Inverted U</i>	<i>U2</i>	<i>U2</i>	<i>D2</i>	<i>D1</i>
<i>Central America</i>	<i>442 119</i>	<i>0.3607</i>	<i>6.59</i>	<i>2.67</i>	<i>2.47</i>	<i>4.25</i>	<i>2.02</i>	<i>2.10</i>	<i>2.75</i>	<i>1.41</i>	<i>1.96</i>	<i>3.29</i>	<i>1.59</i>	<i>2.07</i>	<i>U-shape</i>	<i>D1</i>	<i>D1</i>	<i>D1</i>	<i>U1</i>
<i>Caribbean</i>	<i>31 658</i>	<i>0.0258</i>	<i>5.95</i>	<i>3.91</i>	<i>1.52</i>	<i>5.06</i>	<i>3.25</i>	<i>1.56</i>	<i>5.82</i>	<i>3.49</i>	<i>1.67</i>	<i>6.29</i>	<i>3.40</i>	<i>1.85</i>	<i>U-shape</i>	<i>U3</i>	<i>D2</i>	<i>U1</i>	<i>U3</i>
9. Chile	1 505 486	1.2282	3.92	1.66	2.36	5.05	2.71	1.86	4.48	2.20	2.04	3.39	1.77	1.91	Inverted U	D3	U2	D2	D1
14. Ecuador	774 569	0.6319	1.53	1.47	1.04	1.77	1.10	1.61	1.66	1.03	1.61	1.11	1.01	1.10	Inverted U	D2	U3	D2	D1
16. Brazil	630 200	0.5141	1.60	1.07	1.50	8.19	4.07	2.02	7.93	4.22	1.88	5.13	3.29	1.56	Inverted U	U1	U1	D3	D1
18. United States of America	448 535	0.3659	5.08	2.15	2.36	4.82	2.52	1.91	5.76	2.25	2.57	6.60	2.35	2.81	U-shape	U1	D3	U3	U1
23. Mexico	278 694	0.2274	5.80	2.53	2.29	3.55	1.64	2.17	2.14	1.24	1.73	2.78	1.36	2.05	U-shape	D1	D1	D1	U1
29. Colombia	179 351	0.1463	3.26	1.65	1.97	5.52	3.42	1.61	4.51	2.92	1.54	5.25	4.60	1.14	N-shape	U2	U2	D1	U2
30. Canada	171 007	0.1395	6.75	3.82	1.77	4.40	2.50	1.76	3.60	2.07	1.74	3.15	1.98	1.59	Straight down	D1	D1	D1	D1
32. Peru	143 830	0.1173	3.17	1.46	2.17	2.75	1.11	2.47	2.75	1.14	2.42	3.62	1.23	2.93	U-shape	U3	D2	U2	U1
44. Honduras	71 151	0.0580	1.20	1.02	1.18	1.62	1.00	1.62	1.96	1.00	1.96	1.99	1.00	1.99	Straight up	U3	U3	U3	U3
46. Venezuela (Bolivarian Republic of)	53 609	0.0437	4.26	1.42	3.00	3.03	1.51	2.01	2.34	1.31	1.79	1.85	1.05	1.77	Straight down	D1	D3	D1	D1
54. Guatemala	33 651	0.0275	1.86	1.15	1.61	5.12	2.55	2.00	1.18	1.01	1.17	1.98	1.02	1.95	N-shape	U3	U1	D1	U1
56. Nicaragua	29 410	0.0240	1.27	1.03	1.23	1.09	1.06	1.03	1.11	1.00	1.11	1.00	1.00	1.00	Inverted N	D1	D3	U1	D3
SIDS 57. Cuba	26 200	0.0214	3.98	2.62	1.52	3.25	2.07	1.57	4.00	2.39	1.68	3.97	2.09	1.90	Inverted N	D2	D2	U1	D2
67. Costa Rica	16 269	0.0133	2.65	1.27	2.08	1.99	1.33	1.50	2.02	1.40	1.45	2.12	1.42	1.49	U-shape	D3	D3	U2	U1
LLDCs 73. Paraguay	14 100	0.0115	2.79	2.79	1.00	4.85	4.85	1.00	2.09	2.09	1.00	2.83	2.83	1.00	N-shape	U2	U2	D2	U2
83. El Salvador	8 500	0.0069	1.83	1.07	1.71	2.12	1.23	1.72	1.38	1.01	1.37	1.51	1.01	1.49	N-shape	D1	U1	D1	U1
97. Panama	3 879	0.0032	2.07	1.54	1.35	2.02	1.01	2.00	2.01	1.29	1.56	3.04	1.54	1.98	U-shape	U3	D2	D3	U1
LLDCs 100. Bolivia (Plurinational State of)	3 720	0.0030	2.93	2.93	1.00	1.78	1.78	1.00	3.88	3.88	1.00	5.09	5.09	1.00	U-shape	U2	D2	U2	U2
SIDS 108. Dominican Republic	2 680	0.0022	5.01	2.51	2.00	3.20	1.84	1.74	3.96	1.98	2.00	7.67	5.26	1.46	U-shape	U2	D1	U1	U2
113. Argentina	2 085	0.0017	1.00	1.00	1.00	2.71	1.97	1.38	3.20	2.32	1.38	3.12	3.00	1.04	Inverted U	U1	U1	U1	D3
SIDS 121. Haiti	1 560	0.0013				1.76	1.76	1.00	1.38	1.38	1.00	1.52	1.52	1.00	U-shape			D2	U2

Country or area: <ul style="list-style-type: none"> • Regional aquaculture in italic • National aquaculture indexed by production ranking in 2020 • LDLK = Landlocked • LLDCs = Landlocked Developing Countries • ISLD = Island • SIDS = Small Island Developing States 	Aquaculture production		Diversity measures ENS = Effective number of species (a measure of overall species diversity); WGENS = Within-group ENS (a measure of within-group diversity); ENSG = Effective number of species groups (a measure of between-group diversity); ENS = WGENS × ENSG												U1: ENS increase (both components up) U2: ENS increase (only WGENS up) U3: ENS increase (only ENSG up) D1: ENS decrease (both components down) D2: ENS decrease (only WGENS down) D3: ENS decrease (only ENSG down)					
			Year 2020		Year 1990			Year 2000			Year 2010			Year 2020			Overall: 1990–2020		1990–2000	2000–2010
	Thousand tonnes	% of world production	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ENS	WGENS	ENSG			
SIDS 130. Jamaica	918	0.0007	1.08	1.01	1.06	1.02	1.00	1.02	1.19	1.01	1.18	1.05	1.02	1.03	Inverted N	D3	D1	U1	D3	
SIDS 141. Belize	565	0.0005	1.00	1.00	1.00	1.00	1.00	1.00	1.43	1.04	1.38	1.47	1.00	1.47	Straight up	U3		U1	U3	
SIDS 153. Guyana	138	0.0001	1.96	1.00	1.96	3.84	2.15	1.79	4.95	3.60	1.37	2.00	1.17	1.72	Inverted U	U2	U2	U2	D2	
157. Uruguay	103	0.0001	1.00	1.00	1.00	1.98	1.54	1.29	1.59	1.59	1.00	3.27	3.27	1.00	N-shape	U2	U1	D3	U2	
SIDS 159. Saint Lucia	92	0.0001	1.00	1.00	1.00	1.00	1.00	1.00	2.11	1.00	2.11	1.44	1.00	1.44	Inverted U	U3		U3	D3	
SIDS 162. Guadeloupe	45	0.0000	1.00	1.00	1.00	1.00	1.00	1.00	2.36	1.23	1.93	1.53	1.27	1.20	Inverted U	U1		U1	D3	
SIDS 163. Martinique	42	0.0000	2.17	1.09	1.98	2.75	1.42	1.94	2.47	1.96	1.26	1.68	1.11	1.51	Inverted U	D3	U2	D3	D2	
SIDS 165. Suriname	37	0.0000				1.94	1.00	1.94	1.18	1.00	1.18	2.54	1.42	1.79	U-shape			D3	U1	
SIDS 168. Barbados	26	0.0000							1.75	1.00	1.75	1.10	1.00	1.10					D3	
SIDS 170. Grenada	23	0.0000				1.75	1.00	1.75				1.11	1.00	1.11						
SIDS 174. Antigua and Barbuda	20	0.0000				1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00					U3	
SIDS 176. Puerto Rico	18	0.0000	1.13	1.00	1.13	1.79	1.30	1.38	1.97	1.14	1.73	2.65	1.40	1.89	Straight up	U1	U1	U3	U1	
SIDS 178. Saint Vincent and the Grenadines	13	0.0000										1.00	1.00	1.00						
SIDS 184. United States Virgin Islands	8	0.0000							2.00	2.00	1.00	2.83	2.83	1.00					U2	
SIDS 185. Bahamas	6	0.0000	1.58	1.25	1.26	1.00	1.00	1.00	1.00	1.00	1.00	1.57	1.00	1.57	U-shape	D2	D1		U3	
SIDS 187. Trinidad and Tobago	4	0.0000	1.00	1.00	1.00	1.20	1.20	1.00	3.11	2.65	1.17	1.73	1.73	1.00	Inverted U	U2	U2	U1	D1	
190. French Guiana	2	0.0000	1.00	1.00	1.00	1.63	1.00	1.63	2.83	1.61	1.75	2.00	2.00	1.00	Inverted U	U2	U3	U1	D3	
SIDS 192. Saint Kitts and Nevis	2	0.0000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00		U3			U3	
SIDS 193. Aruba	2	0.0000										1.00	1.00	1.00						
SIDS 194. British Virgin Islands	1	0.0000										1.00	1.00	1.00						
ISLD 196. Bonaire, Sint Eustatius and Saba	0.2	0.0000										1.00	1.00	1.00						
Europe	3 284 407	2.6794	9.78	4.76	2.06	10.22	5.12	2.00	8.19	4.64	1.76	7.29	4.30	1.69	Inverted U	D1	U2	D1	D1	
<i>Northern Europe</i>	<i>1 955 977</i>	<i>1.5957</i>	<i>2.72</i>	<i>2.09</i>	<i>1.30</i>	<i>2.11</i>	<i>1.70</i>	<i>1.24</i>	<i>1.97</i>	<i>1.61</i>	<i>1.22</i>	<i>1.67</i>	<i>1.48</i>	<i>1.13</i>	<i>Straight down</i>	<i>D1</i>	<i>D1</i>	<i>D1</i>	<i>D1</i>	
<i>Southern Europe</i>	<i>610 447</i>	<i>0.4980</i>	<i>5.49</i>	<i>2.89</i>	<i>1.90</i>	<i>6.79</i>	<i>3.46</i>	<i>1.96</i>	<i>8.05</i>	<i>3.92</i>	<i>2.05</i>	<i>8.05</i>	<i>3.90</i>	<i>2.06</i>	<i>Straight up</i>	<i>U1</i>	<i>U1</i>	<i>U1</i>	<i>U3</i>	
<i>Eastern Europe</i>	<i>447 650</i>	<i>0.3652</i>	<i>2.37</i>	<i>2.22</i>	<i>1.07</i>	<i>4.52</i>	<i>4.10</i>	<i>1.10</i>	<i>5.39</i>	<i>5.07</i>	<i>1.06</i>	<i>10.44</i>	<i>6.45</i>	<i>1.62</i>	<i>Straight up</i>	<i>U1</i>	<i>U1</i>	<i>U2</i>	<i>U1</i>	
<i>Western Europe</i>	<i>270 332</i>	<i>0.2205</i>	<i>4.57</i>	<i>2.66</i>	<i>1.72</i>	<i>5.32</i>	<i>2.95</i>	<i>1.80</i>	<i>6.35</i>	<i>3.37</i>	<i>1.89</i>	<i>5.93</i>	<i>3.20</i>	<i>1.85</i>	<i>Inverted U</i>	<i>U1</i>	<i>U1</i>	<i>U1</i>	<i>D1</i>	
10. Norway	1 490 412	1.2159	1.17	1.16	1.00	1.43	1.42	1.01	1.41	1.39	1.01	1.31	1.29	1.01	Inverted U	U1	U1	D2	D1	
22. Russian Federation	291 194	0.2376	2.02	1.81	1.11	4.67	3.81	1.23	5.45	5.03	1.08	10.03	5.29	1.89	Straight up	U1	U1	U2	U1	
25. Spain	276 571	0.2256	1.91	1.29	1.49	2.41	1.50	1.61	2.97	1.61	1.84	2.97	1.61	1.85	Inverted U	U1	U1	U1	D2	
ISLD 27. United Kingdom	221 000	0.1803	2.44	1.96	1.25	1.79	1.35	1.33	2.13	1.38	1.54	1.69	1.34	1.26	Inverted N	D2	D2	U1	D1	
28. France	191 350	0.1561	4.03	2.49	1.62	4.59	2.69	1.71	5.36	3.02	1.77	4.62	2.60	1.77	Inverted U	U1	U1	U1	D2	
33. Greece	131 737	0.1075	4.41	2.26	1.95	3.80	2.16	1.76	3.45	2.30	1.50	3.69	2.40	1.54	U-shape	D3	D1	D3	U1	
36. Italy	122 778	0.1002	3.96	1.87	2.12	4.43	2.23	1.99	4.80	2.52	1.90	4.51	2.31	1.95	Inverted U	U2	U2	U2	D2	
ISLD 42. Faeroe Islands	89 055	0.0727	1.03	1.03	1.00	1.17	1.17	1.00	1.20	1.20	1.00	1.01	1.00	1.01	Inverted U	D2	U2	U2	D2	
47. Poland	47 700	0.0389	1.67	1.67	1.00	2.28	2.28	1.00	2.85	2.85	1.00	3.69	3.69	1.00	Straight up	U1	U2	U2	U1	
49. Denmark	42 629	0.0348	1.13	1.13	1.00	1.31	1.30	1.00	1.62	1.30	1.24	2.24	1.46	1.53	Straight up	U1	U1	U3	U1	
ISLD 51. Iceland	40 595	0.0331	1.23	1.23	1.00	2.07	2.01	1.03	3.45	3.32	1.04	1.65	1.65	1.00	Inverted U	U1	U1	U1	D1	
52. Netherlands	39 940	0.0326	1.14	1.07	1.07	1.61	1.21	1.34	1.95	1.39	1.40	2.18	1.46	1.49	Straight up	U1	U1	U1	U1	
ISLD 53. Ireland	37 751	0.0308	2.41	1.34	1.80	3.13	1.60	1.95	3.18	1.65	1.93	3.29	1.69	1.95	Straight up	U1	U1	U2	U1	
55. Germany	32 258	0.0263	3.51	1.88	1.87	3.56	1.84	1.93	4.15	2.86	1.45	5.42	2.73	1.99	Straight up	U1	U3	U2	U3	
60. Croatia	21 718	0.0177				7.30	4.65	1.57	7.14	4.84	1.48	5.12	4.58	1.12	Straight down			D3	D1	
LDLK 62. Czechia	20 401	0.0166				1.87	1.87	1.00	1.96	1.96	1.00	2.09	2.09	1.00	Straight up			U2	U2	
ISLD 63. Malta	19 829	0.0162	1.89	1.89	1.00	2.48	1.48	1.00	2.00	2.00	1.00	1.71	1.71	1.00	Inverted N	D2	D2	D2	D2	
64. Ukraine	18 568	0.0151	1.64	1.64	1.00	2.57	2.56	1.00	1.89	1.85	1.02	3.08	3.08	1.00	N-shape	U2	U1	D2	U2	
LDLK 65. Hungary	18 373	0.0150	2.36	2.36	1.00	3.04	3.04	1.00	2.97	2.97	1.00	3.05	3.05	1.00	N-shape	U2	U2	D2	U2	
69. Finland	15 053	0.0123	1.08	1.08	1.00	1.07	1.07	1.00	1.31	1.31	1.00	1.26	1.26	1.00	Inverted N	U2	D2	U2	D2	
70. Bulgaria	15 052	0.0123	1.93	1.93	1.00	5.37	5.27	1.02	6.02	4.43	1.36	6.24	4.11	1.52	Straight up	U1	U1	U3	U3	
72. Portugal	14 552	0.0119	3.79	1.90	2.00	6.15	3.09	1.99	5.94	3.01	1.97	6.49	3.28	1.98	N-shape	U2	U2	D1	U1	

Country or area: <ul style="list-style-type: none"> • Regional aquaculture in italic • National aquaculture indexed by production ranking in 2020 • LDLC = Landlocked • LLDCs = Landlocked Developing Countries • ISLD = Island • SIDS = Small Island Developing States 	Aquaculture production		Diversity measures												U1: ENS increase (both components up) U2: ENS increase (only WGENS up) U3: ENS increase (only ENSG up) D1: ENS decrease (both components down) D2: ENS decrease (only WGENS down) D3: ENS decrease (only ENSG down)				
			ENS = Effective number of species (a measure of overall species diversity); WGENS = Within-group ENS (a measure of within-group diversity); ENSG = Effective number of species groups (a measure of between-group diversity); ENS = WGENS × ENSG																
	Year 2020		Year 1990			Year 2000			Year 2010			Year 2020			Overall: 1990–2020		1990–2000	2000–2010	2010–2020
	Thousand tonnes	% of world production	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ENS	WGENS	ENSG		
LLDCs 75. Republic of Moldova	12 600	0.0103	1.99	1.99	1.00	5.27	5.08	1.04	4.57	4.49	1.02	4.17	4.16	1.00	Inverted U	U1	U1	D1	D1
76. Romania	12 200	0.0100	4.49	4.49	1.00	5.34	5.34	1.00	7.01	7.01	1.00	5.93	5.93	1.00	Inverted U	U2	U2	U2	D2
77. Sweden	12 090	0.0099	2.14	1.45	1.47	2.17	1.58	1.37	2.20	1.50	1.47	2.24	1.38	1.63	Straight up	U3	U2	U3	U3
81. Albania	9 284	0.0076	1.58	1.13	1.40	2.14	1.09	1.97	3.72	1.83	2.03	3.36	2.93	1.15	Inverted U	U2	U3	U1	D3
LDLK 82. Belarus	9 266	0.0076	1.03	1.03	1.00	1.68	1.68	1.00	2.20	2.20	1.00	2.48	2.48	1.00	Straight up	U2	U2	U2	U2
LDLK 90. Serbia	6 010	0.0049							2.38	2.38	1.00	2.30	2.30	1.00					D2
95. Austria	4 527	0.0037	1.89	1.89	1.00	2.60	2.59	1.00	4.18	4.18	1.00	7.02	7.02	1.00	Straight up	U2	U1	U2	U2
96. Lithuania	4 477	0.0037	1.07	1.07	1.00	1.22	1.22	1.00	1.52	1.52	1.00	2.85	2.85	1.00	Straight up	U2	U2	U2	U2
99. Bosnia and Herzegovina	3 776	0.0031							3.39	3.22	1.05	1.89	1.89	1.00					D1
LDLK 112. Slovakia	2 296	0.0019				1.85	1.85	1.00	2.11	2.11	1.00	3.82	3.82	1.00	Straight up			U2	U2
LDLK 116. Switzerland	2 048	0.0017	1.55	1.55	1.00	1.15	1.15	1.00	1.73	1.73	1.00	3.58	3.32	1.08	U-shape	U1	D2	U2	U1
118. Slovenia	1 673	0.0014				2.78	2.37	1.17	3.64	2.63	1.38	4.38	2.52	1.74	Straight up			U1	U3
LLDCs 119. North Macedonia	1 634	0.0013				2.64	2.64	1.00	1.72	1.72	1.00	2.13	2.13	1.00	U-shape			D2	U2
127. Channel Islands	1 107	0.0009	1.30	1.30	1.00	1.81	1.81	1.00	1.65	1.62	1.02	1.35	1.35	1.00	Inverted U	U2	U2	D2	D1
129. Estonia	1 090	0.0009	1.97	1.97	1.00	1.67	1.67	1.00	1.82	1.81	1.01	1.85	1.84	1.01	U-shape	D2	D2	U1	U1
132. Montenegro	885	0.0007							3.16	1.91	1.66	2.87	1.59	1.81					D2
137. Latvia	717	0.0006	1.00	1.00	1.00	1.80	1.80	1.00	2.51	2.50	1.00	2.51	2.51	1.00	Inverted U	U2	U2	U1	D3
149. Belgium	209	0.0002	2.50	2.50	1.00	5.15	5.15	1.00	2.42	1.22	1.99	1.00	1.00	1.00	Inverted U	D2	U2	D2	D1
Africa	2 354 294	1.9206	7.92	4.95	1.60	7.65	4.93	1.55	7.88	5.50	1.43	7.00	5.61	1.25	Inverted N	D3	D1	U2	D3
<i>Northern Africa</i>	<i>1 632 296</i>	<i>1.3316</i>	<i>3.80</i>	<i>3.65</i>	<i>1.04</i>	<i>4.13</i>	<i>4.09</i>	<i>1.01</i>	<i>4.04</i>	<i>4.00</i>	<i>1.01</i>	<i>4.00</i>	<i>3.94</i>	<i>1.02</i>	<i>Inverted U</i>	<i>U2</i>	<i>U2</i>	<i>D2</i>	<i>D2</i>
<i>Sub-Saharan Africa</i>	<i>731 848</i>	<i>0.5970</i>	<i>9.77</i>	<i>3.81</i>	<i>2.56</i>	<i>8.17</i>	<i>3.30</i>	<i>2.47</i>	<i>7.63</i>	<i>3.88</i>	<i>1.96</i>	<i>8.60</i>	<i>5.25</i>	<i>1.64</i>	<i>U-shape</i>	<i>D3</i>	<i>D1</i>	<i>D3</i>	<i>U2</i>
<i>Eastern Africa</i>	<i>352 897</i>	<i>0.2879</i>	<i>3.61</i>	<i>1.75</i>	<i>2.06</i>	<i>2.92</i>	<i>1.44</i>	<i>2.03</i>	<i>4.15</i>	<i>1.92</i>	<i>2.16</i>	<i>5.35</i>	<i>2.73</i>	<i>1.96</i>	<i>U-shape</i>	<i>U2</i>	<i>D1</i>	<i>U1</i>	<i>U2</i>
<i>Western Africa</i>	<i>345 674</i>	<i>0.2820</i>	<i>5.45</i>	<i>5.21</i>	<i>1.05</i>	<i>8.76</i>	<i>8.58</i>	<i>1.02</i>	<i>6.14</i>	<i>6.11</i>	<i>1.01</i>	<i>6.71</i>	<i>6.61</i>	<i>1.01</i>	<i>N-shape</i>	<i>U2</i>	<i>U2</i>	<i>D1</i>	<i>U1</i>
<i>Southern Africa</i>	<i>12 920</i>	<i>0.0105</i>	<i>4.67</i>	<i>2.27</i>	<i>2.06</i>	<i>5.22</i>	<i>2.23</i>	<i>2.34</i>	<i>7.56</i>	<i>2.55</i>	<i>2.97</i>	<i>5.32</i>	<i>1.78</i>	<i>2.98</i>	<i>Inverted U</i>	<i>U3</i>	<i>U3</i>	<i>U1</i>	<i>D2</i>
<i>Middle Africa</i>	<i>10 507</i>	<i>0.0086</i>	<i>2.19</i>	<i>2.19</i>	<i>1.00</i>	<i>1.92</i>	<i>1.92</i>	<i>1.00</i>	<i>2.47</i>	<i>2.37</i>	<i>1.04</i>	<i>3.12</i>	<i>2.99</i>	<i>1.04</i>	<i>U-shape</i>	<i>U1</i>	<i>D2</i>	<i>U1</i>	<i>U1</i>
8. Egypt	1 591 896	1.2987	3.27	3.27	1.00	3.95	3.95	1.00	3.90	3.88	1.01	3.77	3.73	1.01	Inverted U	U1	U2	D2	D2
26. Nigeria	261 711	0.2135	4.39	4.39	1.00	6.84	6.84	1.00	5.39	5.39	1.00	5.66	5.64	1.00	N-shape	U1	U2	D2	U1
LLDCs 35. Uganda	123 897	0.1011	2.75	2.75	1.00	3.43	3.43	1.00	1.96	1.96	1.00	1.89	1.89	1.00	Inverted U	D2	U2	D2	D2
38. United Republic of Tanzania	108 568	0.0886	1.18	1.00	1.18	1.03	1.00	1.03	1.03	1.01	1.03	1.70	1.09	1.56	U-shape	U1	D3	U2	U1
45. Ghana	64 010	0.0522	1.70	1.70	1.00	1.90	1.90	1.00	1.39	1.39	1.00	1.36	1.36	1.00	Inverted U	D2	U2	D2	D2
LLDCs 48. Zambia	45 670	0.0373	2.93	2.93	1.00	2.88	2.88	1.00	3.54	3.54	1.00	3.21	3.21	1.00	Inverted N	U2	D2	U2	D2
58. Tunisia	23 486	0.0192	6.92	4.09	1.69	7.34	5.72	1.28	5.45	4.75	1.15	2.95	2.82	1.04	Inverted U	D1	U2	D1	D1
61. Kenya	20 831	0.0170	4.61	2.86	1.61	3.54	3.54	1.00	2.14	2.09	1.02	2.33	1.96	1.19	U-shape	D1	D3	D2	U3
LLDCs 68. Zimbabwe	15 425	0.0126	2.20	1.84	1.20	1.22	1.22	1.00	1.15	1.15	1.00	1.03	1.03	1.00	Straight down	D1	D1	D2	D2
ISLD 74. Madagascar	13 550	0.0111	1.75	1.50	1.17	2.42	1.00	2.42	3.10	1.04	2.97	2.11	1.00	2.10	Inverted U	U3	U3	U1	D1
78. Sudan	9 850	0.0080										1.66	1.66	1.00					
79. South Africa	9 753	0.0080	4.39	2.13	2.06	4.47	1.96	2.28	5.86	2.01	2.91	4.66	1.70	2.74	Inverted U	U3	U3	U1	D1
LLDCs 80. Malawi	9 393	0.0077	2.52	2.19	1.15	1.32	1.32	1.00	3.10	3.10	1.00	3.56	3.56	1.00	U-shape	U2	D1	U2	U2
LLDCs 85. Mali	7 686	0.0063	1.72	1.72	1.00	1.93	1.93	1.00	2.13	2.13	1.00	1.78	1.78	1.00	Inverted U	U2	U2	U2	D2
LLDCs 87. Rwanda	7 059	0.0058	1.31	1.31	1.00	1.32	1.32	1.00	1.13	1.13	1.00	1.40	1.39	1.00	N-shape	U1	U2	D2	U1
92. Algeria	5 436	0.0044	3.34	2.71	1.23	2.76	2.20	1.25	5.51	5.42	1.02	4.48	3.99	1.12	Inverted N	U2	D2	U2	D2
94. Côte d'Ivoire	4 620	0.0038	3.43	3.43	1.00	1.86	1.86	1.00	2.95	2.95	1.00	2.48	2.48	1.00	Inverted N	D2	D2	U2	D2
101. Democratic Republic of the Congo	3 590	0.0029	1.00	1.00	1.00	1.01	1.01	1.00	1.13	1.13	1.00	1.15	1.15	1.00	Straight up	U2	U2	U2	U2
102. Cameroon	3 556	0.0029	1.99	1.99	1.00	1.65	1.65	1.00	3.96	3.96	1.00	2.12	2.12	1.00	Inverted N	U2	D2	U2	D2
SIDS 104. Mauritius	3 298	0.0027	3.64	1.44	2.53	3.07	1.40	2.19	1.53	1.43	1.07	1.15	1.11	1.04	Straight down	D1	D1	D3	D1
105. Mozambique	3 162	0.0026	1.00	1.00	1.00				1.84	1.08	1.71	1.00	1.00	1.00					D1
107. Benin	2 987	0.0024							1.96	1.96	1.00	2.00	2.00	1.00					U2
LLDCs 109. Lesotho	2 600	0.0021	2.08	2.08	1.00	1.00	1.00	1.00	1.01	1.01	1.00	1.00	1.00	1.00	Inverted N	D2	D2	U2	D2

Country or area: <ul style="list-style-type: none"> • Regional aquaculture in italic • National aquaculture indexed by production ranking in 2020 • LDLC = Landlocked • LLDCs = Landlocked Developing Countries • ISLD = Island • SIDS = Small Island Developing States 	Aquaculture production		Diversity measures												U1: ENS increase (both components up) U2: ENS increase (only WGENS up) U3: ENS increase (only ENSG up) D1: ENS decrease (both components down) D2: ENS decrease (only WGENS down) D3: ENS decrease (only ENSG down)			
			ENS = Effective number of species (a measure of overall species diversity); WGENS = Within-group ENS (a measure of within-group diversity); ENSG = Effective number of species groups (a measure of between-group diversity); ENS = WGENS × ENSG															
	Year 2020		Year 1990			Year 2000			Year 2010			Year 2020						
	Thousand tonnes	% of world production	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ENS	WGENS	ENSG	ENS	WGENS	ENSG	Overall: 1990–2020	1990–2000	2000–2010	2010–2020
114. Angola	2 062	0.0017				1.00	1.00	1.00	1.15	1.15	1.00	1.08	1.08	1.00	Inverted U		U2	D2
120. Morocco	1 618	0.0013	4.01	2.03	1.98	6.85	4.88	1.40	5.68	2.90	1.96	6.51	2.66	2.45	N-shape	U1	U2	D2
LLDCs 123. Burundi	1 450	0.0012	1.00	1.00	1.00	1.18	1.18	1.00	1.43	1.43	1.00	1.30	1.30	1.00	Inverted U	U2	U2	D2
126. Guinea	1 135	0.0009	1.00	1.00	1.00				1.96	1.96	1.00	3.71	3.71	1.00		U2		U2
128. Senegal	1 100	0.0009	1.82	1.00	1.82	1.41	1.05	1.34	3.30	1.52	2.18	3.67	1.84	2.00	U-shape	U1	D3	U1
131. Congo	900	0.0007	1.00	1.00	1.00	1.00	1.00	1.00	2.49	2.49	1.00	1.60	1.60	1.00	Inverted U	U2		U2
136. Togo	730	0.0006	1.00	1.00	1.00	1.00	1.00	1.00	2.13	2.13	1.00	1.31	1.31	1.00	Inverted U	U2		U2
LLDCs 138. Burkina Faso	651	0.0005	2.00	2.00	1.00	1.00	1.00	1.00	2.56	1.46	1.75	2.33	2.22	1.05	Inverted N	U1	D2	U1
LLDCs 139. Niger	649	0.0005	1.00	1.00	1.00	1.00	1.00	1.00	1.82	1.82	1.00	1.92	1.92	1.00	Straight up	U2		U2
LLDCs 142. Ethiopia	534	0.0004	1.69	1.69	1.00	3.75	3.75	1.00	2.96	2.96	1.00	2.17	2.17	1.00	Inverted U	U2	U2	D2
146. Namibia	321	0.0003	1.00	1.00	1.00	3.59	1.38	2.60	4.15	2.01	2.07	1.61	1.12	1.43	Inverted U	U1	U1	U2
147. Liberia	255	0.0002				3.35	3.35	1.00	1.69	1.69	1.00	1.48	1.48	1.00	Straight down			D2
LLDCs 148. Central African Republic	219	0.0002	1.21	1.21	1.00	1.00	1.00	1.00	3.33	2.09	1.59	4.86	2.84	1.71	U-shape	U1	D2	U1
LLDCs 152. Botswana	146	0.0001										1.76	1.76	1.00				
LLDCs 156. Chad	105	0.0001							1.57	1.57	1.00	3.42	2.10	1.63				U1
LLDCs 158. Eswatini	100	0.0001	1.00	1.00	1.00	4.24	3.27	1.30	1.00	1.00	1.00	1.00	1.00	1.00			U1	D1
160. Sierra Leone	85	0.0001	1.00	1.00	1.00	1.00	1.00	1.00	1.28	1.28	1.00	1.25	1.25	1.00	Inverted U	U2		D2
161. Gabon	60	0.0000	1.00	1.00	1.00	1.24	1.24	1.00	1.31	1.31	1.00	1.33	1.33	1.00	Straight up	U2	U2	U2
166. Gambia	33	0.0000	1.00	1.00	1.00	2.87	2.87	1.00	2.04	1.23	1.65	2.56	1.31	1.96	N-shape	U1	U2	D2
LLDCs 167. South Sudan	30	0.0000										1.28	1.28	1.00				
SIDS 171. Cabo Verde	22	0.0000										1.00	1.00	1.00				
ISLD 175. Mayotte	20	0.0000				1.00	1.00	1.00	1.64	1.64	1.00	1.00	1.00	1.00	Inverted U			U2
177. Equatorial Guinea	15	0.0000							1.96	1.96	1.00	2.69	2.69	1.00				U2
180. Libya	10	0.0000	1.00	1.00	1.00	2.95	2.95	1.00	2.55	2.55	1.00	1.00	1.00	1.00	Inverted U		U2	D2
ISLD 181. Réunion	10	0.0000	1.26	1.00	1.26	2.43	2.20	1.11	2.96	2.96	1.00	2.00	2.00	1.00	Inverted U	U2	U2	D2
Oceania	239 790	0.1956	5.87	2.23	2.64	5.79	2.16	2.68	7.56	2.65	2.85	6.26	2.22	2.82	Inverted N	U3	D2	U1
<i>Australia and New Zealand</i>	<i>224 670</i>	<i>0.1833</i>	<i>4.43</i>	<i>2.65</i>	<i>1.67</i>	<i>4.06</i>	<i>2.16</i>	<i>1.88</i>	<i>5.66</i>	<i>2.52</i>	<i>2.25</i>	<i>5.06</i>	<i>2.13</i>	<i>2.37</i>	<i>Inverted N</i>	<i>U3</i>	<i>D2</i>	<i>U1</i>
<i>Pacific islands</i>	<i>15 120</i>	<i>0.0123</i>	<i>1.51</i>	<i>1.04</i>	<i>1.45</i>	<i>2.59</i>	<i>1.12</i>	<i>2.31</i>	<i>5.09</i>	<i>1.96</i>	<i>2.59</i>	<i>3.54</i>	<i>1.30</i>	<i>2.72</i>	<i>Inverted U</i>	<i>U1</i>	<i>U1</i>	<i>D2</i>
ISLD 37. New Zealand	118 582	0.0967	1.74	1.29	1.35	1.53	1.18	1.29	1.60	1.12	1.43	1.57	1.07	1.47	Inverted N	D2	D1	U3
39. Australia	106 088	0.0865	6.24	2.77	2.25	7.61	2.83	2.69	7.19	2.91	2.47	4.43	2.14	2.07	Inverted U	D1	U1	D3
SIDS 89. Papua New Guinea	6 102	0.0050	1.82	1.82	1.00	1.21	1.21	1.00	2.86	2.10	1.36	2.30	1.25	1.84	Inverted N	U3	D2	U1
SIDS 91. Solomon Islands	5 504	0.0045	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.00	1.01	Straight up	U3		U3
SIDS 122. New Caledonia	1 478	0.0012	1.51	1.00	1.51	1.11	1.02	1.09	1.25	1.02	1.23	1.03	1.00	1.03	Inverted N	D3	D3	U1
SIDS 124. French Polynesia	1 371	0.0011	2.43	1.59	1.53	1.48	1.13	1.31	1.14	1.04	1.09	1.54	1.04	1.48	U-shape	D1	D1	U3
SIDS 145. Fiji	322	0.0003	1.06	1.00	1.06	2.09	1.01	2.07	1.94	1.00	1.94	3.28	1.17	2.80	N-shape	U1	U1	D1
SIDS 154. Guam	118	0.0001	2.50	2.50	1.00	3.01	2.14	1.41	2.85	2.09	1.36	2.79	1.94	1.44	Inverted U	U3	U3	D1
SIDS 155. Tonga	105	0.0001				3.13	1.28	2.44	1.01	1.00	1.01	1.01	1.01	1.00	U-shape			D1
SIDS 164. Northern Mariana Islands	41	0.0000							1.63	1.00	1.63	2.21	1.10	2.00				U1
SIDS 172. Palau	22	0.0000	1.00	1.00	1.00	1.00	1.00	1.00	2.71	1.47	1.85	2.53	2.53	1.00	Inverted U	U2		D3
SIDS 173. American Samoa	20	0.0000				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
SIDS 179. Samoa	10	0.0000							1.00	1.00	1.00	1.01	1.00	1.01				U1
SIDS 182. Marshall Islands	10	0.0000										1.58	1.00	1.58				
SIDS 183. Cook Islands	9	0.0000							1.00	1.00	1.00	2.92	2.03	1.44				U1
SIDS 188. Vanuatu	3	0.0000							1.73	1.00	1.73	1.99	1.23	1.62				U2
SIDS 189. Tuvalu	3	0.0000							1.00	1.00	1.00	1.00	1.00	1.00				
SIDS 191. Kiribati	2	0.0000	1.04	1.00	1.04	1.01	1.00	1.01	1.02	1.00	1.02	1.00	1.00	1.00	Inverted N	D1	D1	U3
SIDS 195. Nauru	1	0.0000										1.00	1.00	1.00				