

TABLE SSA-5

S&E articles in biological and biomedical sciences, by region, country, or economy: 2000–18

(Number)

Region, country, or economy	Economies by income status	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
		Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count
World		164779.00	164,779	165639.00	165,639	169194.00	169,194	176054.00	176,054	186134.00	186,134	192712.00	192,712	204907.00	204,907	214559.00	214,559	224607.00	224,607	234833.00	234,833	241114.00	241,114	257769.00	257,769	271142.00	271,142	277726.00	277,726	290671.00	290,671	292274.00	292,274	296458.00	296,458	300040.00	300,040	306053.00	306,053
North America		59625.76	67,099	59834.78	66,791	60419.44	67,610	62074.15	72,526	65676.05	76,622	65679.67	77,103	67466.90	79,563	68485.54	81,376	68608.32	82,254	70144.74	84,590	69714.19	84,969	73088.53	89,786	75798.93	94,014	75201.93	94,465	76743.38	97,046	74934.00	96,154	72793.62	94,837	71657.65	94,871	70059.10	94,081
Canada	High	5660.69	7,147	5683.06	7,114	5828.05	7,341	6065.35	8,296	6104.89	8,502	6517.63	9,117	6925.77	9,728	7156.39	10,157	7146.19	10,168	7394.98	10,614	7714.42	10,793	73088.53	89,786	75798.93	94,014	75201.93	94,465	76743.38	97,046	74934.00	96,154	72793.62	94,837	71657.65	94,871	70059.10	94,081
Greenland	High	3.95	7	4.78	10	3.30	7	2.64	9	8.17	18	3.13	10	5.17	19	2.73	12	5.95	19	1.10	9	3.30	17	3.20	13	3.84	29	7.30	31	2.78	19	4.72	24	2.97	20	6.02	35	4.73	26
Mexico	Upper-middle	840.57	1,109	917.90	1,143	958.32	1,228	1110.96	1,517	1236.91	1,649	1333.42	1,779	1479.05	2,001	1564.77	2,114	1796.27	2,443	1849.17	2,493	1911.02	2,587	2041.59	2,808	2351.56	3,158	2446.41	3,281	2733.50	3,675	2863.94	3,851	3022.74	4,048	3147.22	4,279	3280.35	4,447
United States	High	53120.55	60,664	53229.04	60,129	53629.77	60,823	54895.20	65,308	58326.08	69,264	57825.48	69,133	59056.91	71,012	59761.66	72,476	59659.92	73,009	60899.49	74,983	60367.28	75,226	63329.32	79,578	65273.01	82,777	64659.69	83,147	65737.40	85,207	63945.88	84,239	62037.36	82,997	60790.41	82,946	59324.72	82,046
Central America and Caribbean		383.59	611	416.66	639	403.97	646	463.64	776	479.44	831	523.43	933	576.32	1,016	596.12	1,128	561.05	1,080	610.75	1,177	628.05	1,188	655.65	1,275	665.46	1,363	631.57	1,335	737.50	1,543	616.95	1,443	589.21	1,430	642.73	1,549	566.72	1,419
Antigua and Barbuda	High	0.00	0	0.00	0	0.08	1	0.00	0	0.00	0	0.47	3	0.11	1	0.25	1	1.56	3	0.00	0	0.18	1	0.18	2	0.75	4	0.00	0	0.25	2	0.72	2	0.27	2	0.50	1	0.70	2
Bahamas, The	High	0.00	0	0.08	2	0.00	0	0.00	0	0.53	2	0.80	2	0.00	0	0.65	2	1.15	5	0.69	3	0.17	3	1.37	7	1.61	7	2.02	10	3.42	12	1.60	7	1.96	7	3.85	21	4.19	16
Barbados	High	4.75	7	2.80	7	4.86	11	3.75	11	2.38	8	3.45	9	6.48	10	6.57	9	11.11	17	1.64	10	2.67	8	4.23	13	1.09	5	2.24	9	4.08	14	5.83	13	5.13	17	2.78	9	5.47	10
Belize	Upper-middle	0.17	1	0.00	0	0.98	4	0.14	1	2.28	5	1.07	4	2.55	11	1.92	6	0.61	2	2.57	10	3.01	8	1.08	6	3.13	8	2.33	9	1.63	11	2.41	12	5.43	20	2.36	10		
Costa Rica	Upper-middle	41.49	80	43.08	78	63.78	107	59.40	119	73.38	132	108.80	197	80.05	157	91.01	207	76.00	163	89.74	191	94.94	200	103.38	223	93.89	209	90.23	217	115.30	275	99.87	252	99.19	244	120.81	295	119.36	295
Cuba	Upper-middle	187.42	234	185.21	235	174.88	229	223.20	293	215.33	286	222.87	309	263.50	349	224.24	326	213.47	308	259.04	366	238.87	347	255.07	370	243.06	382	225.06	351	240.43	378	185.81	317	137.45	261	163.23	291	119.15	238
Dominica	Upper-middle	0.00	0	1.10	2	0.00	0	0.00	0	0.83	1	0.27	2	0.46	2	0.80	4	0.17	1	2.42	4	0.27	2	1.95	7	2.85	7	0.50	1	0.92	4	1.94	10	7	1.58	7	1.93	6	
Dominican Republic	Upper-middle	1.37	6	1.45	5	0.81	5	2.20	7	3.26	9	2.00	7	0.20	1	1.58	9	3.52	14	3.17	12	4.66	14	5.37	19	4.55	23	9.48	30	8.72	37	7.15	32	6.26	25	8.36	35		
El Salvador	Lower-middle	1.14	2	3.27	4	3.05	5	1.08	2	2.12	6	4.37	9	0.83	3	1.08	3	3.14	9	3.93	11	4.29	11	2.49	9	2.33	6	5.07	14	4.86	14	3.52	7	4.49	15	2.81	9	5.51	14
Grenada	Upper-middle	0.00	0	0.25	1	0.00	0	1.39	5	1.31	3	1.79	6	9.12	26	10.96	30	12.75	38	7.80	18	10.47	24	9.96	24	24.91	55	24	11.11	39	9.11	29	14.14	51	14.16	56			
Guatemala	Upper-middle	15.86	32	12.86	24	12.54	22	11.61	31	6.00	23	16.05	41	7.19	22	9.12	26	18.56	44	27.02	60	15.68	36	26.35	61	22.77	56	22.07	56	21.14	52	27.54	79	21.82	69	27.54	79		
Haiti	Low	1.25	2	2.47	6	1.98	5	1.95	7	1.29	4	0.76	3	2.31	7	3.41	10	0.98	6	3.80	13	1.52	7	5.79	27	4.52	16	7.00	21	7.61	30	4.87	23	8.81	33	5.65	24	6.37	22
Honduras	Lower-middle	4.19	11	4.38	9	2.66	12	1.33	5	0.91	6	4.13	9	2.63	8	2.94	10	5.71	16	6.60	18	9.02	27	7.51	21	9.38	34	11.21	27	9.91	31	11.21	27	9.91	31	10.79	37		
Jamaica	Upper-middle	9.23	15	21.77	32	19.39	36	11.27	19	16.19	27	14.82	26	22.24	33	21.70	36	17.84	30	22.89	39	23.37	37	33.99	56	16.60	33	28.97	52	34.17	69	17.89	44	20.25	49	16.73	32		
Nicaragua	Lower-middle	3.40	10	2.38	5	0.00	0	3.24	7	3.81	12	3.05	15	4.87	20	4.06	13	7.56	21	7.67	24	7.23	21	5.44	22	9.98	30	7.26	21	8.83	27	11.13	42	11.04	45	9.20	38		
Panama	High	29.59	69	37.70	82	35.52	83	43.85	102	39.31	107	42.09	112	52.36	146	60.07	173	68.80	182	60.32	173	62.75	186	61.59	188	71.39	227	71.98	231	81.91	272	83.82	278	95.89	296	86.14	297		
Puerto Rico	High	66.60	127	83.27	139	69.25	116	79.15	150	91.40	180	74.88	182	98.98	216	128.00	245	104.98	235	96.11	237	117.01	257	117.87	268	138.84	303	110.39	258	126.44	305	124.78	318	115.14	296	107.66	277		
Saint Kitts and Nevis	High	0.00	0	0.00	0	0.08	1	0.17	1	0.00	0	0.00	0	1.43	4	0.31	2	0.93	6	1.97	9	2.81	9	0.00	0	4.08	12	3.66	9	5.90	17	4.02	22	5.87	38	10.38	34	7.71	32
Saint Lucia	Upper-middle	1.50	2	0.30	1	0.00	0	0.00	0	0.25	1	0.00	0	0.52	3	0.73	5	0.50	1	0.00	0	0.34	2	0.33	1	0.37	2	0.20	0	0.00	0	0.93	2	1.93	5	0.33	0		
Saint Vincent and the Grenadines	Upper-middle	0.00	0	0.00	0	0.00	0	0.00	0	0.13	1	0.00	0	0.70	3	0.14	1	0.00	0	0.00	0	0.34	2	0.33	1	0.37	2	0.20	0	0.00	0	0.50	1	0.50	3	0.17	1		
Trinidad and Tobago	High	15.62	23	14.28	23	14.10	26	19.90	34	18.73	33	21.76	32	19.79	28	26.58	44	22.22	38	22.72	47	24.83	44	21.06	43	21.53	45	28.00	63	50.63	80	18.28	47	27.19	46	25.95	51	18.93	38
South America		4052.88	4,956	4190.04	4,975	4914.49	5,833	5251.78	6,527	5709.45	7,112	6375.65	7,851	8006.64	9,725	8535.69	10,358	9693.57	11,722	10516.77	12,631	11189.37	13,431	11863.23	14,358	12981.69	15,758	13298.62	16,326	14146.83	17,525	14574.03	18,165	15448.68	19,493	16097.56	20,254	16519.70	21,028
Argentina	High	1082.87	1,306	1076.19	1,285	1143.68	1,376	1145.22	1,469	1182.97	1,559	1209.16	1,620	1473.40																									

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Ecuador	Upper-middle	21.96	41	10.25	21	29.42	50	21.37	55	24.65	66	42.38	87	39.83	90	51.79	118	53.40	123	74.11	165	64.21	151	63.68	155	83.33	199	82.65	237	106.88	266	127.79	325	197.77	445	239.66	555	271.06	593
Guyana	Upper-middle	2.33	5	2.67	6	3.25	5	1.09	3	1.61	6	1.52	3	2.13	6	2.79	9	2.98	10	2.21	8	6.58	10	4.13	8	1.64	4	2.12	6	2.32	11	7.01	17	2.78	9	3.73	14		
Paraguay	Upper-middle	3.73	7	2.31	6	4.39	11	6.15	15	6.06	13	6.70	19	6.37	18	6.70	22	7.01	19	7.37	22	5.18	15	10.19	29	10.36	28	11.67	32	19.08	42	23.42	51	19.28	48	28.58	64	28.83	56
Peru	Upper-middle	59.25	99	57.68	95	50.78	100	92.09	166	87.42	171	94.81	179	176.84	347	145.21	264	108.83	236	115.47	243	146.79	282	155.16	324	147.14	320	153.24	320	165.87	385	174.97	422	199.70	451	255.32	546	247.82	560
Suriname	Upper-middle	0.38	1	0.99	3	0.79	2	1.14	3	2.64	4	2.14	6	1.17	2	0.83	4	2.13	5	1.67	2	1.17	3	0.73	4	3.49	9	3.29	6	1.18	4	3.26	9	6.94	18	5.07	15	7.15	21
Uruguay	High	60.51	104	60.57	87	61.70	93	77.90	128	98.68	141	98.68	158	95.18	164	106.78	175	115.45	204	139.38	236	131.97	241	165.11	282	142.86	266	156.05	293	188.51	344	167.25	330	180.75	351	183.35	343	218.16	413
Venezuela	Upper-middle	187.21	248	160.79	222	173.93	248	186.22	276	210.90	311	212.02	317	212.33	309	226.37	336	318.86	437	384.70	504	291.45	421	248.40	370	260.49	375	236.06	354	196.64	324	204.34	310	183.47	296	184.89	318	112.76	244
Europe		64565.13	71,712	64521.66	70,729	65249.41	72,131	66641.43	76,087	69300.46	79,175	70393.76	80,846	72678.24	83,704	74671.88	86,438	78440.61	90,894	80865.28	93,780	81441.56	95,379	84680.29	99,914	89593.87	106,030	98863.95	110,909	92875.16	110,909	93365.17	112,144	92114.11	111,649	92107.29	112,315	91413.57	112,800
EU		55901.53	63,271	55911.27	62,450	56655.82	63,797	57746.49	67,418	60203.85	70,352	60973.00	71,752	63185.73	74,594	64774.44	76,950	68005.60	80,854	69828.19	83,338	69811.84	84,234	72434.21	88,216	76705.30	93,695	77131.27	88,216	79203.86	97,963	78868.78	98,446	76753.08	97,067	76384.17	97,350	74987.82	97,130
Austria	High	946.05	1,347	985.58	1,349	1058.26	1,458	1075.53	1,636	1079.55	1,701	1029.51	1,686	1107.61	1,833	1200.57	2,008	1306.68	2,243	1343.38	2,343	1391.45	2,460	1442.81	2,624	1545.73	2,830	1568.61	2,984	1603.05	3,134	1599.74	3,178	1577.85	3,300	1590.92	3,323	1492.94	3,265
Belgium	High	1512.47	2,181	1662.42	2,246	1613.58	2,272	1690.38	2,564	1823.91	2,738	1928.57	2,977	1847.16	2,879	1984.15	3,194	2011.99	3,302	2153.73	3,532	2104.80	3,637	2296.81	3,981	2372.47	4,229	2369.53	4,343	2379.47	4,417	2396.03	4,646	2301.56	4,531	2228.17	4,593	2230.92	4,762
Bulgaria	Upper-middle	301.92	374	235.28	306	337.82	420	235.28	385	366.47	379	351.26	473	312.73	436	334.01	473	366.32	530	628.65	791	460.96	605	487.25	673	396.97	574	440.14	648	498.12	722	389.46	587	397.51	633	411.02	613	363.41	591
Croatia	High	180.87	214	171.25	214	165.36	213	192.65	263	206.62	276	213.57	290	257.60	345	323.28	414	412.91	519	327.66	453	310.96	473	314.83	484	358.06	571	327.55	548	311.08	559	300.78	546	355.22	612	345.77	621	363.30	648
Cyprus	High	16.19	27	11.42	22	18.63	32	8.92	23	14.47	25	17.47	40	24.13	51	29.39	60	30.56	64	37.85	76	38.27	80	42.32	96	79.45	160	66.70	153	61.38	172	61.38	195	88.65	207	95.21	250		
Czechia	High	748.94	953	782.27	1,003	766.90	982	908.48	1,233	1005.52	1,354	974.31	1,333	1099.96	1,511	1230.46	1,725	1402.09	1,953	1361.96	1,936	1534.91	2,212	1381.53	2,046	1585.78	2,364	1530.56	2,429	1674.14	2,675	1810.96	2,979	1843.01	3,053	1828.11	3,098	1727.08	3,074
Denmark	High	1373.15	1,936	1384.33	1,946	1315.05	1,876	1470.12	2,217	1481.03	2,232	1397.07	2,257	1439.41	2,366	1470.54	2,439	1515.31	2,601	1500.19	2,690	1596.25	2,805	1673.81	3,061	1919.33	3,414	1957.79	3,668	2068.36	3,911	2133.88	4,148	2072.90	4,165	2054.85	4,103	2002.57	4,250
Estonia	High	85.08	128	99.98	143	108.95	146	102.40	161	106.25	188	130.76	215	133.82	218	153.51	245	137.37	240	179.89	291	181.85	300	189.86	328	211.40	406	205.61	409	220.31	432	224.21	447	215.02	472	512	194.68	515	
Finland	High	1053.19	1,425	1102.55	1,458	1143.69	1,508	1156.21	1,647	1223.42	1,741	1160.29	1,697	1209.03	1,759	1220.74	1,891	1293.31	1,962	1240.59	1,962	1230.71	2,016	1317.57	2,147	1357.67	2,292	1318.71	2,316	1367.45	2,432	1326.80	2,456	1273.95	2,432	1272.77	2,482	1225.69	2,479
France	High	8208.53	10,502	8066.28	10,198	7845.32	10,009	7885.28	10,872	8013.73	11,178	8026.31	11,346	8155.81	11,640	8171.04	11,915	8330.56	12,338	8490.50	12,803	8619.92	13,094	8685.71	13,419	8929.98	14,002	9062.04	14,385	9182.59	14,736	8965.41	14,747	8918.77	14,938	8666.95	14,819	8343.07	14,685
Germany	High	9981.24	12,840	9896.78	12,554	9919.53	12,755	10056.95	13,810	10468.35	14,532	10952.80	15,272	11326.20	15,836	11384.10	16,280	11669.54	16,883	11994.88	17,462	11954.54	17,860	12337.30	18,576	13018.62	19,848	12851.72	20,029	13584.84	21,267	13051.18	20,945	12884.88	20,955	12998.79	21,298	12470.56	21,087
Greece	High	635.34	808	678.86	833	763.05	956	760.34	977	861.40	1,111	933.09	1,205	1034.99	1,351	1021.43	1,371	1255.45	1,716	1182.15	1,635	1175.97	1,671	1251.11	1,827	1149.52	1,769	1209.16	1,779	1149.52	1,769	1085.19	1,767	1097.67	1,762	1168.92	1,864	1136.77	1,838
Hungary	High	624.63	834	628.47	826	717.98	926	710.36	1,024	704.40	1,023	855.19	1,184	890.42	1,243	938.43	1,305	1260.63	1,690	988.38	1,399	843.74	1,253	1022.42	1,559	1020.29	1,527	992.71	1,469	1051.34	1,617	998.83	1,609	975.05	1,556	972.59	1,537	891.55	1,536
Ireland	High	356.05	504	378.62	514	374.33	528	378.42	605	428.79	682	526.80	796	502.92	821	576.24	955	625.04	1,057	720.23	1,187	800.56	1,336	874.20	1,445	850.90	1,435	810.10	1,390	808.04	1,412	758.41	1,378	739.23	1,429	722.54	1,410	734.66	1,543
Italy	High	5590.17	6,776	5404.57	6,470	5780.60	6,959	6061.91	7,624	6384.14	7,972	6267.02	8,067	6682.37	8,512	7014.85	9,119	7535.94	9,852	7782.43	10,228	7539.67	10,038	8021.77	10,835	8590.49	11,614	8828.53	12,159	8884.53	12,341	8855.39	12,437	8607.96	12,404	8728.00	12,613	8887.66	12,997
Latvia	High	44.16	65	39.15	55	41.75	65	40.76	69	47.84	76	53.53	76	30.20	56	44.75	71	42.15	81	103.64	138	55.85	92	142.21	186	119.13	132	102.94	166	119.13	175	102.94	166	188.72	271	191.08	174	188.72	276
Lithuania	High	82.75	114	100.90	136	57.93	93	81.20	125	126.87	171	137.10	185	133.73	195	138.57	201	118.87	195	128.93	201	125.72	195	159.09	241	159.77	243	155.25	229	173.50	271	200.88	313	191.60	314	197.24	337	184.80	338
Luxembourg	High	14.97	27	19.57	39	18.82	34	16.48	37	30.88	57	23.42	4																										

TABLE SSA-5

S&E articles in biological and biomedical sciences, by region, country, or economy: 2000–18

(Number)

Table with columns for Region, country, or economy; Economies by income status; and years from 2000 to 2018. Each year column includes Fractional count and Whole count.

TABLE SSA-5

S&E articles in biological and biomedical sciences, by region, country, or economy: 2000–18

(Number)

Region, country, or economy	Economies by income status	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
		Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count		
Kuwait	High	87.76	113	83.62	98	97.58	113	86.62	120	89.02	118	110.48	134	81.40	104	92.66	116	113.16	145	94.09	124	81.26	109	104.75	145	92.14	125	98.37	144	70.65	109	76.81	129	72.63	130	64.82	127	114.52	178
Lebanon	Upper-middle	41.04	59	42.33	66	45.27	77	56.83	82	59.08	92	53.96	84	65.09	110	67.27	109	76.16	138	77.47	144	70.05	132	102.02	178	93.11	194	101.84	217	120.88	238	120.90	241	125.62	273	143.10	329	179.31	344
Oman	High	14.89	30	12.47	19	22.16	34	24.82	40	20.50	38	28.69	41	40.48	57	37.05	62	33.81	60	25.61	60	47.54	99	46.90	98	53.19	102	62.69	120	75.17	156	68.08	154	77.21	186	76.61	201	84.29	237
Qatar	High	3.92	7	5.03	7	5.67	7	3.86	6	5.55	11	3.87	9	8.86	16	9.31	22	12.77	27	16.56	41	23.21	58	24.28	70	32.25	99	43.69	146	65.09	217	79.27	254	97.53	314	83.08	258	112.83	288
Saudi Arabia	High	114.52	156	122.28	151	133.40	179	138.18	204	122.72	173	135.91	188	167.44	227	167.50	240	199.98	310	264.16	423	394.55	749	540.19	1,124	647.52	1,421	811.78	1,729	959.48	2,174	964.27	2,378	1,035.43	2,566	1,121.95	2,491	1,214.90	2,603
Syria	Low	17.97	31	21.20	32	25.02	40	24.38	41	29.62	44	25.88	46	40.01	51	45.60	63	40.01	51	45.60	63	41.84	90	54.06	110	62.04	116	58.63	118	50.81	78	37.74	65	40.10	64	47.20	80	61.78	84
United Arab Emirates	High	35.58	55	38.62	55	33.37	57	49.17	90	49.78	89	63.27	105	82.46	145	56.34	119	70.15	139	51.70	117	84.29	162	88.50	177	78.70	159	95.84	201	110.06	249	109.86	244	134.49	315	159.55	412	191.22	482
West Bank ^c	Lower-middle	5.00	8	2.21	5	6.31	12	5.02	9	9.00	12	5.05	11	8.92	27	13.13	25	13.54	31	10.02	22	10.81	27	12.77	40	13.77	31	13.45	37	22.11	49	14.23	36	23.40	43	24.73	52	28.90	56
Yemen	Low	3.50	9	5.46	11	5.00	7	5.76	11	4.90	11	2.59	7	9.00	16	4.12	9	8.90	16	13.54	32	14.60	39	13.43	36	13.51	33	10.04	36	19.20	48	9.50	31	6.00	27	13.52	45	15.01	69
Africa		2134.80	2,968	2268.04	3,022	2290.49	3,164	2524.65	3,763	2515.92	3,861	2796.03	4,306	3430.09	5,186	4015.91	5,971	4123.15	6,153	4844.96	7,148	5397.86	7,964	5859.77	8,910	6225.75	9,543	6064.17	9,837	6430.23	10,516	6738.45	11,372	7220.87	12,110	7878.46	13,159	8841.49	14,324
Algeria	Upper-middle	15.74	31	25.20	38	24.85	40	39.59	67	51.17	83	47.88	81	79.42	131	99.32	157	94.66	160	117.41	194	126.23	207	125.48	212	165.19	254	209.82	317	211.79	322	245.32	375	281.93	431	323.56	498	363.84	553
Angola	Lower-middle	2.41	5	0.00	0	0.53	2	0.64	3	1.67	4	1.77	6	1.78	6	2.99	8	0.54	3	3.56	10	2.13	8	3.48	9	3.40	15	2.67	12	2.97	13	5.33	17	6.68	27	9.95	36	5.05	22
Benin	Low	19.21	37	22.92	42	14.49	30	15.59	39	18.15	45	20.27	41	28.35	58	26.58	63	42.60	93	44.01	101	34.61	90	56.13	110	57.90	119	66.83	151	59.29	140	50.69	120	49.50	123	67.65	154	64.70	146
Botswana	Upper-middle	6.66	14	11.17	18	16.84	31	23.78	36	20.87	37	21.27	38	24.12	45	29.47	54	22.87	56	29.85	55	20.53	44	21.38	60	33.80	76	34.22	81	35.52	93	35.38	85	37.69	108	40.77	114	56.08	135
Burkina Faso	Low	8.63	23	10.88	31	14.56	27	21.58	58	14.26	42	21.19	56	38.88	81	31.00	70	39.96	94	44.11	104	41.50	103	45.64	128	53.65	130	43.47	118	47.88	134	53.11	172	54.81	151	52.41	152	62.76	157
Burundi	Low	1.17	2	0.33	1	0.10	1	0.80	1	0.50	1	1.08	4	0.61	2	0.86	3	0.37	2	0.75	2	3.56	8	1.31	7	3.09	12	2.45	8	0.32	6	3.36	13	4.22	14	2.21	11	3.52	17
Cabo Verde	Lower-middle	0.25	1	0.00	0	0.00	0	0.00	0	0.50	1	0.00	0	0.56	3	0.33	1	0.53	2	0.31	2	0.75	5	0.00	0	1.97	6	1.83	9	0.78	4	2.31	6	3.35	8	3.35	8	1.15	6
Cameroon	Lower-middle	34.54	76	49.32	92	46.68	84	55.72	111	44.91	114	62.57	127	82.13	181	122.64	221	91.83	192	97.14	209	115.75	244	108.18	238	102.43	249	111.02	275	132.83	316	148.70	322	157.62	329	181.16	379	192.57	428
Central African Republic	Low	0.88	4	1.47	4	0.02	1	3.99	11	4.24	11	2.71	8	6.23	15	2.13	13	1.42	8	3.48	14	7.92	15	8.04	20	4.82	20	5.03	16	4.40	19	4.40	19	7.74	25	5.21	15	7.32	28
Chad	Low	0.00	0	0.20	1	0.33	1	0.76	4	1.25	3	0.81	4	3.26	9	1.41	7	1.75	6	1.59	6	0.67	1	2.10	10	1.48	4	1.14	7	1.42	5	2.17	7	2.53	9	2.08	14	2.72	9
Comoros	Low	0.20	1	0.00	0	0.00	0	0.33	2	0.17	1	0.97	4	0.17	1	0.31	2	0.38	1	0.43	1	1.15	5	0.55	2	0.67	4	0.56	4	0.75	2	1.05	4	0.77	4	1.87	9		
Congo, Democratic Republic of the	Low	3.85	11	0.75	4	1.29	6	0.52	4	3.21	12	6.14	19	3.56	14	9.84	24	10.15	30	7.87	19	14.10	41	10.84	42	20.54	67	16.36	66	22.77	70	25.47	94	23.30	84	34.00	104	38.50	121
Congo, Republic of the	Lower-middle	5.30	13	4.92	10	3.10	6	6.03	10	3.77	13	10.82	27	10.42	30	11.06	25	10.83	25	11.90	31	14.95	33	11.64	42	17.39	49	13.22	42	19.30	65	12.28	54	20.66	84	15.46	59	16.12	83
Côte d'Ivoire	Lower-middle	17.40	49	16.71	33	14.56	30	28.24	61	26.41	54	22.22	53	23.88	56	28.22	69	33.12	74	31.61	68	40.93	73	40.81	86	40.94	101	41.46	87	54.92	112	40.89	108	40.35	101	53.94	121	83.31	180
Djibouti	Lower-middle	0.00	0	0.14	1	0.00	0	0.00	0	0.21	2	0.67	3	0.14	1	0.34	2	0.40	1	1.03	5	0.13	1	1.14	4	0.53	3	1.51	4	0.48	4	0.52	4	0.73	5	0.52	4	1.78	9
Egypt	Lower-middle	341.68	420	353.61	426	329.12	438	426.34	562	405.26	533	419.98	567	508.59	683	563.25	755	643.64	863	997.35	1,334	954.79	1,358	1,221.53	1,771	1,588.10	2,191	1,132.00	1,845	1,351.60	2,231	1,291.44	2,217	1,452.63	2,465	1,510.72	2,631	1,957.37	3,132
Equatorial Guinea	Upper-middle	0.00	0	0.83	2	0.00	0	0.07	1	1.67	5	0.34	2	0.25	1	0.50	1	0.72	2	1.01	3	1.30	2	0.07	1	0.17	2	0.41	2	1.28	7	1.94	10	2.32	10	0.14	2	0.57	3
Eritrea	Low	0.70	4	2.67	4	1.67	4	2.53	4	2.75	4	2.27	6	2.43	9	2.75	7	1.38	3	0.20	1	0.00	0	1.96	6	2.66	8	3.51	8	2.66	8	3.66	9	0.67	1	1.26	4	5.46	10
Eswatini	Lower-middle	0.75	3	0.33	1	3.00	3	2.00	3	0.33	1	3.50	4	2.73	5	1.29	4	3.84	7	3.29	11	6.40	13	3.82	14	3.51	15	4.23	15	2.92	14	4.28	16	4.17	23	5.79	20	14.31	44
Ethiopia	Low	31.46	56	34.81	61	45.55	70	46.05	82	31.09	70	50.15	110	50.92	120	85.67	157	77.92	138	86.81	153	82.26	156	105.47	204	128.63	231	184.97	341	221.15	370	256.12	424	252.64	459	365.16	629	529.86	796
Gabon	Upper-middle	9.58	22	12.54	28	12.93	32	13.16	33	22.41	43	22.41	52	20.57	56	16.11	43	18.01	49	20.05	53	15.95	48	20.98	66	20.64	61	18.95	66	21.70	83	23.66	87	21.43	74	23.66	83	22.57	81
Gambia, The	Low	8.32	23	13.82	32	7.39	23	12.61	36	15.51	35	16.68	37	22.03	52	21.54	57	25.94	63	20.09	56	24.80	55	16.72	44	22.46	71	22.47	69	18.10	73	18.31	76	22.17	70	27.45	105	11.09	55
Ghana	Lower-middle	26.06	45	21.06	44	23.35	47	31.47	61	25.41	67	34.39	81	39.13	88	39.49	93	50.29	110	86.03	165	80.39	153	74.49	135	115.61	209	112.60	217	101.62	219	150.80	321	180.67	362	187.87	384	229.13	482
Guinea	Low	1.44	4	0.82	5	1.24	4	0.69	3	1.64	6	1.66	6	4.88	15	1.82	7	2.88	11	3.26	11																		

TABLE SSA-5

S&E articles in biological and biomedical sciences, by region, country, or economy: 2000-18

(Number)

Region, country, or economy	Economies by income status	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
		Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count		
Guinea-Bissau	Low	0.92	3	1.52	4	2.23	5	2.69	8	3.12	7	5.72	14	2.84	6	4.71	14	2.87	9	3.03	8	3.57	13	5.82	16	3.46	15	5.26	21	9.26	34	5.23	22	6.09	31	9.23	30	7.31	26
Kenya	Lower-middle	118.23	210	128.87	232	133.19	237	129.28	294	128.15	284	126.39	298	174.13	371	171.98	369	203.30	431	207.07	467	217.79	473	269.20	584	243.52	615	248.77	613	283.15	700	321.30	758	336.14	843	356.89	892	344.66	875
Lesotho	Lower-middle	2.50	3	3.25	4	2.83	5	2.00	2	0.33	1	0.18	2	0.17	1	0.67	3	0.61	2	1.78	6	1.09	4	3.04	10	3.38	10	1.59	7	2.67	9	1.90	5	2.76	10	4.98	14		
Liberia	Low	0.00	0	0.00	0	0.45	2	0.00	0	0.33	1	0.00	0	0.55	1	0.00	0	0.25	1	0.00	0	1.05	2	0.36	2	0.31	2	0.75	1	1.36	7	2.91	14	2.59	17	2.64	13	3.87	11
Libya	Upper-middle	1.08	3	7.46	10	7.11	12	3.09	5	7.86	10	6.41	10	11.36	22	14.55	22	7.51	17	13.89	27	24.85	46	23.82	46	13.29	32	12.78	37	14.68	44	13.55	46	12.20	48	12.98	49	13.30	52
Madagascar	Low	19.43	38	14.66	29	14.50	41	15.55	47	19.60	48	32.17	77	46.51	103	30.55	86	27.28	87	41.46	112	42.13	129	41.46	112	42.13	129	61.50	152	48.61	138	39.93	128	53.15	154	46.42	141		
Malawi	Low	17.57	35	18.85	37	20.46	36	25.88	50	22.20	55	19.12	49	17.27	46	24.37	60	25.75	69	17.06	62	26.60	83	29.73	97	41.11	120	27.19	102	37.70	120	38.47	133	36.99	138	61.73	179	58.27	185
Mali	Low	5.64	16	10.99	29	9.07	21	9.06	27	9.59	27	13.55	39	17.99	46	11.05	32	20.07	56	12.36	46	13.88	47	20.66	61	17.97	66	21.53	78	13.58	63	23.78	102	21.32	83	22.05	99	24.98	88
Mauritania	Lower-middle	2.14	5	1.21	4	1.68	6	0.95	4	1.39	3	0.75	5	1.14	4	1.41	5	0.69	4	1.68	7	3.11	7	5.80	15	4.36	11	2.87	10	2.34	6	1.72	6	2.34	9	4.49	11		
Mauritius	Upper-middle	8.51	13	14.75	20	16.50	23	11.42	21	12.97	25	15.15	23	16.01	27	9.20	20	12.28	20	14.68	22	10.09	26	12.87	22	21.93	36	18.23	38	24.31	40	14.08	27	25.30	44	26.59	68	28.85	81
Morocco	Lower-middle	64.68	114	86.27	129	101.94	158	103.02	165	94.51	161	98.21	164	84.23	154	119.06	196	129.53	212	115.73	192	130.35	205	136.36	240	188.90	310	170.10	316	168.82	311	195.96	367	194.08	342	274.06	443	301.78	480
Mozambique	Low	5.02	9	11.72	19	5.04	11	3.42	7	2.40	6	15.14	28	6.74	20	8.79	29	6.26	23	9.79	35	10.69	38	18.50	58	15.71	58	17.75	65	16.90	60	29.58	103	27.33	92	34.18	112	43.49	139
Namibia	Upper-middle	7.06	16	12.83	21	15.86	23	23.41	35	13.67	24	18.58	30	12.93	34	10.21	25	12.56	29	12.33	33	9.48	24	15.39	44	20.78	48	23.71	58	23.42	58	24.24	74	23.48	74	22.36	74	28.78	73
Niger	Low	3.14	8	3.73	9	6.07	12	2.56	6	3.16	12	3.54	12	7.08	16	8.88	18	6.81	28	14.01	33	16.28	42	9.22	34	8.20	33	10.21	35	17.41	50	15.03	56	16.09	53	13.88	56	16.40	50
Nigeria	Lower-middle	238.63	295	199.55	236	180.96	230	266.91	337	228.96	286	244.94	300	460.19	528	615.47	707	528.38	628	717.24	842	891.19	1,026	822.94	995	642.31	824	598.44	772	614.59	866	578.32	859	632.86	971	665.29	1,059	916.26	1,362
Rwanda	Low	0.29	2	2.38	6	0.75	2	0.59	2	0.91	4	2.13	7	2.84	10	5.45	22	5.81	18	5.12	16	4.93	25	13.05	39	14.07	43	11.12	35	11.95	45	20.75	73	21.47	62	21.69	65	19.35	69
São Tomé and Príncipe	Lower-middle	0.00	0	0.50	1	0.25	1	0.22	1	0.20	1	0.25	1	0.50	2	0.00	0	0.00	0	1.00	1	0.13	1	0.00	0	0.52	2	0.16	2	0.00	0	0.00	0	0.00	0	0.36	5	0.46	2
Senegal	Low	34.88	62	20.32	41	21.65	40	33.58	71	28.48	78	41.86	90	32.16	77	41.38	97	32.24	83	26.99	80	28.18	84	43.38	123	48.57	142	68.11	162	56.41	164	61.07	154	56.41	164	71.14	211	60.55	166
Seychelles	High	3.66	8	1.00	2	2.78	5	7.77	11	2.43	5	1.86	3	2.92	8	3.15	12	1.85	8	3.22	14	3.20	13	5.04	18	4.12	18	9.34	23	4.66	20	8.20	24	7.32	24	4.86	25	3.55	20
Sierra Leone	Low	0.34	2	1.00	1	0.73	4	0.48	2	0.00	0	0.00	0	0.72	3	2.97	8	2.50	5	2.39	7	4.12	13	5.21	15	3.07	12	5.19	15	10.68	40	14.30	48	14.24	41	13.52	42		
Somalia	Low	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.18	2	0.00	0	0.00	0	0.63	3	0.44	1	0.25	1	0.11	2	0.60	2	0.24	1	0.00	0	0.61	2	1.65	7
South Africa	Upper-middle	845.01	1,056	905.12	1,087	941.59	1,173	882.86	1,233	954.07	1,364	1,017.18	1,475	1,110.47	1,630	1,129.06	1,699	1,266.17	1,900	1,245.10	1,935	1,455.16	2,222	1,539.83	2,400	1,562.45	2,504	1,755.54	2,853	1,843.67	3,031	1,950.73	3,384	2,035.48	3,570	2,160.11	3,764	2,173.56	3,821
South Sudan	Low	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.13	1	0.00	0	0.83	3	0.39	5	1.27	3	0.36	2	0.74	3	1.66	5
Sudan	Lower-middle	13.07	30	13.82	26	12.24	24	19.72	38	14.29	37	16.42	34	30.25	56	35.30	76	47.92	78	80.96	118	95.62	139	90.07	151	53.57	100	52.99	112	44.05	122	39.39	105	44.85	129	48.29	138	60.30	159
Tanzania	Low	36.23	70	29.49	55	31.99	66	35.50	93	40.79	108	46.77	126	59.59	150	72.53	186	59.90	152	75.48	187	89.25	217	84.14	235	81.83	228	96.31	277	110.53	311	140.82	370	134.53	396	157.03	400	140.20	405
Togo	Low	5.40	12	3.75	8	6.04	9	4.67	14	2.95	6	6.39	13	6.68	15	8.56	20	9.72	17	7.38	19	9.51	19	15.49	35	7.41	24	9.41	25	11.44	37	12.96	33	12.29	32	9.79	29	20.47	51
Tunisia	Lower-middle	61.99	87	89.91	123	123.25	164	109.01	155	119.13	175	196.46	264	272.71	374	390.58	510	392.69	521	463.78	624	512.04	702	591.40	812	576.01	790	573.35	819	493.91	712	546.46	811	551.10	836	563.57	864	504.47	783
Uganda	Low	57.39	95	39.52	75	26.90	51	46.08	96	78.94	147	50.58	119	62.27	139	122.04	223	79.48	183	95.63	226	132.20	274	111.01	277	129.47	306	136.67	341	139.40	345	137.19	338	159.52	421	179.74	459	188.01	477
Western Sahara	na	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.13	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Zambia	Lower-middle	7.29	20	15.39	33	10.50	24	12.14	33	10.32	32	16.88	46	17.57	47	14.24	49	24.91	66	19.88	54	23.09	78	29.80	89	30.65	102	29.48	103	37.26	122	40.43	121	42.70	142	60.42	180	46.43	143
Zimbabwe	Low	38.48	68	45.73	72	32.32	63	40.31	82	28.62	60	27.67	63	32.30	67	47.56	108	35.84	87	36.86	83																		

TABLE SSA-5

S&E articles in biological and biomedical sciences, by region, country, or economy: 2000–18

(Number)

Region, country, or economy	Economies by income status	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
		Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count
Bhutan	Lower-middle	0.00	0	0.00	0	1.67	2	0.00	0	1.48	3	0.57	2	4.99	10	3.18	7	2.12	4	2.38	8	4.03	13	5.47	16	6.70	15	10.91	27	8.39	24	6.60	29	12.64	30	16.92	34	15.80	38
Brunei	High	3.64	7	3.15	7	0.54	3	1.17	3	3.26	8	2.48	6	2.24	10	6.53	14	5.17	12	7.00	16	4.44	13	7.39	23	6.54	28	11.10	31	17.02	45	20.85	60	21.39	57	14.50	42		
Burma	Lower-middle	2.58	7	3.67	6	1.87	4	3.73	12	3.10	13	7.10	19	7.24	20	4.33	15	6.37	19	9.57	30	8.97	28	8.27	31	7.16	23	8.04	21	11.27	37	15.59	63	21.48	84	38.34	113	50.46	170
Cambodia	Lower-middle	1.80	4	2.57	6	3.24	8	6.10	11	8.71	22	10.33	24	12.16	29	12.13	38	12.61	35	20.22	56	18.06	72	23.24	77	25.99	83	34.72	92	31.92	106	33.17	112	34.22	121	40.26	130	40.55	128
China	Upper-middle	3848.58	4,382	4335.46	4,922	4941.23	5,660	6200.17	7,313	7727.36	9,044	10597.95	12,271	13382.97	15,209	16095.87	18,333	18359.55	20,961	21096.64	24,130	22606.40	26,466	25906.69	30,526	28832.62	34,027	34076.96	39,430	39137.25	44,564	42472.05	48,357	45896.68	52,216	48090.58	54,731	52040.47	59,258
India	Lower-middle	3457.45	3,770	3732.17	4,011	3879.89	4,220	4601.77	5,075	5096.78	5,593	5805.30	6,371	6433.79	7,102	7188.91	7,887	7673.55	8,486	8573.54	9,427	9618.45	10,668	10755.63	11,920	11524.97	12,857	11977.83	13,455	13566.86	15,207	12638.08	14,347	13814.26	15,660	13834.93	15,700	14075.31	16,091
Indonesia	Lower-middle	101.91	203	86.09	165	107.34	195	100.96	198	103.04	242	149.73	283	161.17	319	173.75	345	168.31	330	214.95	406	219.87	454	289.30	519	300.47	589	406.63	738	402.57	737	520.94	905	714.59	1,131	1055.82	1,478	1466.20	1,986
Japan	High	14378.65	16,033	13673.19	15,197	13892.92	15,498	13607.94	15,765	14144.85	16,458	13812.77	16,083	13749.87	16,223	13895.98	16,295	14064.86	16,554	13870.27	16,384	12990.42	15,640	13099.04	15,918	13260.54	16,283	13396.09	16,493	12737.54	15,732	12441.74	15,629	12360.29	15,627	12114.11	15,410	12000.96	15,324
Kazakhstan	Upper-middle	22.87	32	20.34	28	22.87	29	31.80	46	24.22	36	24.24	46	27.17	48	24.22	41	20.73	39	31.33	54	29.91	50	31.09	57	22.29	45	49.67	84	52.46	110	90.61	152	104.52	185	171.72	267	275.58	396
Kyrgyzstan	Lower-middle	3.84	6	3.77	7	2.25	3	1.40	3	2.67	5	1.79	7	3.40	5	1.60	6	2.01	7	5.56	14	6.29	14	4.74	10	6.11	10	5.54	17	8.27	21	4.15	17	11.44	32	9.11	26	17.71	40
Laos	Lower-middle	0.99	3	0.86	2	4.20	8	1.48	4	2.44	10	9.29	28	10.11	25	4.42	15	6.93	26	19.25	46	13.38	34	15.57	51	13.34	52	23.86	62	17.50	71	19.86	67	18.60	62	25.99	82		
Malaysia	Upper-middle	142.69	210	129.88	198	186.72	240	169.48	239	210.16	304	281.00	396	334.02	458	365.30	511	506.60	665	741.79	946	1050.54	1,358	1670.72	2,093	1661.23	2,132	1565.64	2,144	1521.99	2,104	1633.51	2,285	1775.60	2,465	1801.18	2,471	1906.53	2,624
Maldives	Upper-middle	0.50	1	0.50	2	0.00	0	0.33	1	0.00	0	1.40	3	0.00	0	0.52	2	0.00	0	1.00	1	0.00	0	0.43	2	0.35	2	0.17	2	1.64	5	0.82	5	1.34	3	1.87	5	0.80	3
Mongolia	Lower-middle	4.33	9	8.14	18	2.85	7	6.53	23	3.97	19	7.14	25	7.62	28	12.70	39	19.49	53	18.04	59	20.25	59	14.81	52	21.56	66	22.31	71	24.00	73	21.26	77	30.02	106	28.26	90	30.53	99
Nepal	Low	14.01	32	22.35	46	18.36	43	25.46	58	21.69	50	35.21	74	30.74	70	50.51	107	35.18	81	31.56	80	50.48	122	41.27	114	47.90	137	65.07	157	88.04	207	103.61	223	122.90	279	134.74	290		
North Korea	Low	0.00	0	0.08	1	0.00	0	0.33	1	0.13	1	0.92	4	0.13	1	0.90	4	1.71	2	1.28	7	1.52	5	0.29	2	0.55	4	0.07	1	0.37	1	1.97	10	2.26	9	0.86	5	2.44	6
Pakistan	Lower-middle	194.50	237	221.17	256	272.37	318	287.65	347	337.91	399	368.60	438	635.68	719	666.84	784	831.39	972	956.50	1,137	1206.16	1,430	1520.79	1,789	1510.89	1,809	1563.50	1,973	1529.74	2,056	1595.42	2,147	1573.35	2,184	1776.89	2,539	1886.13	2,747
Papua New Guinea	Lower-middle	13.25	25	36.79	53	15.74	31	24.86	45	15.40	37	9.59	25	16.10	32	17.09	40	15.29	31	20.66	50	15.24	38	16.79	53	20.72	64	25.39	84	20.72	65	17.36	44	14.43	55	17.68	62		
Philippines	Lower-middle	108.10	193	106.79	162	115.15	184	107.85	209	97.36	181	118.92	214	108.47	228	108.38	223	120.74	243	124.36	254	129.96	277	197.57	377	135.01	314	220.46	424	171.21	391	292.29	522	254.97	503	269.82	556	274.08	546
Singapore	High	278.14	370	274.64	359	351.75	464	374.76	535	517.62	743	609.34	883	636.47	947	699.25	1,070	697.55	1,095	791.97	1,269	885.55	1,515	924.90	1,585	1012.84	1,813	1082.97	1,924	1057.99	1,959	1041.44	1,975	1073.33	2,060	1090.11	2,112	1043.01	2,020
South Korea	High	2005.40	2,317	2138.98	2,456	2389.55	2,748	2826.69	3,350	3216.03	3,849	3323.39	4,005	3659.93	4,381	4588.87	5,384	5264.16	6,121	6336.64	6,280	5927.06	7,020	6700.62	7,922	7000.99	8,321	7488.16	8,834	7864.41	9,257	7981.16	9,454	7807.34	9,285	7744.68	9,232	8125.47	9,625
Sri Lanka	Lower-middle	42.18	59	48.75	61	42.96	65	51.39	85	51.79	87	64.39	102	57.02	95	77.33	132	81.95	131	80.81	131	74.93	144	96.00	153	100.08	170	94.32	207	125.42	207	134.89	221	160.21	261	190.55	326	194.37	346
Taiwan	High	1013.21	1,169	1153.39	1,331	1225.35	1,374	1269.30	1,493	1621.65	1,867	1646.96	1,942	1855.92	2,169	1942.30	2,287	2217.95	2,655	2341.66	2,811	2488.86	2,995	2752.67	3,305	2777.46	3,372	2844.64	3,486	2754.15	3,420	2528.45	3,226	2439.30	3,177	2454.31	3,259	2369.85	3,161
Tajikistan	Low	6.33	7	3.07	4	4.06	8	1.90	3	1.35	3	2.00	3	3.47	6	1.36	3	3.53	7	0.59	3	3.25	8	5.73	14	3.23	9	3.23	9	4.15	9	4.72	14	4.76	17	6.56	22		
Thailand	Upper-middle	265.98	425	250.91	387	329.29	518	391.55	660	402.18	686	565.24	883	904.71	1,316	1007.17	1,461	1106.18	1,558	1097.29	1,606	1252.13	1,829	1267.82	1,850	1381.71	2,045	1371.62	2,025	1539.85	2,310	1518.54	2,298	1535.48	2,401	1769.81	2,652	1967.40	2,881
Timor-Leste	Lower-middle	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.50	1	0.67	2	0.20	1	0.13	1	0.00	0	0.92	2	0.10	1	1.83	5	1.85	5	3.10	7	0.20	2	2.31	8	4.84	13	2.99	12
Turkmenistan	Upper-middle	1.50	3	0.95	4	1.25	2	0.33	1	0.67	1	0.53	2	0.23	2	2.20	3	0.25	1	0.00	0	1.13	3	0.20	1	0.10	1	0.00	1	2.26	4	0.01	1	3.14	4	1.09	2		
Uzbekistan	Lower-middle	94.96	111	98.87	116	88.00	108	77.46	98	68.30	83	52.54	74	55.63	88	49.71	79	50.60	80	47.11	73	59.50	82	62.83	91	53.17	78	47.91	72	43.47	82	32.94	56	45.33	74	47.64	91	34.41	87
Vietnam	Lower-middle	30.91	68	34.70	80	40.27	94	44.47	121	45.74	141	63.89	175	69.22	187	79.76	229	104.59	276	102.77	274	129.49	346	157.64	385	188.99	471	220.73	579	249.93	616	303.36	700	329.79	797	381.96	916	459.34	1,098
Australia and Oceania		5108.56	6,246	5058.82	6,118	5152.67	6,379	5052.41	6,703	5250.40	7,130	5546.26	7,555	6079.13	8,201	6262.92	8,597	6589.12	9,152	6800.09	9,552	7016.74	10,074	7425.49	10,761	7716.27	11,546	8549.88	12,746	8787.61	13,324	8751.61	13,527	9108.56	14,222	8602.79	13,753	8839.70	14,392
Australia	High	4223.57	5,224	4202.66	5,098	4297.27	5,350	4187.91	5,600	4384.80	5,970	4583.83	6,305	5111.36	6,938	5145.88	7,192	5503.37	7,758	5686.10	8,115	5831.58	8,545	6237.93	9,218	6431.41	9,872	7198.35	10,968	7468.27	11,522	7419.20	11,732	7784.47	12,382	7340.39	11,952	7602.62	12,667
Cook Islands	na	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.29	1	0.67	1	0.00	0	0.00	0	0.29	1																		

TABLE SSA-5

S&E articles in biological and biomedical sciences, by region, country, or economy: 2000–18

(Number)

Region, country, or economy	Economies by income status	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
		Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count	Fractional count	Whole count		
Marshall Islands	Upper-middle	0.00	0	0.00	0	0.00	0	0.00	0	0.83	4	0.50	1	1.38	2	0.25	1	0.00	0	0.00	0	0.00	0	0.20	1	0.07	1	0.33	1	0.17	1	0.11	1	0.56	2	0.10	1	0.13	1
Micronesia, Federated States of	Lower-middle	1.29	3	0.42	2	0.00	0	0.58	3	1.10	4	1.42	6	0.62	4	2.92	7	1.20	2	0.53	4	4.29	7	2.00	2	2.05	5	0.73	6	2.14	5	1.52	5	1.80	7	0.91	4		
Nauru	Upper-middle	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.22	1	0.00	0	0.00	0
New Zealand	High	879.44	1,111	846.60	1,078	845.07	1,112	854.73	1,226	854.27	1,294	949.33	1,437	950.26	1,428	1092.53	1,588	1073.25	1,628	1094.40	1,663	1165.71	1,775	1171.53	1,837	1263.46	1,972	1330.97	2,129	1299.04	2,165	1294.94	2,185	1270.63	2,192	1234.23	2,196	1209.64	2,182
Niue	na	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.11	1	0.00	0	0.00	0		
Palau	High	0.00	0	0.92	4	0.50	2	0.13	1	0.98	3	1.70	3	1.37	4	0.49	2	0.42	2	1.67	3	1.56	3	0.58	2	1.19	4	1.34	3	1.33	2	2.58	7	0.45	3	1.06	4	1.34	3
Samoa	Upper-middle	1.00	1	0.72	2	0.00	0	1.21	3	0.52	2	0.33	1	0.98	3	1.00	1	0.90	5	2.76	13	1.28	5	1.28	6	1.33	6	0.43	3	1.20	6	2.84	7	4.45	11	2.27	6	3.18	9
Solomon Islands	Lower-middle	0.38	3	0.50	1	0.00	0	0.84	4	0.00	0	0.00	0	1.00	2	1.01	5	0.25	1	0.50	1	0.73	3	1.45	6	1.71	4	1.48	5	2.12	7	4.93	18	5.52	14	3.69	17	3.83	15
Tonga	Upper-middle	0.25	1	0.00	0	0.33	1	0.71	3	1.03	4	0.00	0	0.14	1	0.20	1	0.07	1	0.55	2	0.40	2	0.17	1	0.57	2	0.00	0	0.00	0	1.65	5	0.20	2	0.17	1	0.18	2
Tuvalu	Upper-middle	0.00	0	0.00	0	0.00	0	0.60	1	0.11	1	0.00	0	0.29	1	0.12	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
Vanuatu	Lower-middle	0.00	0	1.00	1	1.00	1	0.14	1	1.31	5	1.32	5	1.85	6	1.33	4	2.01	5	1.32	6	1.23	3	1.35	5	2.25	5	1.75	5	5.30	14	6.08	16	3.99	9	3.63	10		
Unassigned	na	706.91	1,678	783.32	1,663	413.59	1,094	1297.78	2,697	726.72	1,600	888.10	1,820	777.39	1,690	641.73	1,504	818.00	1,914	793.30	1,731	1511.77	2,683	1583.68	2,743	1474.03	2,471	772.62	1,532	401.20	1,105	270.71	1,060	532.54	1,644	467.13	1,921	557.91	2,435

na = not applicable; country data do not exist.

EU = European Union.

^a Beginning in 2006, Serbia and Montenegro represented individual countries.^b Serbia and Montenegro represented a single country for data purposes from 1992 to 2006. Its economic status is that of 2005.^c West Bank and Gaza Strip are separate entities in this list, but are grouped in the World Bank Lending Groups classification list. Here, the economic status of the group is applied to both individual regions.**Note(s)**

Article counts refer to publications from selected journals and conference papers in S&E from Scopus. Articles are classified by their year of publication and are assigned to a region, country, or economy on the basis of the institutional address(es) of author(s) listed in the article. Articles are credited either on a fractional- or whole-count basis. Fractional counts of articles are those produced by authors from different countries, where each country receives fractional credit on the basis of the proportion of its participating authors. For the fractional-count basis, the sum of the regions, countries, or economies may not add to the world total because of rounding. In whole counting, each region, country, or economy with a collaborating author on an article is credited with one count. The sum of the whole count for regions, countries, or economies does not add to the world total because of multiple counts of coauthored publications. Some publications have incomplete address information for coauthored publications in the Scopus database. The unassigned category count is the sum of fractional or whole counts for publications that cannot be assigned to a region, country, or economy. For more information on the 2019 World Bank Country and Lending Groups classification of income groups, see <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>, accessed June 2019.

Source(s)

National Center for Science and Engineering Statistics, National Science Foundation; Science-Matrix; Elsevier, Scopus abstract and citation database, accessed June 2019.