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**ANALYTICAL RESULTS OF RESPONSES BY FAO MEMBERS AND
REGIONAL FISHERY BODIES AND AQUACULTURE NETWORKS
TO THE 2021 QUESTIONNAIRE ON THE CODE OF CONDUCT FOR
RESPONSIBLE FISHERIES IMPLEMENTATION IN AQUACULTURE**

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Table 1. FAO Members responding to the CCRF in aquaculture web-based questionnaire in the 2017, 2019 and 2021 surveys.

FAO Region	Country	2017	2019	2021
Africa	Algeria		✓	
	Angola		✓	
	Benin			
	Botswana			
	Burkina Faso	✓		
	Burundi	✓		
	Cabo Verde			
	Cameroon		✓	
	Central African Republic			
	Chad			
	Comoros			✓ L
	Congo			
	Côte d'Ivoire	✓	✓	✓ L
	Democratic Republic of the Congo			
	Equatorial Guinea	✓	✓	
	Eritrea			
	Eswatini		✓	✓
	Ethiopia			
	Gabon			
	Gambia		✓	
	Ghana		✓	✓ L
	Guinea		✓	✓ L
	Guinea-Bissau			
	Kenya		✓	
	Lesotho			
	Liberia			
	Madagascar			
	Malawi		✓	
	Mali		✓	
	Mauritania			✓ L
	Mauritius		✓	
	Morocco		✓	✓
	Mozambique			
	Namibia	✓	✓	
	Niger			
	Nigeria	✓	✓	✓ T
Rwanda			✓ L	
Sao Tome and Principe				
Senegal	✓	✓	✓ L	
Seychelles	✓	✓	✓	
Sierra Leone				
South Africa	✓	✓		
South Sudan	✓	✓		
Togo		✓		
Tunisia		✓	✓	
Uganda		✓		
United Republic of Tanzania				
Zambia		✓		
Zimbabwe		✓		
Total	49 members	11	25	12
Asia	Bangladesh	✓	✓	✓ T L
	Bhutan		✓	✓
	Brunei Darussalam			
	Cambodia			
	China	✓	✓	✓ T
	Democratic People's Republic of Korea		✓	
	India	✓	✓	✓ T L

FAO Region	Country	2017	2019	2021
	Indonesia	✓	✓	
	Japan	✓	✓	✓ T
	Kazakhstan		✓	
	Lao People's Democratic Republic			
	Malaysia	✓	✓	
	Maldives	✓	✓	✓
	Mongolia			
	Myanmar	✓	✓	✓ T
	Nepal		✓	
	Pakistan		✓	
	Philippines		✓	✓ T
	Republic of Korea			✓ T
	Singapore		✓	
	Sri Lanka		✓	✓
	Thailand	✓	✓	✓ T
	Timor-Leste			
Uzbekistan			✓ L	
Viet Nam	✓	✓	✓ T L	
Total	25 members	10	18	13
Europe	Albania			
	Andorra			
	Armenia			
	Austria	✓	✓	
	Azerbaijan	✓	✓	
	Belarus			✓
	Belgium		✓	
	Bosnia and Herzegovina	✓	✓	
	Bulgaria	✓		
	Croatia	✓	✓	
	Cyprus	✓	✓	✓
	Czechia	✓	✓	✓
	Denmark			
	Estonia	✓	✓	✓
	European Union			
	Faroe Islands	✓	✓	✓
	Finland			
	France			✓
	Georgia	✓	✓	✓
	Germany	✓	✓	✓
	Greece	✓	✓	
	Hungary	✓	✓	✓
	Iceland	✓		
	Ireland			
	Israel			
	Italy		✓	
	Latvia	✓	✓	✓
	Lithuania	✓	✓	✓
	Luxembourg			
	Malta	✓	✓	
	Monaco			
	Montenegro			
Netherlands	✓	✓		
North Macedonia			✓	
Norway	✓	✓	✓ T	
Poland		✓	✓	
Portugal	✓	✓		
Republic of Moldova				
Romania				
Russian Federation	✓	✓	✓ T	
San Marino				
Serbia	✓	✓		
Slovakia	✓			

FAO Region	Country	2017	2019	2021
	Slovenia	✓		
	Spain		✓	✓ T
	Sweden		✓	✓
	Switzerland	✓	✓	✓
	Turkey		✓	
	Ukraine	✓		
	United Kingdom of Great Britain and Northern Ireland	✓		
Total	50 members	27	27	18
Latin America and the Caribbean	Antigua and Barbuda			✓
	Argentina	✓	✓	
	Bahamas	✓		
	Barbados			
	Belize		✓	
	Bolivia (Plurinational State of)		✓	✓
	Brazil	✓	✓	✓ T
	Chile	✓	✓	✓ T
	Colombia	✓	✓	✓
	Costa Rica			
	Cuba	✓	✓	
	Dominica		✓	✓
	Dominican Republic		✓	
	Ecuador	✓	✓	✓ T
	El Salvador		✓	
	Grenada			
	Guatemala	✓	✓	
	Guyana		✓	✓
	Haiti			
	Honduras			
	Jamaica			✓
	Mexico	✓	✓	✓ T
	Nicaragua		✓	
	Panama		✓	✓
Paraguay	✓		✓	
Peru	✓	✓	✓	
Saint Kitts and Nevis		✓		
Saint Lucia				
Saint Vincent and the Grenadines	✓	✓	✓	
Suriname			✓	
Trinidad and Tobago	✓	✓	✓	
Uruguay	✓	✓		
Venezuela (Bolivarian Republic of)	✓	✓		
Total	34 members	16	21	16
Near East	Afghanistan			
	Bahrain			✓
	Djibouti		✓	
	Egypt	✓		
	Iran (Islamic Republic of)	✓	✓	✓ T
	Iraq		✓	✓
	Jordan	✓	✓	✓
	Kuwait	✓		
	Kyrgyzstan		✓	
	Lebanon	✓	✓	
	Libya		✓	
	Oman	✓	✓	✓
	Qatar		✓	
	Saudi Arabia	✓	✓	✓
Somalia				
Sudan		✓		

FAO Region	Country	2017	2019	2021
	Syrian Arab Republic			
	Tajikistan			
	Turkmenistan			
	United Arab Emirates			
	Yemen			
Total	21 members	7	11	6
Northern America	Canada	✓	✓	✓ T
	United States of America	✓	✓	✓ T
Total	2 members	2	2	2
Southwest Pacific	Australia			✓
	Cook Islands		✓	
	Fiji	✓	✓	
	Kiribati			✓
	Marshall Islands			✓
	Micronesia (Federated States of)			
	Nauru			✓
	New Zealand	✓	✓	✓
	Niue			
	Palau		✓	
	Papua New Guinea		✓	
	Samoa	✓	✓	✓
	Solomon Islands		✓	✓ L
	Tokelau			
Tonga		✓		
Tuvalu	✓	✓		
Vanuatu	✓			
Total	17 members	5	9	7
Sub-Total=	198 Members (100%)	78 (39%)	113 (57%)	74 (37%)

T = Submission received from main aquaculture producer (excluding aquatic plants) with more than 200,000 tonnes in 2018 (n=19)

L = Submission received from aquaculture producer (excluding aquatic plants) in the group of low-income food-deficit countries (LIFDCs) (n=12)

Table 2. Submission rates of web-based questionnaire responses from FAO Members by region, 2021

Region	Number of Members	Number of submissions	Submission rate
Africa (AF)	49 (25%)	12 (16%)	24.5 %
Asia (AS)	25 (13%)	13 (18%)	52.0 %
Europe (ER)	50 (25%)	18 (24%)	36.0 %
Latin America and the Caribbean (LC)	34 (17%)	16 (22%)	47.1 %
Near East (NE)	21 (11%)	6 (8%)	28.6 %
Northern America (NA)	2 (1%)	2 (3%)	100.0 %
Southwest Pacific (SP)	17 (9%)	7 (9%)	41.2 %
Total (Global)	198 (100%)	74 (100%)	37.4 %

Table 3. Average scores of FAO Members' self-assessment on implementation performance by region, 2021

Question (measure)/region	AF	AS	ER	LC	NE	NA	SP	Global
Part 1. ESSENTIAL MANAGEMENT INSTRUMENTS AND MEASURES	3.92	4.23	4.22	2.88	4.00	4.50	3.00	3.82
1. Aquaculture policy (73 - 2)	4.55	4.38	4.11	3.25	4.20	5.00	3.00	4.07
2. Aquaculture development plan (74 - 0)	4.17	4.38	4.22	2.44	4.00	4.00	3.57	3.83
Regulatory measures to support aquaculture development:	3.17	3.92	4.11	2.56	3.83	5.00	2.43	3.58
3. Access rights to land and water bodies (74 - 2)	3.50	4.08	4.17	3.13	3.83	4.50	3.40	3.80
4. Registration of aquaculture farms and hatcheries (74 - 0)	3.42	4.15	4.39	2.69	4.33	5.00	3.29	3.90
5. Zonation (area for aquaculture, or aquaculture systems or for species culture) (74 - 5)	3.18	3.83	2.61	2.53	3.80	3.50	2.67	3.16
6. Carrying capacity (limits set on density) (74 - 4)	3.09	3.33	3.12	2.33	3.33	4.50	2.14	3.12
7. Environmental assessment and monitoring (74 - 1)	3.33	3.85	4.44	2.67	3.67	4.50	3.29	3.68
8. Effluents (74 - 3)	3.00	3.46	4.61	2.21	3.80	5.00	2.29	3.48
9. Feeds (environmental impact, quality, food safety issues) (74 - 4)	3.00	4.00	4.22	2.77	3.67	5.00	1.83	3.50
10. Seed (as environmental issue e.g. source - wild, hatchery) (74 - 4)	3.33	4.08	3.94	2.64	3.50	4.00	2.14	3.38
11. Water abstraction (74 - 6)	3.17	3.58	4.11	2.57	3.80	5.00	2.20	3.49
12. Use of alien species along the lines of FAO's or OIE's guidelines or CBD provisions (including potential transboundary issues) (74 - 3)	3.17	4.31	4.35	2.44	3.20	5.00	3.17	3.66
13. Movement (within country and across borders) of live animals along the lines of FAOs or OIE's (74 - 1)	3.17	4.25	4.11	2.81	4.17	5.00	2.43	3.71
14. Impacts on biodiversity (74 - 0)	3.25	3.92	4.22	2.50	3.50	5.00	2.00	3.49
15. Escapes (74 - 2)	2.08	3.23	3.61	2.27	3.17	4.50	1.67	2.93
16. Stocking and restocking (74 - 5)	2.92	4.00	4.06	2.27	3.75	5.00	2.86	3.55
17. Food safety, (along the lines of CODEX Alimentarius) (74 - 2)	3.58	4.15	4.47	3.27	4.17	5.00	3.29	3.99
18. Use of drugs, chemicals and other substances (74 - 1)	3.00	4.15	4.67	3.13	3.67	4.50	2.83	3.71
19. Fish health management along the lines of FAO or OIE (74 - 1)	3.50	3.92	4.35	2.63	4.17	5.00	3.14	3.82
Part 2. SUPPORT MECHANISMS THAT FACILITATE THE IMPLEMENTATION OF THE REGULATORY MEASURES	3.00	3.77	3.72	2.56	3.50	4.00	3.00	3.36
20. Government monitoring, data collection and analysis system on aquaculture (74 - 1)	3.18	3.92	4.39	3.13	3.83	4.00	2.71	3.60
21. Consultation with stakeholders in formulating the Aquaculture Policy and/or Aquaculture Development Plan (74 - 0)	4.25	4.46	4.50	3.63	3.67	5.00	4.00	4.21
22. Participation of farmers associations in sector development and management (74 - 3)	3.42	4.50	4.56	3.00	3.80	5.00	3.57	3.98
23. Aquaculture is integrated in coastal development and management plans (74 - 8)	3.00	3.67	3.53	2.71	3.00	3.00	3.29	3.17
24. Aquaculture is integrated in watershed management or land use development plans (74 - 5)	2.36	3.62	3.06	2.13	3.00	3.00	2.00	2.74
25. Integration of aquaculture in community development planning (74 - 2)	2.58	3.83	2.89	2.07	2.83	4.00	2.86	3.01
26. Ecosystems functions are considered in aquaculture planning and development (e.g. wildlife sanctuary, water quality improvement, recreational, as well as greenhouse gas mitigation, carbon sequestration) (74 - 2)	2.67	4.08	4.00	3.07	3.50	4.50	2.43	3.46

Question (measure)/region	AF	AS	ER	LC	NE	NA	SP	Global
27. There is an incentive system for farmers to restore or rehabilitate resources degraded by their aquaculture activities (e.g. mangrove, other forests, salt marshes, abandoned lands, polluted water bodies, degraded soil) (74 – 17)	2.00	3.17	2.62	1.46	3.25	4.00	0.25	2.39
28. Practices are adopted that lead to improvement in the sustainability of aquaculture farms (i.e. better management practices or BMPs, good aquaculture practices or GAPs, codes of practice, etc.) (74 – 1)	3.17	4.31	3.44	2.87	3.50	4.50	3.14	3.56
29. Application of the polluter-pays principle (74 – 9)	2.00	2.42	4.12	2.43	2.80	4.50	2.33	2.94
30. Investment in aquaculture research (74 – 2)	3.00	3.62	3.67	2.20	2.80	4.00	3.43	3.24
31. Investment in aquaculture extension and training (74 – 2)	3.58	3.85	3.33	2.53	3.40	3.50	3.43	3.37
32. Investment in infrastructure and facilities that support aquaculture development (74 – 1)	3.33	4.08	3.28	2.50	3.60	3.00	3.43	3.32
PART 3. SPECIFIC ENHANCING MECHANISMS THAT IMPROVE THE EFFECTIVENESS OF THE ABOVE INSTRUMENTS AND MEASURES	2.08	3.54	3.28	2.00	3.17	4.00	2.57	2.95
33. Mechanisms are in place to ensure that livelihoods of the local communities are benefited and not adversely impacted when developing aquaculture (74 – 1)	3.00	3.85	3.22	2.31	3.83	4.50	3.83	3.51
34. There are voluntary certification system/s that promote the practice of responsible aquaculture (74 – 7)	2.18	3.33	3.47	1.60	2.8	5.00	1.71	2.87
35. Farms are covered by government assistance scheme in case of disasters (73 – 7)	1.00	3.50	3.27	1.50	3.00	3.50	2.57	2.62
36. Farmers have access to institutional credit (73 – 5)	2.80	3.69	3.00	2.44	3.50	4.00	1.83	3.04
37. Aquaculture farmers have access to commercial insurance (73 – 8)	1.18	2.55	3.13	1.20	2.40	3.50	1.67	2.23
PART 4. THE LEVEL/DEGREE OF CAPACITY OF THE STATE TO SUPPORT THE MEASURES	2.83	3.85	3.67	3.00	2.83	4.50	3.57	3.46
38. Capacity of the national research system to provide knowledge, information, technology, advice to policy, planning and management. (74 – 2)	2.92	3.92	3.83	3.07	3.00	4.00	3.71	3.49
39. Capacity of the extension systems to disseminate and utilize the outputs from the national or external research systems in support of aquaculture development (74 – 1)	2.83	3.69	3.28	2.94	2.60	4.00	3.29	3.23
40. Health management (74 – 0)	2.58	4.00	4.33	3.13	3.50	5.00	3.43	3.71
41. Environmental management (74 – 0)	3.08	3.92	4.22	3.06	3.67	5.00	3.71	3.81
42. Food safety (74 – 0)	3.17	4.38	4.72	3.56	4.00	5.00	3.43	4.04
43. Conflict management (73 – 2)	3.09	3.67	3.17	2.81	3.50	3.50	3.17	3.27
44. Preparedness to respond to disasters (74 – 1)	2.92	3.75	3.39	2.81	3.00	4.50	2.86	3.32
45. Preparedness to manage the risk impacts from climate change (74 – 0)	2.42	3.08	3.06	2.38	2.50	4.00	2.86	2.90
Average of 4 parts (equal weight)	2.96	3.85	3.72	2.61	3.38	4.25	3.00	3.40

Rating scales used in the questionnaire are: “0” is No or None. If the instrument or measure or mechanism is present, rate the effectiveness and extent of its enforcement or implementation: Use 1 for very low effectiveness and extent of implementation or enforcement, 2 for low, 3 for moderate, 4 for high and 5 for very high. Numbers in parentheses are the numbers of responses answering with a score (0, 1, 2, 3, 4 or 5). The rest were answered ‘not applicable’ (n.a.) or had no answer (blank). Low scores (0–2.00) are in colour highlights.

Table 4. Comparison of average scores of FAO Members' self-assessment on implementation performance between the 2019 and 2021 surveys

Group of measures/region	AF	AS	ER	LC	NE	NA	SP	Global
Number of Members	49 (25%)	25 (13%)	50 (25%)	34 (17%)	21 (11%)	2 (1%)	17 (9%)	198 (100%)
Number of submissions used	9 (16%)	11 (19%)	15 (26%)	12 (21%)	5 (9%)	2 (4%)	3 (5%)	57 (100%)
Sample size	18%	44%	30%	35%	24%	100%	18%	29%
Part 1. ESSENTIAL MANAGEMENT INSTRUMENTS AND MEASURES								
2019	3.59	3.71	3.91	3.02	3.7	4.53	2.89	3.59
2021	4	4.18	4.2	2.92	4.2	4.5	4.3	4.04
2021-2019	0.41	0.47	0.29	-0.1	0.5	-0.03	1.41	0.45
PART 2. SUPPORT MECHANISMS THAT FACILITATE THE IMPLEMENTATION OF THE REGULATORY MEASURES								
2019	2.96	3.4	3.44	2.54	3.54	3.77	3.21	3.17
2021	3.11	3.81	3.7	2.58	3.6	4	4	3.54
2021-2019	0.15	0.41	0.26	0.04	0.06	0.23	0.79	0.28
PART 3. ENHANCING MECHANISMS THAT IMPROVE THE EFFECTIVENESS OF THE ABOVE INSTRUMENTS AND MEASURES								
2019	2.32	3.32	3.29	2.18	3.22	3.6	2.55	2.9
2021	1.9	3.6	3.27	2.17	3.4	4	3.7	3.15
2021-2019	-0.42	0.28	-0.02	-0.01	0.18	0.4	1.15	0.25
Part 4. THE LEVEL/DEGREE OF CAPACITY OF THE STATE TO SUPPORT THE MEASURES								
2019	2.72	3.54	3.76	2.75	3.26	4.14	3.46	3.33
2021	2.8	3.91	3.6	2.92	3	4.5	4.7	3.63
2021-2019	0.08	0.37	-0.16	0.17	-0.26	0.36	1.24	0.3
Average of 4 parts (equal weight)								
2019	2.9	3.49	3.6	2.62	3.43	4.01	3.03	3.25
2021	2.95	3.9	3.69	2.65	3.55	4.25	4.2	3.59
2021-2019	0.05	0.41	0.09	0.03	0.12	0.24	1.17	0.34

Submissions from the same members who responded both in the 2019 and 2021 surveys (Total of 57 submissions) were used in the analysis.

Table 5. Comparison of global and group of main aquaculture producers' scores on implementation performance 2021

Group of measures/region	Top 19* (n=19)	Global (n=74)	+/-
Part 1. ESSENTIAL MANAGEMENT INSTRUMENTS AND MEASURES	4.1	3.82	0.28
PART 2. SUPPORT MECHANISMS THAT FACILITATE THE IMPLEMENTATION OF THE REGULATORY MEASURES	3.6	3.36	0.24
PART 3. ENHANCING MECHANISMS THAT IMPROVE THE EFFECTIVENESS OF THE ABOVE INSTRUMENTS AND MEASURES	3.63	2.95	0.68
Part 4. THE LEVEL/DEGREE OF CAPACITY OF THE STATE TO SUPPORT THE MEASURES	3.74	3.46	0.28
Average of 4 parts (equal weight)	3.8	3.4	0.37

Rating scales used in the questionnaire are: "0" is No or None. If the instrument or measure or mechanism is present, rate the effectiveness and extent of its enforcement or implementation: Use 1 for very low effectiveness and extent of implementation or enforcement, 2 for low, 3 for moderate, 4 for high and 5 for very high.

* List of the main aquaculture producers' submissions used in the analysis is in Table 1.

Table 6. Comparison of global and group of LIFDC'S average scores of implementation performance, 2021

Group of measures/region	LIFDC *(n=12)	Global (n=74)	+/-
PART 1. ESSENTIAL MANAGEMENT INSTRUMENTS AND MEASURES	3.75	3.82	-0.07
PART 2. SUPPORT MECHANISMS THAT FACILITATE THE IMPLEMENTATION OF THE REGULATORY MEASURES	2.92	3.36	-0.44
PART 3. ENHANCING MECHANISMS THAT IMPROVE THE EFFECTIVENESS OF THE ABOVE INSTRUMENTS AND MEASURES	2.2	2.95	-0.75
PART 4. THE LEVEL/DEGREE OF CAPACITY OF THE STATE TO SUPPORT THE MEASURES	3	3.46	-0.46
Average of 4 parts (equal weight)	3	3.4	-0.43

Table 7. Average scores of Members' self-assessment on their usage of FAO guidelines, tools, and assistance in implementing CCRF in aquaculture by measure, 2021

Question (measure)/region	AF	AS	ER	LC	NE	NA	SP	Global
Part 1. ESSENTIAL MANAGEMENT INSTRUMENTS AND MEASURES	3.55	3.00	2.06	2.44	3.17	1.00	0.83	2.29
1. Aquaculture policy (73 - 9)	3.91	3.31	2.27	2.73	3.60	1.00	0.75	2.51
2. Aquaculture development plan (72- 9)	4.22	3.17	2.07	2.31	3.40	1.00	1.20	2.48
Regulatory measures to support aquaculture development:	3.17	3.92	4.06	2.56	3.83	5.00	2.43	3.57
3. Access rights to land and water bodies (72 - 17)	1.88	2.91	1.67	1.43	2.50	1.00	1.00	1.77
4. Registration of aquaculture farms and hatcheries (72 - 14)	2.67	2.50	1.31	2.08	2.67	1.00	0.75	1.85
5. Zonation (area for aquaculture, or aquaculture systems or for species culture) (70 - 14)	3.13	2.45	1.62	1.93	2.80	1.00	1.25	2.02
6. Carrying capacity (limits set on density) (71 - 15)	2.89	2.10	1.55	2.07	2.60	2.00	0.80	2.00
7. Environmental assessment and monitoring (70 - 9)	2.67	2.75	1.86	2.07	2.83	1.00	0.80	2.00
8. Effluents (71- 13)	2.89	2.75	1.77	1.77	2.60	1.00	0.60	1.91
9. Feeds (environmental impact, quality, food safety issues) (70 - 12)	2.44	3.33	2.31	2.23	3.00	2.00	0.80	2.30
10. Seed (as environmental issue e.g. source - wild, hatchery) (70 - 14)	2.89	3.00	2.09	1.92	2.67	2.00	1.00	2.22
11. Water abstraction (70 - 14)	1.67	2.45	2.23	1.43	2.80	1.00	1.00	1.80
12. Use of alien species along the lines of FAO's or OIE's guidelines or CBD provisions (including potential transboundary issues) (71 - 12)	3.00	3.08	2.58	1.94	3.00	2.00	2.40	2.57
13. Movement (within country and across borders) of live animals along the lines of FAOs or OIE's (71- 10)	2.63	3.36	2.77	2.00	2.83	1.00	2.00	2.37
14. Impacts on biodiversity (70 - 9)	2.67	3.18	2.15	2.00	2.80	2.00	1.00	2.26
15. Escapes (70 - 11)	1.89	2.64	1.85	1.73	2.40	1.00	0.60	1.73
16. Stocking and restocking (70 - 12)	2.44	2.73	1.92	1.60	3.00	1.00	0.50	1.88
17. Food safety, (along the lines of CODEX Alimentarius) (71- 10)	2.89	3.55	2.77	2.47	2.17	2.00	1.50	2.48
18. Use of drugs, chemicals and other substances (70 - 8)	2.44	3.42	2.69	2.38	2.67	1.00	0.60	2.17
19. Fish health management along the lines of FAO or OIE (71 - 8)	3.11	3.50	2.23	2.06	2.83	2.00	1.50	2.46
Part 2. SUPPORT MECHANISMS THAT FACILITATE THE IMPLEMENTATION OF THE REGULATORY MEASURES	3.17	3.77	3.67	2.56	3.33	4.00	3.00	3.36
20. Government monitoring, data collection and analysis system on aquaculture (70 - 11)	2.63	3.00	1.57	2.60	2.50	1.00	0.40	1.96
21. Consultation with stakeholders in formulating the Aquaculture Policy and/or Aquaculture Development Plan (70 - 7)	4.22	2.92	1.69	2.56	2.50	1.00	0.67	2.22
22. Participation of farmers associations in sector development and management (70 - 10)	3.44	2.73	1.92	2.00	2.20	1.00	0.33	1.95
23. Aquaculture is integrated in coastal development and management plans (71 - 14)	3.13	2.50	1.70	2.00	1.67	1.00	0.33	1.76
24. Aquaculture is integrated in watershed management or land use development plans (71- 14)	2.00	2.55	1.45	1.60	2.40	1.00	0.17	1.60
25. Integration of aquaculture in community development planning (70 - 12)	3.22	2.70	1.42	1.93	2.17	1.00	0.50	1.85
26. Ecosystems functions are considered in aquaculture planning and development (e.g. wildlife sanctuary, water quality improvement, recreational, as well as greenhouse gas mitigation, carbon sequestration) (70 - 13)	2.43	2.73	1.69	2.15	2.17	1.00	0.67	1.83

27. There is an incentive system for farmers to restore or rehabilitate resources degraded by their aquaculture activities (e.g. mangrove, other forests, salt marshes, abandoned lands, polluted water bodies, degraded soil) (71 – 24)	1.88	2.40	1.33	1.42	2.50	1.00	0.33	1.55
28. Practices are adopted that lead to improvement in the sustainability of aquaculture farms (i.e. better management practices or BMPs, good aquaculture practices or GAPs, codes of practice, etc.) (70 – 10)	3.25	3.25	2.07	2.69	2.50	1.00	0.50	2.18
29. Application of the polluter-pays principle (71 – 19)	1.57	1.80	1.83	1.75	2.00	1.00	0.40	1.48
30. Investment in aquaculture research (71 – 13)	1.88	2.50	1.50	1.93	2.60	1.00	0.83	1.75
31. Investment in aquaculture extension and training (70 – 12)	2.78	3.18	1.58	2.36	2.80	1.00	0.83	2.08
32. Investment in infrastructure and facilities that support aquaculture development (70 – 12)	2.78	2.82	1.67	2.07	2.40	1.00	0.67	1.91
PART 3. SPECIFIC ENHANCING MECHANISMS THAT IMPROVE THE EFFECTIVENESS OF THE ABOVE INSTRUMENTS AND MEASURES	2.00	3.23	3.22	2.00	3.17	4.00	2.14	2.82
33. Mechanisms are in place to ensure that livelihoods of the local communities are benefited and not adversely impacted when developing aquaculture (69 – 10)	2.00	2.50	2.00	1.50	2.17	1.00	0.80	1.71
34. There are voluntary certification system/s that promote the practice of responsible aquaculture (70 – 15)	2.00	2.55	1.91	1.43	3.33	1.00	0.50	1.82
35. Farms are covered by government assistance scheme in case of disasters (70 – 16)	1.75	2.64	1.50	1.14	2.25	1.00	0.17	1.49
36. Farmers have access to institutional credit (70 – 18)	2.14	2.30	1.88	1.67	2.00	1.00	0.00	1.57
37. Aquaculture farmers have access to commercial insurance (70 – 21)	1.57	2.00	1.38	1.43	1.80	1.00	0.20	1.34
PART 4. THE LEVEL/DEGREE OF CAPACITY OF THE STATE TO SUPPORT THE MEASURES	2.67	2.75	1.92	2.13	2.67	1.00	1.00	2.02
38. Capacity of the national research system to provide knowledge, information, technology, advice to policy, planning and management. (71 – 12)	2.67	2.67	1.75	2.27	3.20	1.00	1.20	2.11
39. Capacity of the extension systems to disseminate and utilize the outputs from the national or external research systems in support of aquaculture development (70 – 15)	2.63	3.00	1.55	2.33	2.60	1.00	1.00	2.01
40. Health management (69 – 12)	2.44	3.50	2.50	2.07	3.33	1.00	1.25	2.30
41. Environmental management (69 – 13)	2.67	3.56	2.09	2.00	3.17	1.00	0.80	2.18
42. Food safety (70 – 13)	3.22	3.78	2.42	2.07	3.50	1.00	0.80	2.40
43. Conflict management (70 – 15)	1.89	2.89	1.27	1.53	2.17	1.00	0.75	1.64
44. Preparedness to respond to disasters (70 – 15)	2.00	2.90	0.91	1.86	2.33	1.00	0.80	1.69
45. Preparedness to manage the risk impacts from climate change (70 – 13)	3.11	3.10	1.25	2.29	2.33	1.00	0.60	1.95
Average of 4 parts (equal weight)	2.85	3.19	2.72	2.28	3.09	2.50	1.74	2.62

Rating scales used in the questionnaire are: 0=not used at all; 1= very minimally; 2=minimally moderately; 3=moderately; 4=highly; 5= very highly or extensively used/supported by FAO Numbers in parentheses are the numbers of responses answering with a score (0, 1, 2, 3, 4 or 5). The rest were answered 'not applicable' (n.a.) or had no answer (blank). Low scores (0–2.00) in both implementation performance (refer to Table 3) and usage of FAO assistance are in colour highlight.

Table 8. RFB/AN responding to the Aquaculture Questionnaire on the Code of Conduct

RFB/AN Acronym	Name	Responded
ACAP	Agreement on the Conservation of Albatrosses and Petrels	
APFIC	Asia-Pacific Fishery Commission	
AU-IBAR	African Union – Interafrican Bureau for Animal Resources	
BCC	Benguela Current Commission	
BOBP-IGO	Bay of Bengal Programme - Inter-Governmental Organization	✓
CACFISH	Central Asian and Caucasus Regional Fisheries and Aquaculture Commission	✓
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources	
CCBSP	Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea	
CCSBT	Commission for the Conservation of Southern Bluefin Tuna	
CECAF	Fishery Committee for the Eastern Central Atlantic	
CIFAA	Committee for Inland Fisheries and Aquaculture of Africa	✓
COFREMAR	Joint Technical Commission for the Argentina/Uruguay Maritime Front	
COMHAFAT	Ministerial Conference on Fisheries Cooperation among African Countries Bordering the Atlantic Ocean	
COPESCAALC	Commission for Inland Fisheries of Latin America and the Caribbean	
COREP	Regional Fisheries Committee for the Gulf of Guinea	
CPPS	Permanent Commission for the South Pacific	
CRFM	Caribbean Regional Fisheries Mechanism	
EIFAAC	European Inland Fisheries and Aquaculture Advisory Commission	✓
FCWC	Fisheries Committee for the West Central Gulf of Guinea	✓
FEAP	Federation of European Aquaculture Producers	
FFA	Forum Fisheries Agency	
GCLME	Guinea Current Large Marine Ecosystem	
GFCM	General Fisheries Commission for the Mediterranean	✓
GLFC	Great Lakes Fisheries Commission	
IATTC	Inter-American Tropical Tuna Commission	✓
ICCAT	International Commission for the Conservation of Atlantic Tunas	
ICES	International Council for the Exploration of the Sea	
IOTC	Indian Ocean Tuna Commission	
IPHC	International Pacific Halibut Commission	
IUCN	International Union for Conservation of Nature	
IWC	International Whaling Commission	
JOINTFISH	Joint Norwegian-Russian Fisheries Commission	
LCBC	Lake Chad Basin Commission	
LTA	Lake Tanganyika Authority	
LVFO	Lake Victoria Fisheries Organization	✓
MRC	Mekong River Commission	
NACA	Network of Aquaculture Centres in Asia-Pacific	
NAFO	Northwest Atlantic Fisheries Organization	
NAMMCO	North Atlantic Marine Mammal Commission	
NASCO	North Atlantic Salmon Conservation Organization	
NEAFC	Northeast Atlantic Fisheries Commission	
NPAFC	North Pacific Anadromous Fish Commission	
NPFC	North Pacific Fisheries Commission	
OECS	Organisation of Eastern Caribbean States	
OLDEPESCA	Latin American Organization for Fisheries Development	
OSPESCA	Organización del Sector Pesquero y Acuícola del Istmo Centroamericano	
PERSGA	Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden	
PICES	North Pacific Marine Science Organization	
PSC	Pacific Salmon Commission	

RECOFI	Regional Commission for Fisheries	
SEAFDEC	Southeast Asian Fisheries Development Center	✓
SEAFO	Southeast Atlantic Fisheries Organization	
SIOFA	Southern Indian Ocean Fisheries Agreement	
SPC	Secretariat of the Pacific Community	
SPRFMO	South Pacific Regional Fisheries Management Organization	
SRFC	Sub-Regional Commission on Fisheries	
SWIOFC	Southwest Indian Ocean Fisheries Commission	
TEST	Test RFB	
WCPFC	Western Central Pacific Fisheries Commission	
WECAFC	Western Central Atlantic Fishery Commission	✓
WORLDFISH	WorldFish	
WWF	World Wide Fund for Nature	
Sum of counts		10

Table 9. Comparative response rates by RFB/AN (figures in %)

	Number of responding RFB/AN* 2021	Percentage response 2021
Total count and percentages (62)	10	16.1 %

Table 10. RFB/AN mandates

Data source	Number	%
Fisheries management	6	60.00
Aquaculture development	5	50.00
Advisory	6	60.00
Scientific / Research	6	60.00
Environmental / Biodiversity Conservation	4	40.00
Other	1	10.00

Calculations based on the number on participants that replied to this question.

Table 11. List of RFB/AN mandates ordered by relevance

Data source	%
Fisheries management	21.43
Advisory	21.43
Scientific / Research	21.43
Aquaculture development	17.86
Environmental / Biodiversity Conservation	14.29
Other	3.57

Table 12. Average of RFB/ANs' assessment on implementation performance of countries in their area of mandate and their own performance in supporting countries, 2021

Question (measure)/region	Implementation Performance*	RFB/AN assistance**
Part 1. ESSENTIAL MANAGEMENT INSTRUMENTS AND MEASURES	3.50	3.50
1. Aquaculture policy	3.80	4.10
2. Aquaculture development plan	3.33	3.33
Regulatory measures to support aquaculture development:	3.11	2.89
3. Access rights to land and water bodies	3.38	2.50
4. Registration of aquaculture farms and hatcheries	3.22	3.00
5. Zonation (area for aquaculture, or aquaculture systems or for species culture)	3.00	3.33
6. Carrying capacity (limits set on density)	3.11	3.00

7. Environmental assessment and monitoring	2.56	3.00
8. Effluents	2.88	2.43
9. Feeds (environmental impact, quality, food safety issues)	2.75	3.00
10. Seed (as environmental issue e.g. source – wild, hatchery)	3.50	3.13
11. Water abstraction	2.75	2.40
12. Use of alien species along the lines of FAO's or OIE's guidelines or CBD provisions (including potential transboundary issues)	3.38	2.71
13. Movement (within country and across borders) of live animals along the lines of FAOs or OIE's	3.33	3.00
14. Impacts on biodiversity	2.75	3.00
15. Escapes	2.38	2.67
16. Stocking and restocking	3.11	3.71
17. Food safety, (along the lines of CODEX Alimentarius)	3.25	2.88
18. Use of drugs, chemicals and other substances	3.11	2.57
19. Fish health management along the lines of FAO or OIE	3.33	3.44
Part 2. SUPPORT MECHANISMS THAT FACILITATE THE IMPLEMENTATION OF THE REGULATORY MEASURES	3.00	3.11
20. Government monitoring, data collection and analysis system on aquaculture	3.33	3.56
21. Consultation with stakeholders in formulating the Aquaculture Policy and/or Aquaculture Development Plan	3.67	4.00
22. Participation of farmers associations in sector development and management	3.89	3.22
23. Aquaculture is integrated in coastal development and management plans	3.50	3.25
24. Aquaculture is integrated in watershed management or land use development plans	3.25	2.75
25. Integration of aquaculture in community development planning	3.88	3.25
26. Ecosystems functions are considered in aquaculture planning and development (e.g. wildlife sanctuary, water quality improvement, recreational, as well as greenhouse gas mitigation, carbon sequestration)	2.78	2.67
27. There is an incentive system for farmers to restore or rehabilitate resources degraded by their aquaculture activities (e.g. mangrove, other forests, salt marshes, abandoned lands, polluted water bodies, degraded soil)	1.67	1.86
28. Practices are adopted that lead to improvement in the sustainability of aquaculture farms (i.e. better management practices or BMPs, good aquaculture practices or GAPs, codes of practice, etc.)	3.44	3.44
29. Application of the polluter-pays principle	1.67	2.00
30. Trend of Investment in aquaculture research	2.89	2.44
31. Trend of Investment in aquaculture extension and training	3.33	3.56
32. Trend of Investment in infrastructure and facilities that support aquaculture development	3.38	3.17
PART 3. SPECIFIC ENHANCING MECHANISMS THAT IMPROVE THE EFFECTIVENESS OF THE ABOVE INSTRUMENTS AND MEASURES	2.62	2.00
33. Mechanisms are in place to ensure that livelihoods of the local communities are benefited and not adversely impacted when developing aquaculture	3.71	3.33
34. There are voluntary certification system/s that promote the practice of responsible aquaculture	2.88	2.25
35. Farms are covered by government assistance scheme in case of disasters	2.50	1.67
36. Farmers have access to institutional credit	2.38	0.40
37. Aquaculture farmers have access to commercial insurance	1.86	0.40
Average of 3 parts (equal weight)	3.04	2.87

* Rating scales used in the questionnaire: "0" is No or None. If the instrument or measure or mechanism is present, rate the effectiveness and extent of its enforcement or implementation: Use 1 for very low effectiveness and extent of implementation or enforcement, 2 for low, 3 for moderate, 4 for high and 5 for very high.

** Rating scales used in the questionnaire: A low score (0, 1 or 2) indicates that the organization does not provide or provides very limited assistance on the specific topic. A score of 3 means the RFB/AN is providing support to some countries and with minor degree of effectiveness. A score of 4 means that the RFB/AN is making relevant efforts to support the measure in the countries with wide coverage. A score of 5 means the RFB/AN is providing full and effective support to countries in the area to implement the measure. Numbers in parentheses are the numbers of responses answering with a score (0, 1, 2, 3, 4 or 5). The rest were answered 'not applicable' (n.a.) or had no answer (blank). Low score (0–2.00) is in colour highlight.

Figure 1. Average scores of FAO Members' self-assessment on implementation performance by region, 2021

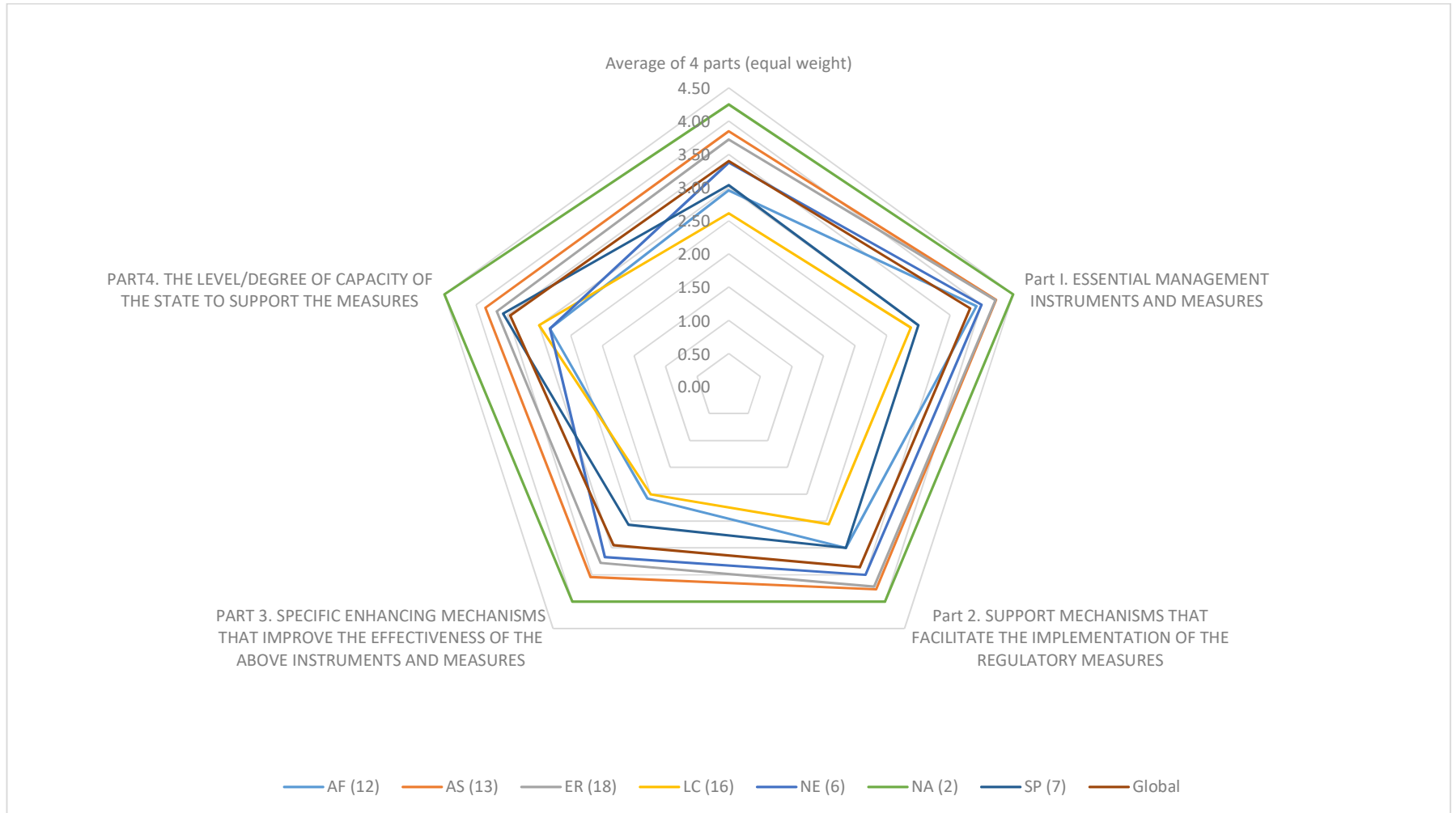


Figure 2. Average scores of each FAO Members' self-assessment on implementation performance, from high to low by group of measures 2021 (the first number refers to the Question/Measure and the second one refers to the score)

Figure2. (Continued)

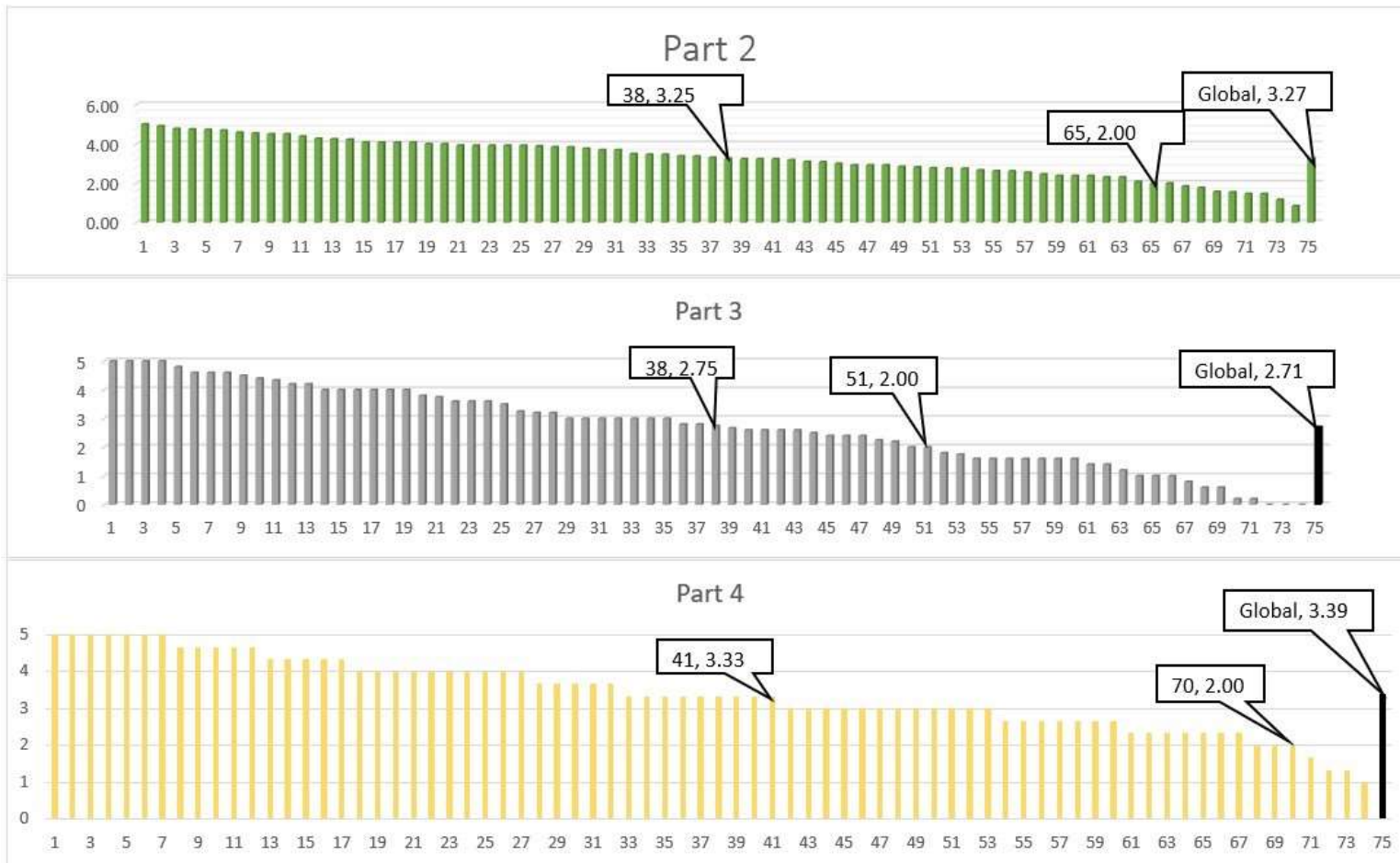


Figure 3. Overall average scores of FAO Members 'self-assessment on Implementation performance and usage of FAO guidelines, tools and assistance, 2021

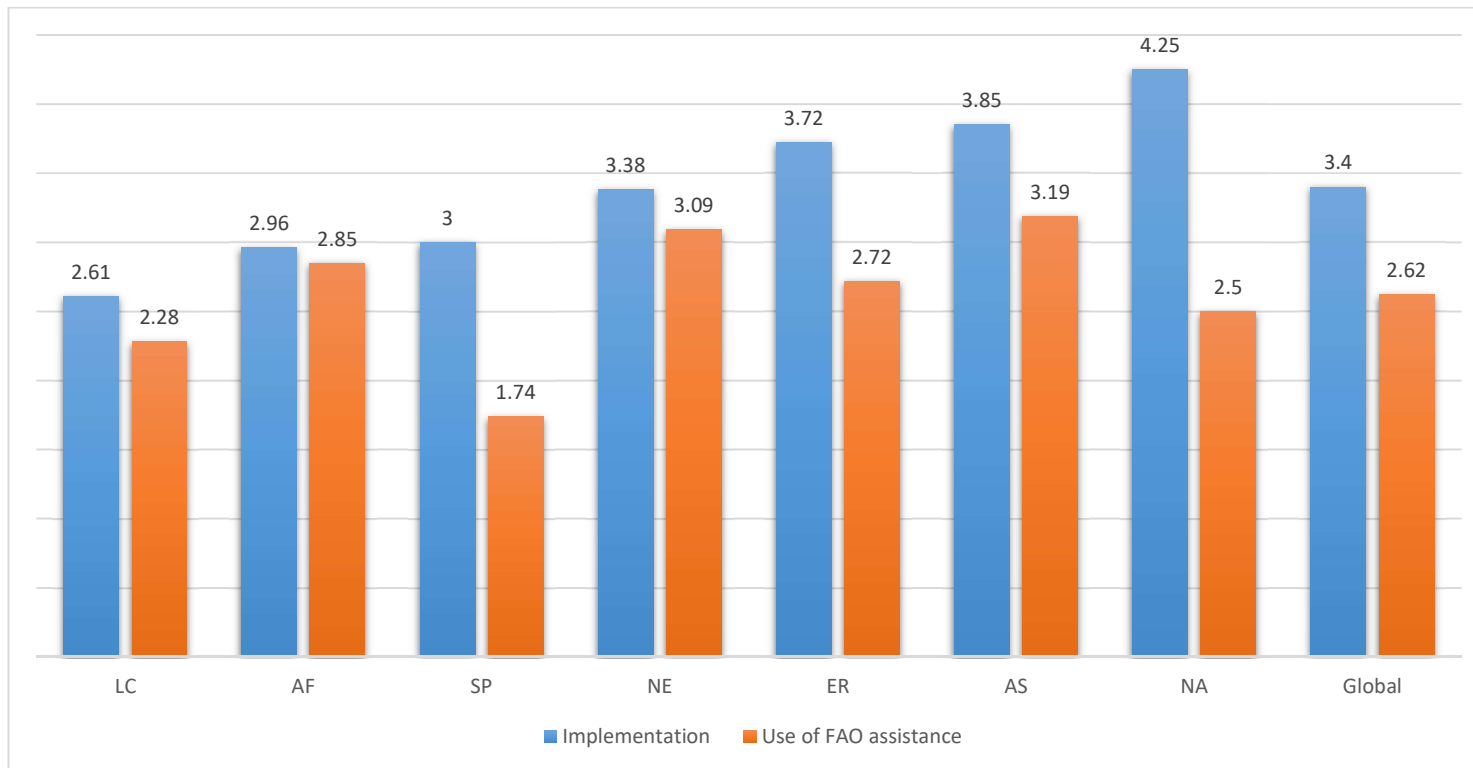


Figure 4. Average scores of usage of FAO guidelines, tools and assistance by group of measures, 2021

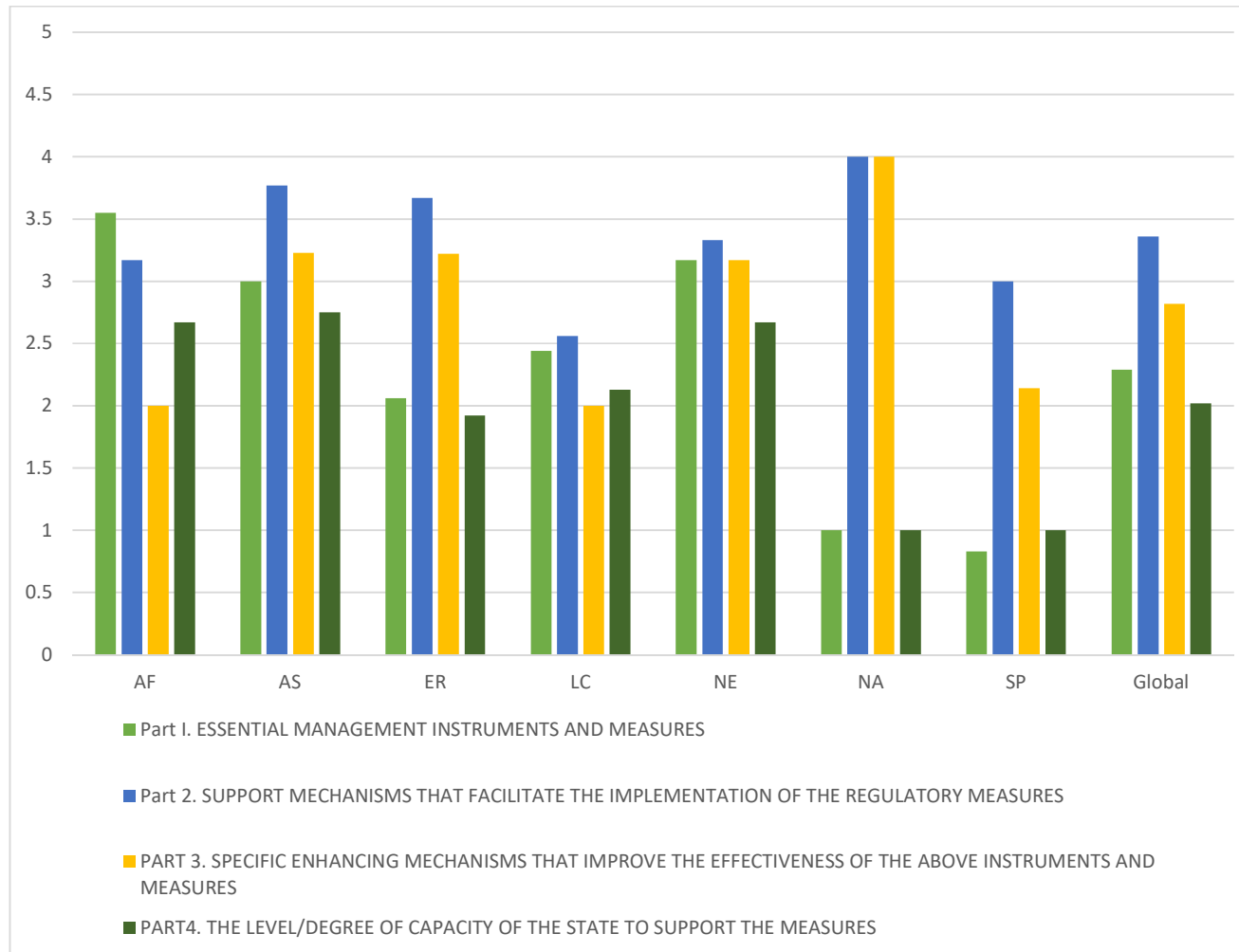
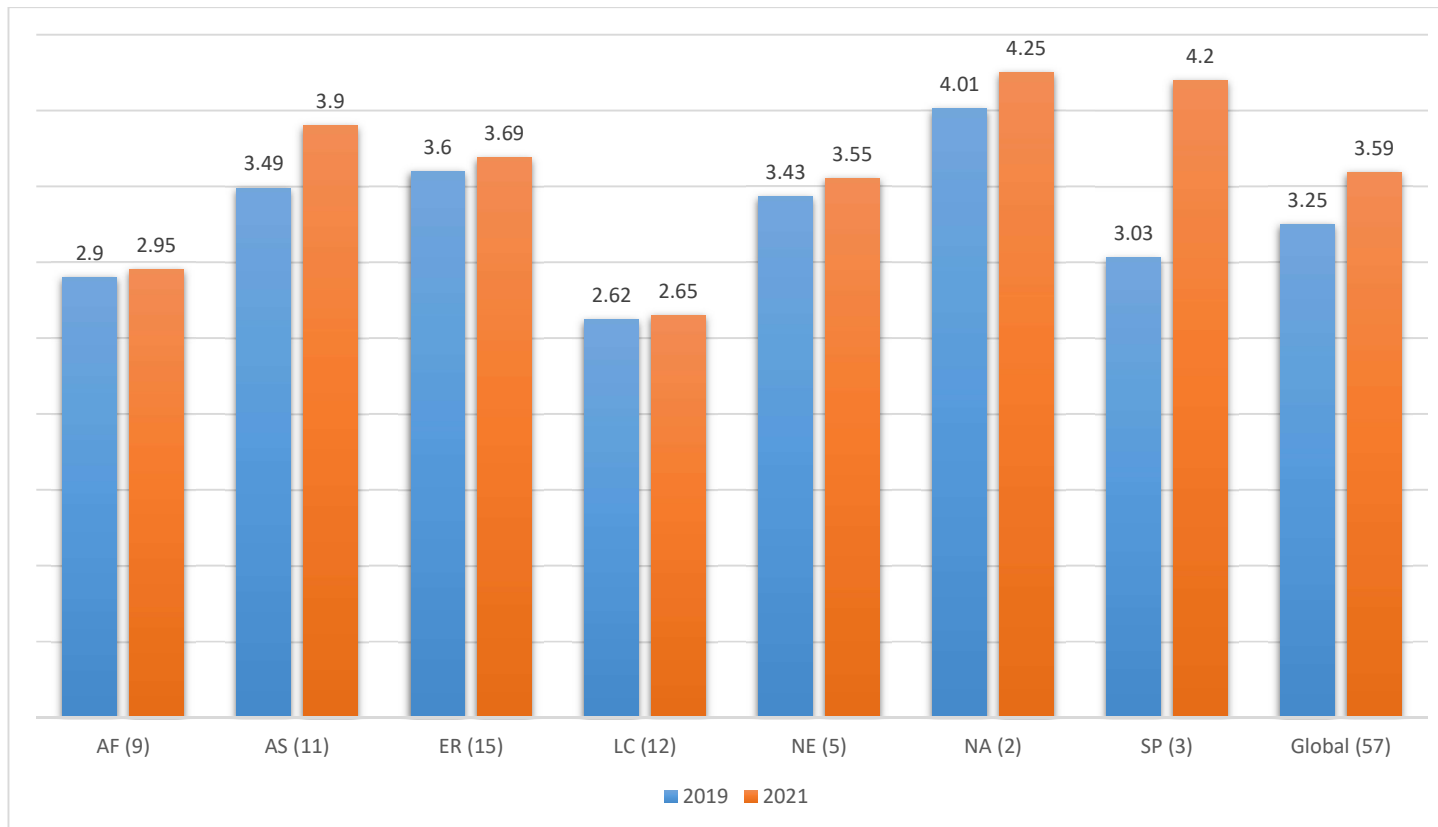
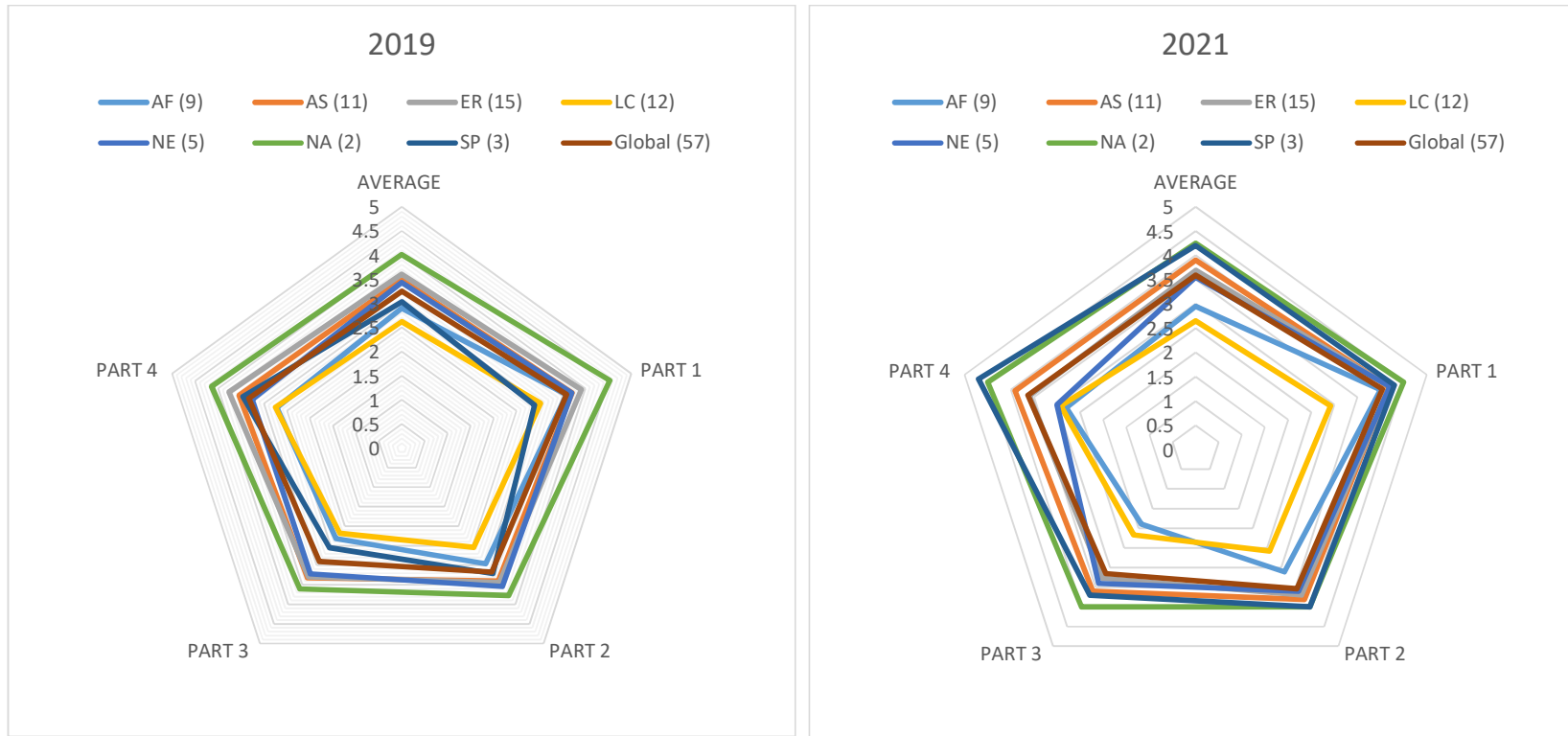


Figure 5. Comparison of overall average scores of FAO Members 'self-assessment on implementation performance, the 2019 vs 2021 surveys



Submissions from the same members who responded both in the 2019 and 2021 surveys (total of 57 submissions) were used in the analysis

Figure 6. Average scores of FAO Members 'self-assessment on implementation performance in some regions and the global levels, the 2019 and 2021 surveys



Submissions from the same members who responded both in the 2019 and 2021 surveys (total of 57 submissions) were used in the analysis

Figure 7. Average scores of FAO Members 'self-assessment and RFB/Ans' assessment on implementation performance by group of measures, 2021

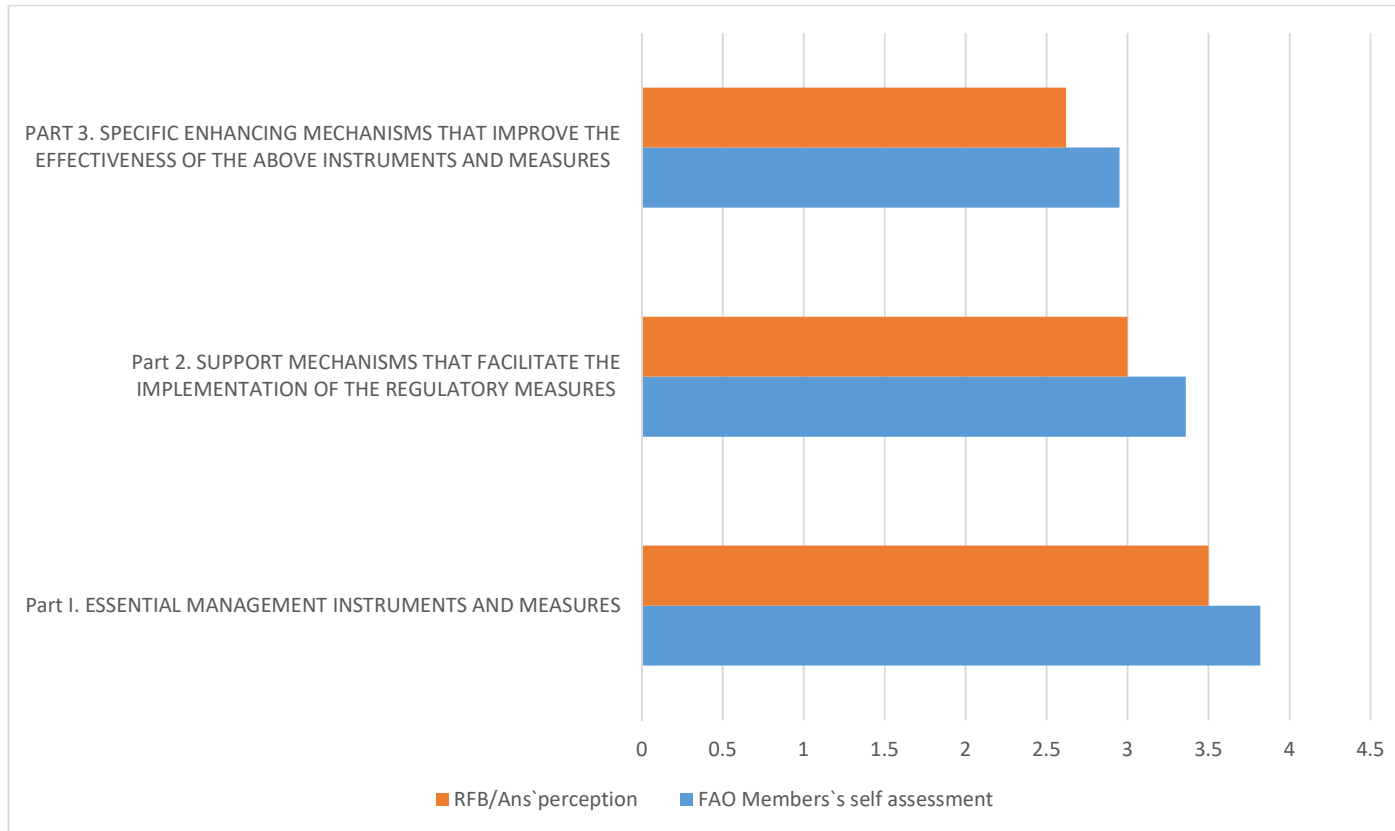


Figure 8. Average of RFB/ANs' assessment on implementation performance of countries in their area of mandate and their own performance in supporting countries, 2021

