

Chapter 9

Evaluation and Comparative Analysis on EEC

9.1 Evaluation Results of EEC

According to the evaluation indicator system and the mathematic model of EEC, the evaluation and analysis are made on EEC in 2012. Table 9.1 lists the rankings and scores of EEC in 2012 and Fig. 9.1 displays the EEC scores of the six continents as well as the top three countries of each continent in 2012.

According to Table 9.1, the countries with EEC ranking 1st–10th include Germany, Switzerland, Slovak Republic, Venezuela, RB, Austria, New Zealand, Zambia, Australia, Ecuador and United Kingdom; the 11th–20th rankings are Nicaragua, Botswana, Luxembourg, Brazil, Zimbabwe, Belgium, Poland, France, Japan and Saudi Arabia; the 21st–30th rankings are Lithuania, Netherlands, United States, Italy, Norway, Chile, Czech Republic, Sweden, Israel and Estonia; and the bottom ten countries are China, Iraq, Vietnam, Niger, Pakistan, Cameroon, Sudan, Mali, Bangladesh and India.

In 2012, the highest score of EEC is 73.0 points, the lowest score is 23.8, the average score is 49.1 and the standard deviation is 9.3. The highest score and the lowest score differ greatly with a margin of 49.2 points, the former being 3.1 times the latter. 63 countries score higher than the average point. It indicates that the overall level of EEC is rather high and the differences are rather large among the countries.

The scores of EEC show elliptical distribution. Germany and Switzerland score above 70 points; 16 countries score 60–70; 38 countries score 50–60; 54 countries score 40–50; 21 countries score 30–40; 2 countries 20–30; none scores below 20 points.

The countries with higher EEC are mainly developed countries. Among the 10 countries ranking ahead, 7 are developed countries; among the 20 countries ranking ahead, 12 are developed countries. And, the countries with lower EEC are developing countries.

Table 9.1 Scores and rankings of EEC as well as the tertiary and individual indicators in 2012

Countries	EEC	Bio-diversity				Ecological safeguard			Air quality		Particulate matter (PM2.5)	Index of Indoor air pollution	Nitrogen oxides emission	Sulfur dioxide emission	
		Threatened fish species	Threatened mammal species	Threatened plant species	GEF benefits index for biodiversity	Terrestrial protected areas	Marine protected areas	Inhalable particles (PM10)							
Germany	73.0	57.3	89.2	96.7	99.2	0.6	81.2	99.7	53.4	78.7	88.3	82.8	100.0	56.9	39.3
Switzerland	1	80	62	30	67	95	3	2	2	34	23	78	1	125	103
	70.3	59.0	95.8	98.9	99.9	0.2	67.4	67.4	NA	80.9	85.4	87.2	100.0	68.5	40.9
	2	33	24	6	30	109	7	15	NA	20	39	53	1	39	19
Slovak Republic	69.1	59.2	97.6	98.4	99.7	0.1	62.8	62.8	NA	81.2	90.5	83.8	100.0	68.3	40.7
	3	30	14	11	47	122	9	18	NA	18	12	73	1	48	57
Venezuela, RB	68.7	62.4	82.5	82.6	96.0	25.3	68.1	100.0	20.2	74.0	92.7	87.1	NA	65.8	39.9
	4	10	88	110	100	15	6	1	17	41	5	54	NA	95	91
Austria	67.9	58.7	94.8	98.4	99.5	0.3	62.0	62.0	NA	79.3	80.3	84.3	100.0	68.1	40.9
	5	45	28	11	60	105	10	19	NA	28	58	70	1	56	22
New Zealand	67.6	64.7	89.2	95.1	98.9	20.2	48.2	70.9	14.2	84.2	92.0	99.0	100.0	66.2	40.7
	6	6	62	49	78	18	17	12	21	2	7	8	1	91	59
Zambia	66.2	58.5	90.6	95.1	99.5	3.8	97.6	97.6	NA	48.4	80.3	80.9	2.3	63.6	39.6
	7	48	53	49	60	52	1	4	NA	102	58	84	116	107	95
Australia	65.7	79.1	51.4	70.1	98.4	87.7	32.1	28.5	37.5	80.8	90.5	97.3	100.0	55.5	32.8
	8	1	126	125	84	3	40	67	9	21	12	10	1	126	124
Ecuador	63.6	41.8	75.0	75.5	0.0	29.2	61.8	67.4	53.4	81.3	86.1	88.9	100.0	68.0	40.7
	9	133	106	120	133	13	11	14	1	17	36	39	1	58	61
United Kingdom	63.4	56.7	79.7	97.3	99.4	3.5	45.9	71.5	7.4	81.5	90.5	91.1	100.0	62.5	38.9
	10	90	96	22	65	55	20	10	31	15	12	29	1	116	106
Nicaragua	62.8	57.4	85.8	96.7	97.7	3.3	79.4	99.5	49.3	54.4	84.7	92.6	8.4	68.3	40.9
	11	79	76	30	94	59	4	3	3	81	42	25	97	47	23
Botswana	62.2	59.6	99.1	96.2	100.0	1.4	83.7	83.7	NA	48.1	53.3	87.6	11.9	68.4	40.7
	12	21	6	37	1	76	2	6	NA	104	114	49	88	45	60

Luxembourg	61.6	59.9	99.5	100.0	100.0	0.0	32.4	54.1	NA	84.7	91.2	100.0	100.0	68.9	41.0
	13	18	3	1	1	128	38	28	NA	1	9	1	1	8	5
Brazil	61.4	78.7	60.4	56.0	77.3	100.0	51.4	71.2	21.8	55.9	86.9	93.8	38.3	18.5	36.5
	14	2	122	130	131	1	14	11	15	78	30	19	56	130	116
Zimbabwe	60.7	59.3	98.6	95.1	99.2	1.9	75.8	75.8	NA	50.5	75.2	88.5	4.9	67.7	40.8
	15	28	9	49	70	70	5	8	NA	94	76	43	106	70	55
Belgium	60.5	58.6	94.8	98.4	100.0	0.0	37.2	37.2	NA	79.4	84.7	80.9	100.0	67.6	40.7
	16	46	28	11	1	128	27	52	NA	27	42	85	1	74	64
Poland	60.1	58.9	96.7	97.3	99.5	0.5	38.5	60.6	5.3	77.1	75.9	84.9	100.0	62.5	37.3
	17	36	20	22	56	99	25	21	39	37	75	66	1	114	113
France	60.0	56.7	79.2	95.1	98.4	5.3	38.0	44.6	28.2	78.9	91.2	79.9	100.0	58.5	39.3
	18	89	97	49	84	44	26	40	12	32	9	87	1	122	99
Japan	59.8	65.2	69.8	84.8	99.6	36.0	29.6	44.6	7.2	78.3	82.5	83.2	100.0	62.6	38.5
	19	5	113	106	51	9	46	40	32	35	53	76	1	113	107
Saudi Arabia	59.4	58.1	89.2	95.1	99.8	3.2	52.6	84.8	4.4	65.4	29.9	69.0	100.0	67.6	36.3
	20	65	62	49	40	61	12	5	44	54	127	108	1	73	117
Lithuania	59.1	59.1	97.2	98.4	100.0	0.0	29.1	39.1	14.1	81.5	88.3	87.2	100.0	68.5	40.9
	21	31	17	11	1	128	47	50	23	16	23	52	1	40	40
Netherlands	58.8	58.4	93.9	97.8	100.0	0.2	31.7	33.4	29.2	79.4	78.1	88.8	100.0	65.9	40.8
	22	54	36	17	1	109	41	58	11	26	69	41	1	94	49
United States	58.7	73.8	13.7	79.9	87.2	94.2	35.2	33.4	37.8	64.9	86.9	86.7	100.0	1.1	0.1
	23	3	132	115	122	2	32	58	8	55	30	57	1	131	130
Italy	58.3	55.6	77.8	96.2	96.4	3.8	33.6	40.8	23.0	78.8	84.7	82.5	100.0	62.9	39.7
	24	103	103	37	98	52	34	44	13	33	42	81	1	112	94
Norway	58.1	57.9	91.0	96.2	99.9	1.3	24.9	39.4	3.1	83.0	88.3	95.2	100.0	68.0	40.9
	25	68	47	37	30	78	57	49	55	8	23	13	1	60	21
Chile	57.7	61.7	90.6	89.1	98.0	15.3	28.8	44.8	4.8	76.4	66.4	87.3	100.0	67.3	37.4
	26	14	53	99	89	21	50	38	42	39	94	51	1	82	112

(continued)

Table 9.1 (continued)

Indicators	Ecological safeguard										Air quality	Inhalable particles (PM10)	Particulate matter (PM2.5)	Index of Indoor air pollution	Nitrogen oxides emission	Sulfur dioxide emission
	EEC	Bio-diversity	Threatened fish species	Threatened mammal species	Threatened plant species	GEF benefits index for biodiversity	Terrestrial protected areas	Marine protected areas	Ecological safeguard	Terrestrial protected areas						
Czech Republic	57.6	59.5	99.1	98.9	99.5	0.1	24.5	40.8	NA	81.0	88.3	86.3	100.0	67.1	40.3	
	27	22	6	6	56	122	59	44	NA	19	23	61	1	83	83	
Sweden	57.3	58.8	94.3	99.5	99.8	0.3	20.4	29.3	6.9	83.8	92.7	94.7	100.0	67.8	40.9	
	28	37	35	2	43	105	67	64	33	5	5	15	1	67	42	
Israel	56.9	55.3	83.0	91.8	100.0	0.8	29.0	48.1	0.4	78.9	84.7	78.9	100.0	68.6	39.5	
	29	107	85	84	1	88	49	36	79	29	42	90	1	34	96	
Estonia	56.6	59.5	97.6	99.5	100.0	0.1	47.1	55.2	35.1	61.5	93.4	92.9	26.1	68.8	40.6	
	30	23	14	2	1	122	18	26	10	60	4	21	73	18	67	
Belarus	56.6	59.4	99.1	97.8	100.0	0.0	19.3	19.3	NA	82.4	95.6	86.0	100.0	66.5	40.7	
	31	25	6	17	1	128	70	79	NA	13	2	64	1	90	66	
Finland	56.5	59.4	97.2	99.5	99.9	0.2	17.1	24.2	6.5	83.9	89.1	99.3	100.0	67.5	40.8	
	32	24	17	2	22	109	79	74	34	4	16	7	1	77	51	
Greece	55.9	52.4	64.6	94.6	97.0	2.8	27.6	43.8	3.3	79.9	80.3	88.8	100.0	67.7	39.3	
	33	123	121	59	96	66	53	42	52	25	58	42	1	69	97	
Cyprus	55.5	57.7	91.0	97.3	99.1	0.5	17.2	28.3	0.7	82.5	80.3	100.0	100.0	69.0	40.9	
	34	73	47	22	74	99	77	68	77	12	58	1	1	7	35	
Canada	55.0	64.0	83.5	93.5	99.9	21.5	12.6	20.1	1.5	80.0	89.1	89.8	100.0	60.4	34.6	
	35	7	82	72	22	16	89	78	70	24	16	36	1	120	121	
Colombia	54.7	62.3	74.1	70.7	87.2	39.9	42.0	56.5	20.2	58.5	86.1	86.0	27.6	64.4	40.6	
	36	11	108	122	121	7	23	24	16	64	36	63	67	100	70	
Malaysia	53.9	44.0	69.8	62.0	60.7	13.9	30.4	48.9	2.5	78.9	86.9	78.4	100.0	65.8	40.0	
	37	130	113	128	132	23	44	34	57	31	30	92	1	96	89	
Portugal	53.9	55.2	75.0	94.0	96.0	5.5	15.0	22.3	4.0	82.1	86.9	92.4	100.0	67.7	40.4	
	38	108	107	64	100	43	84	76	49	14	30	26	1	68	80	

Benin	53.8	56.2	87.3	94.0	99.2	0.2	64.4	64.4	NA	44.0	65.0	71.5	1.0	68.4	41.0
	39	96	71	64	67	109	8	17	NA	115	96	106	120	44	7
Jordan	53.8	57.5	93.9	92.9	99.9	0.4	18.8	4.9	39.7	77.2	78.1	75.5	100.0	68.9	40.7
	40	75	36	78	22	103	74	113	7	36	69	97	1	15	62
Bolivia	53.6	62.0	100.0	89.1	95.8	12.5	50.0	50.0	NA	50.1	58.4	85.2	17.9	65.8	40.9
	41	13	1	99	103	24	15	31	NA	96	106	65	81	97	24
Denmark	53.4	58.4	92.9	98.9	99.9	0.2	9.5	13.0	4.1	82.6	89.1	92.7	100.0	67.7	40.9
	42	51	44	6	22	109	100	100	47	11	16	24	1	71	20
Mauritius	53.4	58.4	93.9	96.7	94.9	3.3	7.3	12.0	0.3	84.1	88.3	100.0	100.0	69.0	40.9
	43	55	36	30	105	59	108	102	83	3	23	1	1	3	29
Dominican Republic	52.9	57.4	90.1	96.7	98.4	0.9	36.0	60.1	0.0	62.1	85.4	93.3	33.2	68.5	40.6
	44	78	58	30	84	84	30	22	90	57	39	20	60	37	68
Singapore	52.8	55.8	88.2	94.0	96.7	0.1	9.3	14.4	1.7	83.0	83.2	100.0	100.0	68.8	40.3
	45	102	69	64	97	122	102	95	66	9	50	1	1	20	82
Latvia	52.7	59.3	97.2	99.5	100.0	0.0	32.7	48.6	8.8	62.7	91.2	90.9	32.8	68.7	41.0
	46	29	17	2	1	128	37	35	29	56	9	31	62	26	4
Costa Rica	52.5	56.5	76.4	95.1	93.2	8.8	38.8	55.2	14.2	59.7	80.3	94.7	27.6	68.7	40.9
	47	93	105	48	108	30	24	25	20	62	57	14	66	28	16
Hungary	52.3	58.9	95.8	98.9	99.5	0.2	8.2	13.6	NA	80.5	89.1	82.4	100.0	67.5	40.6
	48	35	24	6	56	109	104	97	NA	23	16	82	1	75	73
Guatemala	52.3	58.3	88.2	91.3	95.8	8.0	52.0	75.8	16.3	48.0	62.0	86.3	6.9	67.8	40.8
	49	61	68	89	102	34	13	7	18	105	98	59	102	63	48
Qatar	52.2	58.7	94.8	98.4	100.0	0.1	4.0	6.5	0.3	83.5	85.4	100.0	100.0	69.0	40.7
	50	42	28	11	1	122	114	109	83	6	39	1	1	4	58
Spain	51.8	51.9	66.5	91.3	88.0	6.8	15.7	23.1	4.5	78.9	82.5	86.9	100.0	63.3	37.0
	51	126	119	90	118	40	82	75	43	30	53	56	1	109	115
Ireland	51.6	57.8	90.6	97.3	99.9	0.6	2.8	4.6	0.1	83.4	90.5	95.4	100.0	67.4	40.8
	52	70	53	22	22	95	119	115	88	7	12	12	1	79	54

(continued)

Table 9.1 (continued)

Countries	EEC	Bio-diversity				Ecological safeguard			Air quality				Index of Indoor air pollution	Nitrogen oxides emission	Sulfur dioxide emission
		Threatened fish species	Threatened mammal species	Threatened plant species	GEF benefits index for biodiversity	Terrestrial protected areas	Marine protected areas	Inhalable particles (PM10)	Particulate matter (PM2.5)						
Turkmenistan	50.7	58.7	94.8	95.1	99.8	1.8	7.9	7.9	76.8	73.7	78.6	100.0	68.1	40.6	
Lebanon	53	43	28	49	40	72	108	NA	38	82	91	1	55	74	
Argentina	50.4	56.9	89.6	94.6	99.9	0.2	1.1	0.0	82.8	81.8	100.0	100.0	68.9	40.7	
	54	82	61	59	22	109	127	90	10	55	1	1	16	65	
	50.3	59.1	82.5	79.3	98.0	17.7	9.3	1.3	74.5	58.4	90.0	100.0	58.3	40.6	
	55	32	88	117	91	20	101	72	40	106	34	1	124	72	
Jamaica	50.3	56.8	90.1	97.3	88.0	4.4	32.8	5.4	58.4	80.3	90.1	26.4	68.9	40.8	
	56	84	58	22	119	50	36	29	65	58	33	70	13	52	
Korea, Rep.	49.7	57.5	91.0	95.1	99.8	0.7	11.5	5.0	72.6	62.0	71.6	100.0	66.1	39.8	
	57	77	47	49	40	92	92	41	44	99	105	1	93	93	
Tunisia	49.6	55.4	83.5	92.9	99.6	0.5	2.5	3.3	80.5	83.2	87.7	100.0	68.5	40.4	
	58	105	82	78	51	99	121	70	22	50	48	1	38	78	
Oman	49.5	58.0	87.7	95.1	99.6	3.7	17.9	1.6	66.8	30.7	71.1	100.0	68.9	40.5	
	59	67	70	49	51	54	75	66	51	126	107	1	10	75	
Panama	49.4	56.6	80.7	91.8	88.8	10.9	32.4	5.2	56.7	67.2	94.6	26.4	68.8	40.9	
	60	91	94	84	117	28	39	30	74	92	16	70	25	31	
Russian Federation	49.4	66.8	83.5	82.6	99.5	34.1	20.4	14.2	58.1	89.1	86.9	38.3	52.7	23.4	
	61	4	82	110	56	10	68	73	66	16	55	56	127	128	
Cuba	49.1	58.5	84.0	92.4	91.0	12.5	12.6	5.7	69.6	89.1	94.0	55.9	67.7	40.3	
	62	50	79	81	113	24	90	87	46	16	18	52	72	85	
Bulgaria	49.1	57.7	91.0	96.2	99.7	0.8	16.5	4.1	67.2	70.8	84.5	NA	68.1	38.2	
	63	71	47	37	47	88	80	71	50	87	68	NA	54	109	
Iran, Islamic Rep.	48.9	58.4	86.3	91.3	99.9	7.3	12.3	2.1	69.3	59.1	62.9	100.0	63.3	35.9	
	64	52	74	90	22	37	91	80	47	105	119	1	110	120	

Romania	48.9	57.7	91.0	96.2	99.8	0.7	29.0	19.0	44.1	57.1	92.0	82.5	21.3	66.5	38.9
	65	72	47	37	43	92	48	80	4	70	7	79	77	89	105
Egypt, Arab Rep.	48.1	55.6	81.6	90.8	99.9	2.9	14.3	15.8	12.2	67.7	43.1	67.3	100.0	64.9	39.3
	66	104	90	96	30	64	87	91	26	49	121	114	1	99	98
Tanzania	48.0	42.3	17.9	81.0	83.1	14.8	49.9	74.5	13.1	50.8	86.1	88.2	0.4	64.4	40.9
	67	132	131	114	126	22	16	9	25	93	38	46	124	103	38
Slovenia	48.0	56.8	86.3	97.8	99.6	0.2	21.7	35.6	0.8	61.0	81.0	88.4	35.6	68.8	40.9
	68	85	74	17	54	109	64	55	75	61	56	45	59	21	44
Mexico	47.6	60.0	28.3	45.7	88.9	68.7	26.8	29.9	22.0	53.9	78.1	79.5	27.4	59.9	34.2
	69	17	130	132	116	5	56	63	14	83	69	88	69	121	122
Honduras	47.5	58.3	87.3	96.2	93.8	7.2	30.5	49.2	2.4	52.2	75.2	91.7	8.1	68.4	40.9
	70	58	71	37	107	38	42	33	59	85	76	28	98	43	43
Nepal	47.4	56.8	96.7	83.2	99.9	2.1	45.9	45.9	NA	41.5	80.3	41.3	2.9	68.0	40.9
	71	87	20	109	30	69	19	37	NA	122	58	129	113	57	41
Gabon	47.3	52.5	71.2	92.4	93.0	3.0	28.3	40.8	9.6	57.6	94.9	82.5	18.9	68.9	41.0
	72	122	112	81	111	63	52	44	28	69	3	80	80	9	15
United Arab Emirates	47.1	58.1	93.9	96.2	100.0	0.2	10.3	14.9	3.3	66.4	35.0	65.4	100.0	68.8	40.1
	73	66	36	37	1	109	98	93	52	53	123	116	1	22	88
Cambodia	46.7	53.1	80.2	79.9	98.3	3.5	42.1	69.8	0.4	45.3	69.3	73.6	1.4	67.8	41.0
	74	119	95	115	88	55	22	13	79	111	89	102	118	65	13
Croatia	46.6	53.8	71.7	96.2	99.7	0.6	22.8	35.1	4.4	59.2	83.9	84.8	30.2	68.4	40.8
	75	115	111	37	47	95	63	56	44	63	47	67	65	42	50
Libya	46.6	57.0	88.7	93.5	99.9	1.6	0.0	0.0	0.0	73.7	52.6	84.0	100.0	68.7	40.8
	76	81	66	72	30	73	132	130	90	43	116	72	1	27	56
Algeria	46.5	56.1	83.0	92.4	99.3	2.9	0.3	NA	0.3	73.9	49.6	88.4	100.0	68.0	40.7
	77	97	85	81	66	64	131	NA	83	42	119	44	1	61	63
Azerbaijan	46.5	58.6	95.3	96.2	100.0	0.8	19.0	19.0	NA	58.0	80.3	77.9	33.2	68.5	40.6
	78	47	27	37	1	88	71	80	NA	67	58	94	60	41	71

(continued)

Table 9.1 (continued)

Countries	EEC	Bio-diversity				Ecological safeguard			Air quality		Inhalable particles (PM10)	Particulate matter (PM2.5)	Index of Indoor air pollution	Nitrogen oxides emission	Sulfur dioxide emission
		Threatened fish species	Threatened mammal species	Threatened plant species	GEF benefits index for biodiversity	Terrestrial protected areas	Marine protected areas	Air quality							
Peru	46.2	62.5	90.6	70.7	84.4	33.4	23.4	36.7	3.6	51.2	69.3	86.3	14.4	67.4	37.5
Mozambique	79	9	53	123	123	11	62	53	51	90	89	60	85	80	111
	45.6	55.9	74.1	93.5	97.7	7.2	27.3	42.7	4.2	51.7	83.9	92.8	0.4	67.0	40.9
Philippines	80	99	109	72	94	38	55	43	46	88	47	23	124	86	36
	45.6	59.6	66.5	79.3	87.7	32.3	18.9	29.3	3.2	55.2	87.6	92.9	10.9	66.2	39.2
Namibia	81	20	119	117	120	12	73	64	54	79	28	22	89	92	104
	45.5	57.9	87.3	93.5	98.5	5.2	28.4	40.2	10.8	49.0	69.3	82.0	8.1	68.2	40.4
Mongolia	82	69	71	72	82	45	51	47	27	100	89	83	98	52	79
	45.5	60.4	99.5	94.0	100.0	4.2	36.1	36.1	NA	41.3	29.9	89.3	3.8	68.3	40.8
Senegal	83	15	3	64	1	51	29	54	NA	124	127	38	110	50	53
	45.4	54.3	78.8	91.3	99.5	1.0	45.7	65.2	16.3	38.4	43.8	52.0	9.7	68.1	40.9
Syrian Arab Republic	84	113	100	90	60	83	21	16	19	126	120	127	93	53	32
	45.3	55.4	84.0	91.3	99.9	0.9	1.1	1.4	0.7	70.9	60.6	63.0	100.0	67.8	40.1
Cote d'Ivoire	85	106	79	90	30	84	126	122	77	45	102	118	1	64	87
	45.3	53.4	78.8	87.5	93.8	3.4	36.7	61.1	0.0	45.7	78.1	76.1	2.2	67.4	27.1
Togo	86	118	100	102	106	58	28	20	90	110	69	96	117	78	127
	45.0	56.6	88.7	94.0	99.5	0.3	30.4	30.4	NA	47.3	80.3	73.4	0.3	68.6	41.0
Serbia	87	92	66	64	60	105	43	62	NA	107	58	103	126	33	3
	45.0	58.4	94.8	96.7	99.9	0.2	16.0	16.0	NA	56.6	100.0	80.1	15.6	68.0	38.1
Mauritania	88	56	28	30	30	109	81	90	NA	75	1	86	82	59	110
	44.9	55.9	84.9	91.8	100.0	1.3	17.7	1.1	42.5	57.0	50.4	74.5	6.9	100.0	100.0
Kuwait	89	101	78	84	1	78	76	124	6	71	118	98	103	1	1
	44.9	58.4	94.8	96.7	100.0	0.1	2.4	4.1	NA	66.5	33.6	68.0	100.0	68.9	39.3
	90	57	28	30	1	122	122	117	NA	52	124	112	1	14	102

Sri Lanka	44.8	52.6	79.2	84.2	83.5	7.9	35.4	58.2	1.3	46.1	52.6	90.9	3.6	68.6	40.5
	91	121	97	108	125	36	31	23	72	109	116	30	111	36	76
Congo, Rep.	44.8	62.0	78.3	94.0	97.8	19.9	33.5	26.9	43.4	40.4	58.4	58.0	2.5	68.3	40.8
	92	12	102	64	92	19	35	70	5	125	106	125	115	51	46
Albania	44.7	56.1	81.6	98.4	100.0	0.2	2.0	NA	2.0	68.3	72.3	84.4	NA	68.8	41.0
	93	98	90	11	1	109	123	NA	65	48	84	69	NA	19	10
Ukraine	44.1	56.8	90.1	94.0	99.1	0.5	8.1	9.2	6.4	61.6	89.1	86.2	38.3	63.4	37.1
	94	83	58	64	74	99	105	106	35	59	16	62	56	108	114
Armenia	43.9	58.8	98.6	95.1	99.9	0.2	21.5	21.5	NA	49.6	67.2	69.0	19.5	68.9	40.9
	95	38	9	49	22	109	65	77	NA	98	92	110	79	11	28
South Africa	43.9	56.7	59.0	87.0	96.2	20.7	14.5	18.5	8.5	56.3	86.9	83.4	25.6	63.9	33.2
	96	88	124	104	99	17	85	84	30	76	30	74	74	106	123
Ethiopia	43.9	58.2	93.4	82.1	98.6	8.4	29.8	49.7	NA	43.6	65.7	73.9	0.7	62.5	40.9
	97	64	41	112	80	32	45	32	NA	117	95	99	122	115	37
Macedonia, FYR	43.8	58.3	93.9	97.3	100.0	0.2	13.0	13.0	NA	55.9	87.6	87.9	14.5	68.9	41.0
	98	59	36	22	1	109	88	100	NA	77	28	47	84	12	9
Kenya	43.6	52.6	67.9	84.8	92.6	8.8	24.6	31.8	13.8	51.0	78.1	90.0	4.2	66.8	40.8
	99	120	116	106	112	31	58	61	24	91	69	35	108	88	45
Thailand	43.0	46.8	54.2	69.0	95.0	8.0	34.9	54.3	5.7	46.3	61.3	62.3	20.0	64.2	39.3
	130	53	47	84	74	47	93	103	NA	128	133	109	107	123	39
Ghana	42.5	53.5	79.2	91.3	93.2	1.9	23.8	39.7	NA	48.3	83.9	71.9	2.7	68.0	40.9
	101	116	97	90	109	70	61	48	NA	103	47	104	114	62	27
Morocco	42.0	54.7	77.8	90.2	98.4	3.5	2.9	3.8	1.6	61.9	83.2	87.3	38.7	67.8	40.0
	102	112	103	98	87	55	118	118	67	58	50	50	55	66	90
Kazakhstan	42.0	58.8	93.4	91.3	99.1	5.1	3.9	6.5	NA	57.9	86.9	83.4	30.6	65.2	32.7
	103	39	41	90	74	47	115	109	NA	68	30	75	64	98	125
Paraguay	41.9	60.1	100.0	95.7	99.5	2.8	14.4	14.4	NA	49.0	53.3	94.5	10.6	67.1	41.0
	104	16	1	46	60	66	86	95	NA	101	114	17	90	84	12

(continued)

Table 9.1 (continued)

Indicators	Ecological safeguard										Air quality	Inhalable particles (PM10)	Particulate matter (PM2.5)	Index of Indoor air pollution	Nitrogen oxides emission	Sulfur dioxide emission
	EEC	Bio-diversity	Threatened fish species	Threatened mammal species	Threatened plant species	GEF benefits index for biodiversity	Terrestrial protected areas	Marine protected areas	Ecological safeguard	Air quality						
Tajikistan	41.5	58.8	97.6	95.7	99.2	0.7	10.9	10.9	NA	NA	51.5	78.8	62.5	22.5	68.7	40.9
	105	41	14	46	67	92	96	104	NA	NA	89	68	120	75	30	30
Moldova	41.4	58.8	96.2	97.8	99.9	0.0	3.5	3.5	NA	NA	56.8	73.7	86.5	27.6	68.8	41.0
	106	40	23	17	30	128	116	119	NA	NA	73	82	58	68	17	14
Kyrgyz Republic	41.3	59.3	98.6	96.7	99.2	1.1	11.1	18.5	NA	NA	50.4	74.5	73.9	14.2	68.7	40.9
	107	27	9	30	70	81	94	84	NA	NA	95	79	101	86	32	26
Angola	41.2	57.6	81.6	91.8	98.0	8.3	20.1	33.4	0.0	0.0	44.7	57.7	76.1	8.9	60.7	40.9
	108	74	90	84	89	33	69	58	90	90	112	109	95	95	119	17
El Salvador	41.0	58.2	93.4	97.3	98.6	0.9	2.7	1.9	4.0	4.0	56.8	79.6	89.4	21.9	68.7	40.9
	109	62	41	22	80	84	120	121	49	72	66	66	37	76	29	25
Indonesia	40.6	54.7	34.0	0.0	77.5	81.0	23.8	38.0	2.5	2.5	42.5	56.2	84.2	8.6	42.6	36.2
	110	111	129	133	130	4	60	51	57	120	112	71	71	96	128	119
Uzbekistan	39.7	58.5	96.7	94.6	99.1	1.1	6.0	6.0	NA	NA	50.9	77.4	57.4	26.3	66.9	40.3
	111	49	20	59	72	81	111	112	NA	NA	92	74	126	72	87	84
Turkey	39.5	54.0	67.0	90.8	99.7	6.2	4.2	4.9	3.1	3.1	55.1	74.5	79.5	31.8	62.0	36.3
	112	114	118	96	47	41	113	113	55	55	80	79	89	63	118	118
Georgia	39.1	58.3	95.8	94.6	100.0	0.6	6.0	9.8	0.4	0.4	49.5	64.2	82.9	12.3	68.6	41.0
	113	60	24	59	1	95	110	105	79	79	99	97	77	87	35	11
Nigeria	39.1	52.0	72.2	85.9	90.0	6.0	20.8	34.5	0.1	0.1	43.2	72.3	58.8	4.2	64.4	40.4
	114	125	110	105	115	42	66	57	88	118	118	84	122	108	102	77
Bosnia and Herzegovina	39.0	56.8	85.4	97.8	100.0	0.4	1.1	1.4	0.8	0.8	54.2	84.7	88.9	10.3	68.8	40.3
	115	86	77	17	1	103	125	122	75	75	82	42	40	92	24	81
Lesotho	39.0	59.8	99.5	98.9	99.8	0.3	0.7	1.1	NA	NA	52.1	72.3	90.1	5.0	69.0	NA
	116	19	3	6	43	105	127	124	NA	NA	86	84	32	105	2	NA

Madagascar	38.2	53.4	59.9	64.7	84.1	29.2	4.9	8.2	0.0	51.9	79.6	97.3	0.1	69.0	40.8
	117	117	123	127	124	14	112	107	90	87	66	9	129	6	47
Uruguay	38.2	55.9	83.0	94.0	100.0	1.2	0.4	0.5	0.3	53.2	18.2	97.2	46.2	67.5	40.9
	118	100	85	64	1	80	129	128	83	84	131	11	53	76	18
Haiti	37.9	59.3	90.6	97.3	98.5	5.2	0.3	0.5	NA	50.0	74.5	91.7	1.0	68.7	41.0
	119	26	53	22	83	45	130	128	NA	97	79	27	120	31	8
Eritrea	37.4	57.5	91.5	94.6	99.8	0.8	8.0	13.3	NA	44.3	55.5	73.9	6.7	68.8	41.0
	120	76	45	59	43	88	106	98	NA	114	113	100	104	23	6
Myanmar	36.8	55.0	81.6	75.5	97.8	10.0	10.2	16.8	0.3	43.1	70.8	66.0	0.7	62.4	40.9
	121	109	90	121	92	29	99	88	83	119	87	115	122	117	34
Guinea	36.5	52.1	69.3	88.0	98.7	2.3	10.9	18.2	NA	44.0	59.9	78.2	0.3	67.3	41.0
	122	124	115	101	79	68	95	86	NA	116	104	93	126	81	2
Yemen, Rep.	36.3	56.3	89.2	95.1	90.8	3.2	1.6	1.1	2.3	47.5	75.2	58.4	14.8	68.3	40.3
	123	94	62	49	114	61	124	124	60	106	76	124	83	46	86
China	36.1	63.5	46.7	59.2	78.2	66.6	27.5	44.8	1.6	22.0	56.9	37.0	10.6	0.0	0.0
	124	8	128	129	128	6	54	38	67	132	110	130	90	132	131
Iraq	35.2	58.2	94.8	92.9	100.0	1.6	0.0	0.0	NA	44.5	35.8	43.0	41.9	68.3	39.3
	125	63	28	78	1	73	132	130	NA	113	122	128	54	49	101
Vietnam	35.2	51.2	67.9	70.7	93.1	12.1	10.8	16.6	2.1	41.6	60.6	58.6	7.1	64.1	39.9
	126	127	116	123	110	27	97	89	62	121	102	123	101	105	92
Niger	34.9	58.7	98.1	93.5	99.9	0.9	19.0	19.0	NA	29.0	29.9	69.0	0.1	NA	32.0
	127	44	13	72	30	84	71	80	NA	129	127	111	129	NA	126
Pakistan	34.9	56.2	84.0	87.5	99.9	4.9	17.2	27.2	2.3	32.1	33.6	36.6	9.2	63.3	38.5
	128	95	79	102	30	49	78	69	60	127	124	131	94	111	108
Cameroon	34.8	45.9	47.2	79.3	77.9	12.5	15.0	24.7	0.4	41.4	56.9	64.4	3.1	67.1	40.9
	129	129	127	117	129	24	83	71	79	123	110	117	112	85	33
Sudan	32.9	58.4	91.0	91.8	99.1	5.1	11.1	11.1	NA	30.1	0.0	69.0	4.7	58.4	40.9
	130	53	47	84	74	47	93	103	NA	128	133	109	107	123	39

(continued)

Table 9.1 (continued)

Countries	EEC	Indicators													
		Bio-diversity	Threatened fish species	Threatened mammal species	Threatened plant species	Threatened species	GEF benefits index for biodiversity	Ecological safeguard	Terrestrial protected areas	Marine protected areas	Air quality				
Mali	30.7	58.9	98.6	93.5	99.6	1.5	6.3	6.3	NA	27.8	19.0	68.0	0.3	69.0	NA
	131	34	9	72	54	75	109	111	NA	130	130	113	126	4	NA
Bangladesh	27.9	55.0	91.5	81.5	99.1	1.4	3.1	4.6	0.9	26.2	16.1	34.1	1.4	64.4	40.6
	132	110	45	113	72	76	117	115	74	131	132	132	118	101	69
India	23.8	42.3	0.0	48.9	83.0	39.9	8.8	13.3	2.1	21.2	62.0	0.0	7.5	23.4	20.1
	133	131	133	131	127	8	103	98	62	133	99	133	100	129	129
Highest score	73.0	79.1	100.0	100.0	100.0	100.0	97.6	100.0	53.4	84.7	100.0	100.0	100.0	100.0	100.0
Lowest score	23.8	41.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.2	0.0	0.0	0.1	0.0	0.0
Average score	49.1	57.5	83.1	89.8	95.8	9.4	24.9	32.9	9.8	60.9	72.5	80.7	48.4	64.9	39.3
Standard deviation	9.3	4.9	17.3	12.9	10.4	18.5	20.1	24.9	13.4	16.1	19.3	15.4	42.7	10.8	7.8



Fig. 9.1 EEC scores of six continents & top three countries of each continent in 2012

To compare and analyze the EEC levels of all the countries in a more visual way, the EEC scores are displayed in Fig. 9.2. According to Fig. 9.2, the EEC scores of the countries are concentrated, mostly in 40–70 points (up to 108 countries, accounting for 81.20 % of the total). Among the developed countries, Germany scores the highest, 73.0 points; among the developing countries, Venezuela scores the highest, 68.7 points. They have little difference. However, among the developed countries, United Arab Emirates scores the lowest, 47.1 points; among the developing countries, India scores the lowest, 23.8 points. They have large difference.

9.2 Factor Scores and Contribution Rates of EEC

Table 9.1 lists the evaluation results of the subordinate indicators of EEC and displays the scores and rankings of 3 pillars and 11 individual indicators of EEC in 2012 so as to analyze the influences of the pillars and individual indicators on EEC of the countries.

On pillars, ecological safeguard enjoys very high standard deviation, hitting 20.1, indicating that this indicator has a large difference among the countries and is the most primary factor causing EEC differences among the countries. The indicator of air quality also has relatively high standard deviation. The indicator of biodiversity has a low standard deviation, only 4.9, contributing little to EEC differences among the countries. Overall, the countries have large differences on the overall levels of EEC. Such differences are mainly caused by the differences of ecological safeguard and air quality, while biodiversity has very little influence. Hereafter, all

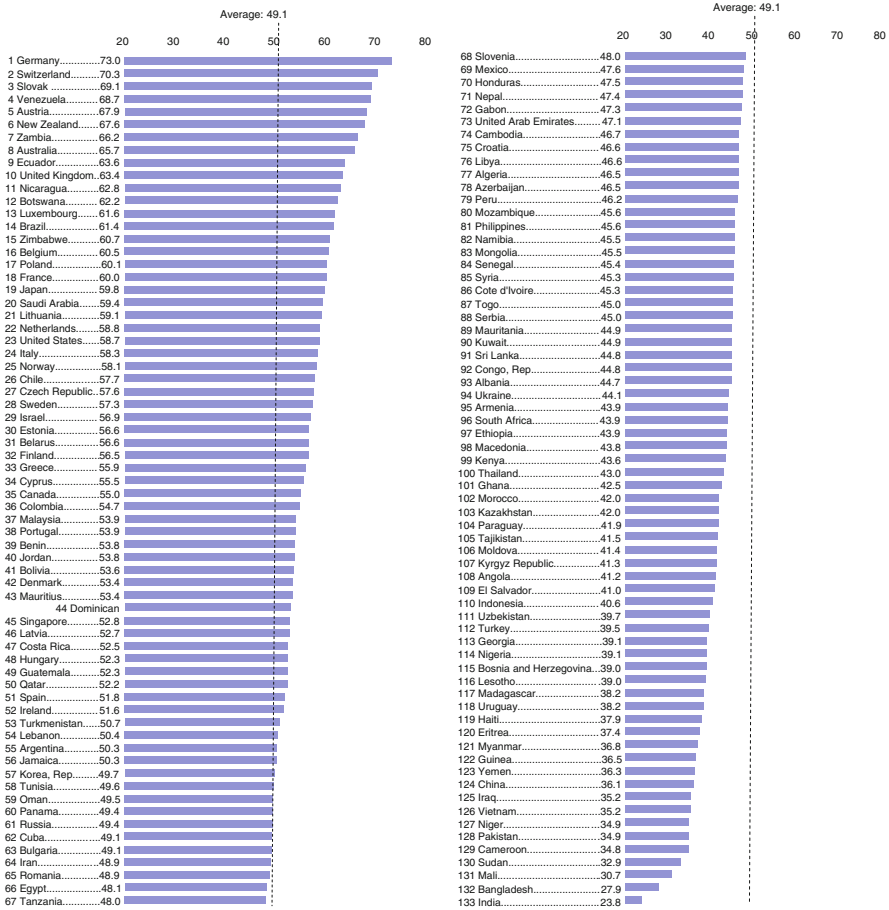


Fig. 9.2 Rankings and scores of EEC 2012

the countries shall keep on great efforts in ecological safeguard and air quality, to achieve the effective and rapid improvement of EEC and narrow the gap with the other countries, and meanwhile, pay close attention to enhance the competitiveness of biodiversity to accelerate the improvement of EEC.

On individual indicators, index of indoor air pollution enjoys the highest standard deviation, hitting 42.7, indicating that this indicator has the largest difference among the countries and is the most primary factor causing EEC differences among the countries. Terrestrial protected areas and inhalable particles (PM10) also have high standard deviation, 24.9 and 19.3 respectively, also contributing a lot to EEC differences among the countries. The other indicators have low standard deviation, indicating they have little influence on EEC differences among the countries.

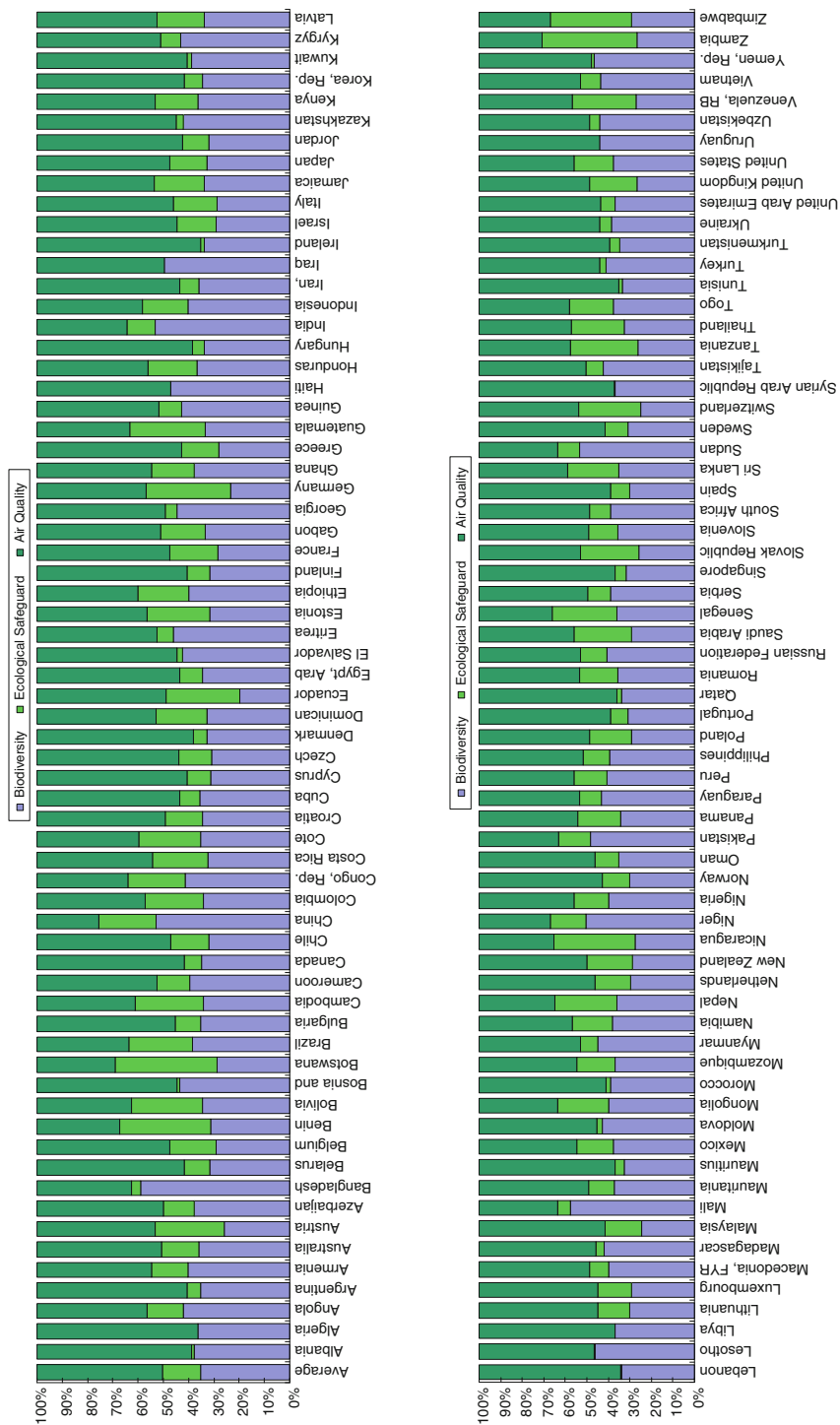


Fig. 9.3 Contribution rates of pillars of EEC 2012

To analyze the contribution of the pillars to EEC, firstly multiply the scores of the pillars by respective weights, then convert them into the scores at sub-index and finally divide them by the total score of sub-index to get the contribution rates of the pillars. Thus, we could find the contribution of each pillar to the sub-index more visually, as shown in Fig. 9.3.

According to the figure, air quality and biodiversity have high contribution rates to EEC: the former of 49.6 % and the latter of 35.2 %. The contribution rate of ecological safeguard is relatively lower, 15.2 %. Therefore, to enhance EEC, the countries shall focus specially on air quality and biodiversity, while not ignoring ecological safeguard.

Open Access This chapter is distributed under the terms of the Creative Commons Attribution Noncommercial License, which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author(s) and source are credited.