

APPENDIX TABLE 5-34

S&E articles in geosciences, by region, country, or economy: 2003–16

(Number)

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
World	60,921.0	69,638.0	77,464.0	81,174.0	85,757.0	90,405.0	100,155.0	101,782.0	112,871.0	109,738.0	121,069.0	126,212.0	125,460.0	131,792.0
North America	18,680.1	22,675.4	24,148.4	23,279.9	24,403.5	23,698.2	23,872.8	23,898.7	24,579.0	24,767.2	26,104.1	27,267.7	25,346.9	25,414.4
Canada	2,625.0	2,903.2	3,260.5	3,397.1	3,486.2	3,513.9	3,544.2	3,511.3	3,702.2	3,737.5	3,807.1	3,933.7	3,848.6	3,821.4
Greenland	2.4	5.0	7.1	5.5	8.8	7.6	4.3	9.7	10.1	10.3	10.6	12.0	15.6	9.6
Mexico	644.9	673.9	654.1	691.5	722.5	759.7	823.7	865.8	865.3	906.8	999.4	996.8	997.6	1,057.8
United States	15,407.7	19,093.2	20,226.7	19,185.8	20,186.1	19,417.0	19,500.6	19,512.0	20,001.3	20,112.5	21,286.9	22,325.2	20,485.0	20,525.7
Central America and Caribbean	151.5	186.6	178.6	205.4	152.9	204.2	210.4	216.8	178.0	204.8	169.3	223.6	194.9	189.7
Antigua and Barbuda	0.0	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.3
Bahamas, The	0.3	0.5	1.5	0.5	3.0	1.3	1.1	1.5	1.9	1.9	2.1	4.8	4.1	2.6
Barbados	2.3	3.9	5.4	2.3	1.9	1.6	3.6	0.8	4.5	9.1	4.1	6.8	3.6	5.9
Belize	1.1	0.7	3.5	0.8	0.3	1.5	1.7	1.1	0.4	2.3	2.7	0.7	1.2	1.2
Costa Rica	34.2	75.6	26.5	64.0	37.5	41.6	63.7	58.1	41.8	64.1	33.3	64.1	65.4	61.9
Cuba	26.8	21.0	28.2	39.9	24.7	33.6	33.3	42.9	39.5	33.6	35.9	39.9	27.0	32.0
Dominica	1.5	0.0	1.3	0.8	0.0	1.0	0.0	2.4	0.0	1.4	0.6	0.5	0.0	0.3
Dominican Republic	1.5	0.1	1.6	2.6	0.9	1.7	0.4	1.0	1.8	0.7	2.6	2.5	1.8	1.0
El Salvador	1.8	11.4	0.3	4.9	2.8	2.1	1.7	1.9	6.2	1.8	2.7	2.7	1.8	3.1



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Grenada	0.0	0.4	0.0	0.0	0.5	0.2	0.0	0.0	0.4	0.6	0.0	2.0	0.4	0.8
Guatemala	1.6	3.9	3.4	2.4	1.1	1.3	0.9	1.8	2.5	2.5	2.7	0.7	2.1	2.1
Haiti	0.0	0.0	0.0	0.0	1.2	0.1	1.5	1.7	2.1	0.3	3.3	2.9	0.6	3.1
Honduras	0.5	1.7	0.6	1.8	1.2	0.5	1.7	1.4	0.9	2.4	1.2	3.2	1.3	0.9
Jamaica	26.0	13.1	14.8	8.0	7.8	15.1	11.9	11.6	10.7	6.3	8.3	15.5	13.3	8.0
Nicaragua	3.7	2.9	3.4	4.9	3.3	10.4	3.7	2.5	2.8	3.6	3.3	4.7	2.6	2.7
Panama	7.5	5.2	15.4	9.3	12.5	19.0	16.9	18.6	11.5	22.6	17.9	17.2	14.3	12.5
Puerto Rico	37.6	30.7	46.0	45.9	39.2	51.9	55.5	51.0	39.1	35.9	36.5	44.6	40.4	38.7
Saint Kitts and Nevis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.4	0.2	0.6	0.9
Saint Lucia	0.1	0.0	0.1	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Saint Vincent and the Grenadines	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.3	0.0	0.0	0.2	0.0	0.0	0.0
Trinidad and Tobago	5.1	15.3	26.3	17.0	14.7	21.2	12.6	18.3	11.4	14.9	10.4	10.8	13.8	11.8
South America	1,535.5	1,763.6	2,247.5	2,644.3	2,712.1	3,014.9	3,513.1	3,458.2	3,789.2	3,941.3	4,589.3	4,736.9	4,628.1	5,173.4
Argentina	388.5	459.6	516.4	512.8	549.6	641.2	742.7	728.4	778.9	815.8	858.4	901.7	891.6	878.7
Bolivia	6.5	4.2	9.1	9.4	10.6	10.6	9.1	7.9	7.6	13.6	9.5	15.2	11.1	12.9
Brazil	792.7	903.0	1,266.0	1,562.0	1,641.8	1,699.0	2,070.0	2,002.6	2,243.8	2,305.0	2,887.7	2,841.4	2,800.4	3,222.2
Chile	202.6	232.1	220.8	285.2	303.6	339.4	345.4	360.4	388.5	424.5	397.5	486.7	488.7	497.0
Colombia	34.3	44.9	51.7	104.6	88.1	148.0	191.8	213.0	195.2	197.0	245.5	285.0	222.7	304.2
Ecuador	16.5	12.6	16.4	15.3	16.9	24.7	14.6	19.5	20.3	21.6	27.9	32.2	48.8	83.3



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Guyana	0.0	0.0	0.0	1.4	0.7	0.0	0.6	1.1	0.3	1.9	0.8	3.0	0.0	0.4
Paraguay	0.3	1.2	1.3	4.5	0.0	0.5	1.6	0.2	0.5	4.1	0.8	3.0	1.3	0.6
Peru	10.6	23.1	24.3	36.2	26.5	48.7	36.1	32.4	43.2	41.0	47.1	53.1	49.6	52.6
Suriname	0.2	1.1	0.3	2.2	3.1	1.2	1.1	0.0	0.7	2.9	1.3	0.1	0.5	3.6
Uruguay	25.2	28.2	37.9	32.4	21.4	39.6	43.4	34.5	44.7	54.2	42.1	50.5	56.5	56.0
Venezuela	58.0	53.7	103.2	78.3	49.9	62.0	56.5	58.2	65.5	59.8	70.7	65.0	56.8	61.9
Europe	24,133.5	25,155.1	27,738.7	29,449.3	30,314.1	32,548.1	34,810.3	35,672.4	37,993.8	39,137.3	41,697.6	42,529.4	42,345.1	42,788.1
EU	19,579.0	20,231.6	22,492.4	23,922.1	24,398.6	26,178.4	28,082.0	28,547.2	30,288.3	31,634.3	33,294.1	33,862.1	33,250.5	33,488.3
Austria	329.0	361.7	369.4	403.8	454.5	471.6	524.8	503.1	575.5	582.1	654.7	636.3	598.3	658.9
Belgium	462.2	462.5	522.7	551.4	556.7	609.6	644.5	587.4	664.3	648.1	725.4	702.7	706.5	731.4
Bulgaria	59.8	58.4	78.9	89.0	93.1	110.3	101.6	117.8	145.2	158.2	144.9	164.7	169.1	103.2
Croatia	195.2	193.4	266.3	218.9	225.1	234.6	304.7	318.5	350.8	357.1	361.8	288.8	336.6	291.0
Cyprus	6.5	7.2	7.8	6.3	13.6	22.9	28.2	38.8	33.9	29.6	45.0	56.9	44.6	58.2
Czech Republic	351.4	338.1	353.1	384.9	474.9	459.0	544.3	580.8	650.6	739.8	791.5	996.5	944.8	880.4
Denmark	516.5	493.8	504.7	586.6	532.1	567.4	567.2	584.0	648.8	752.6	662.1	675.4	704.0	692.4
Estonia	81.5	103.1	86.3	98.9	130.9	161.6	133.3	177.9	177.3	180.4	146.6	156.5	115.6	124.8
Finland	441.3	471.3	511.0	492.9	532.6	544.0	507.8	488.0	556.7	577.9	581.2	620.2	642.0	634.3
France	2,726.9	2,735.8	2,931.4	3,163.0	3,149.6	3,300.9	3,722.3	3,714.3	3,768.3	3,714.7	4,136.8	4,113.8	3,663.4	3,883.8
Germany	3,061.8	3,189.6	3,725.8	3,631.8	3,633.7	3,901.9	3,949.5	4,234.0	4,183.9	4,556.1	4,539.8	4,631.1	4,653.3	4,834.1



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Greece	448.3	508.9	533.2	640.6	624.8	670.5	751.5	771.3	680.9	771.1	803.2	826.2	801.9	796.0
Hungary	216.8	254.2	255.4	281.4	263.0	258.0	325.3	314.7	340.6	351.5	308.5	378.4	374.8	336.1
Ireland	144.9	136.1	167.1	196.3	206.7	209.7	236.1	227.9	287.3	271.9	276.4	257.8	223.8	260.5
Italy	2,145.0	2,154.8	2,299.1	2,610.4	2,652.2	3,110.2	3,105.0	3,216.4	3,228.0	3,700.8	3,880.1	3,463.9	3,554.0	3,933.4
Latvia	8.5	10.0	33.2	11.2	15.1	28.8	73.5	27.6	118.5	57.2	93.6	51.5	139.2	42.5
Lithuania	28.7	131.1	127.6	130.0	137.2	237.4	135.8	128.8	329.1	116.4	109.5	116.6	117.1	126.1
Luxembourg	1.9	10.6	15.5	12.0	14.8	12.7	21.4	21.8	21.8	25.6	33.3	34.1	31.1	28.7
Malta	9.9	2.8	6.3	5.0	4.5	10.3	8.7	9.1	17.5	11.6	11.4	6.3	17.4	18.6
Netherlands	929.3	931.8	1,070.6	1,229.9	1,159.7	1,135.1	1,367.3	1,261.3	1,357.2	1,369.8	1,442.3	1,548.5	1,364.0	1,418.8
Poland	950.5	926.1	1,052.9	1,032.0	1,205.0	1,493.0	1,764.5	1,584.0	1,965.4	1,747.4	2,156.5	2,108.3	2,395.9	2,533.0
Portugal	344.4	360.8	448.7	574.0	631.1	715.7	800.6	716.8	909.7	905.9	1,017.8	1,245.9	1,144.1	1,092.5
Romania	56.1	44.6	68.3	81.0	94.6	248.5	427.5	532.6	632.4	831.6	914.2	857.2	1,075.9	448.0
Slovakia	106.0	111.7	121.4	114.4	173.9	201.5	194.1	200.8	283.9	303.5	374.5	488.6	432.5	355.2
Slovenia	58.8	62.0	110.0	98.0	132.6	109.4	142.4	137.4	136.4	153.8	140.2	170.9	208.0	191.0
Spain	1,424.7	1,465.9	1,743.4	2,074.7	2,082.0	2,300.7	2,451.1	2,584.4	2,783.1	2,974.2	3,077.7	3,274.7	2,985.1	3,163.3
Sweden	812.1	933.4	976.7	958.5	802.9	805.6	794.7	857.4	878.3	919.5	999.6	1,036.2	1,004.0	1,024.1
United Kingdom	3,661.2	3,771.8	4,105.6	4,245.3	4,402.0	4,247.4	4,454.2	4,610.3	4,563.0	4,826.0	4,865.8	4,954.1	4,803.6	4,828.2
Other Europe	4,554.4	4,923.6	5,246.3	5,527.2	5,915.5	6,369.7	6,728.4	7,125.1	7,705.5	7,503.0	8,403.4	8,667.2	9,094.6	9,299.9
Albania	3.7	4.7	8.0	4.9	4.3	17.8	20.1	28.2	45.7	39.1	25.2	36.0	34.3	18.6



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Andorra	1.2	0.5	0.3	0.8	0.4	0.0	0.3	0.4	0.0	0.8	3.8	0.6	0.5	0.4
Belarus	11.8	14.2	13.2	16.0	14.0	18.8	11.7	12.8	20.4	13.2	27.7	43.0	17.8	15.7
Bosnia and Herzegovina	0.8	0.6	5.7	3.9	5.8	4.9	8.2	15.7	17.8	15.2	15.0	10.7	18.8	15.0
Holy See (Vatican City)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0
Iceland	55.5	61.0	89.5	70.5	76.6	63.4	74.4	82.9	71.6	95.1	72.1	98.8	88.8	91.6
Kosovo	0.0	0.0	0.0	0.0	0.0	4.1	7.0	2.9	13.5	11.7	11.1	16.8	19.2	11.5
Liechtenstein	0.0	5.5	0.1	0.0	0.0	0.0	0.3	0.3	1.1	0.1	0.3	0.0	1.6	0.0
Macedonia	1.0	4.5	9.5	13.7	11.5	10.9	15.8	19.0	28.9	28.7	37.8	27.7	28.7	24.5
Moldova	0.2	1.9	2.0	2.9	3.6	3.3	2.9	2.1	8.7	8.0	14.6	8.0	2.0	7.7
Monaco	12.7	16.5	12.5	10.1	10.2	15.4	19.6	13.3	14.6	6.5	8.5	10.0	8.2	10.7
Montenegro ^a	na	na	na	na	3.3	1.8	4.3	4.3	5.7	5.7	9.4	15.2	11.4	17.5
Norway	728.0	799.6	844.4	907.2	986.5	985.7	1,180.4	1,107.1	1,313.5	1,282.5	1,388.9	1,390.4	1,297.3	1,371.7
Russia	2,241.2	2,311.9	2,386.9	2,400.7	2,468.4	2,674.9	2,570.7	2,972.3	2,949.8	2,762.4	3,231.9	3,627.7	3,938.2	4,167.2
San Marino	0.0	0.0	0.0	0.0	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Serbia ^a	na	na	na	na	81.1	81.1	110.9	152.5	213.6	238.3	243.7	255.2	263.0	293.3
Serbia and Montenegro ^b	26.8	40.3	34.0	56.9	na	na	na	na	na	na	na	na	na	na
Switzerland	649.7	677.6	776.7	888.6	869.7	943.8	1,022.1	972.7	1,110.5	1,137.4	1,299.5	1,209.1	1,184.1	1,176.4
Turkey	617.0	769.3	827.9	945.7	1,155.9	1,291.6	1,423.7	1,405.6	1,507.8	1,392.0	1,504.3	1,495.0	1,836.3	1,714.6
Ukraine	204.9	215.6	235.8	205.2	223.5	252.2	256.1	333.0	382.2	466.4	509.4	422.9	344.3	363.2

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Middle East	656.3	771.1	863.2	1,111.0	1,277.0	1,610.9	2,123.0	2,230.6	2,538.1	2,728.9	3,226.7	3,672.0	3,775.3	4,241.3
Armenia	5.4	5.4	6.2	9.4	2.8	4.4	8.3	9.4	12.8	19.8	19.4	7.0	9.7	17.9
Azerbaijan	6.7	10.1	15.2	8.9	8.2	35.0	17.9	19.1	22.9	18.0	19.7	16.0	19.4	19.9
Bahrain	4.9	3.6	6.8	4.8	4.4	2.6	9.2	8.9	5.3	6.0	7.4	9.0	4.0	5.7
Gaza Strip	3.0	5.9	4.1	5.3	0.7	4.3	10.0	4.9	8.5	2.3	5.3	8.5	4.8	8.7
Georgia	16.9	18.2	7.8	18.7	21.6	16.0	23.1	34.5	22.5	22.3	37.0	23.4	20.8	25.9
Iran	126.9	171.0	258.1	406.5	521.1	716.5	1,065.7	1,251.8	1,480.4	1,578.9	1,747.7	1,974.4	2,195.7	2,455.8
Iraq	3.0	1.3	3.4	11.3	6.7	21.4	27.1	38.6	48.1	44.5	92.9	78.9	136.6	116.3
Israel	270.6	310.8	292.5	354.8	329.1	360.7	349.7	336.1	347.7	303.1	323.3	388.5	353.8	402.8
Jordan	45.3	47.7	60.5	67.3	107.7	115.8	135.9	89.7	81.5	97.2	122.2	131.2	156.1	147.6
Kuwait	31.7	35.1	29.8	39.3	51.2	42.6	69.8	44.5	63.6	81.3	108.1	77.9	63.9	54.3
Lebanon	23.8	26.8	27.4	33.2	35.0	24.4	31.0	24.7	25.0	31.2	36.8	49.3	48.0	50.4
Oman	17.4	24.5	27.2	28.7	38.6	39.1	58.3	61.3	58.0	41.2	61.8	73.7	55.8	75.4
Qatar	6.9	2.3	6.1	2.9	9.3	9.2	56.9	18.6	21.1	23.3	26.9	139.0	37.9	70.1
Saudi Arabia	45.4	67.9	55.7	70.7	68.0	94.5	164.3	176.9	236.4	313.6	482.1	546.6	502.9	612.4
Syria	9.5	7.1	11.3	8.2	11.7	9.5	6.2	14.9	18.3	17.0	13.8	21.7	20.4	26.0
United Arab Emirates	31.6	26.4	40.1	32.0	50.1	102.5	62.6	70.0	60.3	104.9	97.2	104.1	121.4	125.1
West Bank	4.6	6.5	6.0	6.7	7.8	8.1	17.0	17.1	14.3	10.8	6.9	7.5	10.7	10.3
Yemen	2.7	0.7	4.8	2.4	3.1	4.1	10.1	9.6	11.4	13.6	17.9	15.2	13.3	16.6



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Africa	1,055.0	1,159.1	1,235.3	1,355.1	1,461.5	1,569.5	2,256.7	2,136.7	2,075.4	2,468.7	2,431.2	2,539.8	2,802.6	3,294.4
Algeria	38.2	43.0	66.4	50.3	45.5	70.5	129.7	114.4	103.6	156.1	209.4	224.0	237.3	373.3
Angola	3.2	1.6	1.6	1.6	2.5	3.2	2.5	4.2	6.9	7.6	4.9	8.3	3.2	4.5
Benin	3.7	0.9	4.1	3.0	5.3	3.2	6.9	6.5	2.5	8.2	12.6	10.9	10.2	13.1
Botswana	11.8	13.5	17.7	30.5	26.4	23.7	16.3	22.0	15.9	15.3	10.6	18.0	17.0	9.8
Burkina Faso	8.0	4.8	2.4	4.4	3.6	4.4	8.1	7.1	7.8	8.4	19.9	11.1	16.1	10.6
Burundi	1.0	0.1	0.6	0.3	0.6	1.1	0.0	1.9	1.2	0.0	2.3	3.6	0.3	0.1
Cameroon	16.7	13.8	14.3	25.3	17.1	22.1	31.8	42.3	28.0	41.7	42.6	41.3	51.8	38.3
Cape Verde	1.2	0.3	0.2	1.0	0.5	0.3	0.7	1.1	0.2	0.9	2.0	4.3	4.0	2.2
Central African Republic	0.0	0.5	0.3	0.0	1.5	2.2	0.1	1.4	0.8	1.4	1.2	1.1	0.3	0.5
Chad	0.0	1.0	1.8	1.3	1.1	1.5	1.5	2.4	0.9	1.0	1.2	0.9	0.4	0.9
Comoros	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.9	0.0	8.9	0.0	0.2	0.5
Congo, Democratic Republic of the	0.8	0.9	3.2	3.5	4.3	1.8	3.4	3.2	3.6	2.0	6.1	8.3	7.3	10.6
Congo, Republic of the	2.6	1.3	1.3	1.0	1.4	3.3	2.1	1.8	4.7	2.7	6.9	5.6	2.2	4.3
Côte d'Ivoire	6.0	3.4	6.0	7.0	8.5	10.7	14.4	12.5	11.9	13.3	9.1	15.9	13.9	11.7
Djibouti	0.0	0.5	0.0	0.5	0.5	0.0	0.2	0.7	0.7	0.4	1.0	1.3	1.5	0.3
Egypt	184.2	162.6	173.4	198.8	243.4	249.9	444.2	426.2	420.8	697.9	458.3	439.0	594.9	660.0
Equatorial Guinea	0.0	0.0	0.8	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.4	0.5	0.0
Eritrea	2.8	5.5	2.2	6.4	3.8	0.7	1.0	2.5	0.3	0.8	1.0	0.3	2.0	0.2



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Ethiopia	11.8	14.9	15.8	28.6	30.1	26.8	45.8	44.8	30.9	41.3	54.8	67.0	70.3	75.2
Gabon	1.8	0.0	1.7	0.7	0.3	1.9	1.0	0.4	0.6	1.6	4.8	3.6	3.2	3.0
Gambia, The	0.3	1.1	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.7	1.0	0.9	1.6	0.6
Ghana	10.1	13.8	12.8	22.3	20.5	61.4	57.7	68.1	49.5	76.5	56.8	59.7	75.1	82.3
Guinea	1.1	0.2	0.2	0.0	0.0	0.3	1.1	0.8	1.4	0.1	0.0	0.3	0.2	0.6
Guinea-Bissau	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.0	0.6	0.1	0.5
Kenya	41.8	27.3	38.1	27.5	52.2	27.9	59.8	54.2	65.2	56.1	92.5	68.9	63.7	68.6
Lesotho	0.7	0.0	0.1	0.2	0.5	0.6	1.0	0.5	1.0	0.0	0.0	1.3	0.2	1.0
Liberia	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	0.0	0.0	0.0	0.0	0.1	1.1
Libya	2.3	4.5	11.2	7.3	8.3	6.5	20.2	28.5	10.3	6.6	14.1	6.3	20.1	17.8
Madagascar	5.0	2.7	0.6	3.3	3.5	3.0	19.2	5.8	4.7	4.2	5.0	6.3	6.0	7.6
Malawi	4.0	4.3	8.1	8.2	8.9	9.9	6.2	7.4	16.1	7.2	10.3	8.5	6.9	10.5
Mali	1.5	0.6	0.0	1.5	1.4	1.8	5.7	2.1	2.0	1.7	3.5	1.8	1.1	4.0
Mauritania	0.5	1.4	2.4	1.0	2.3	0.9	1.1	1.0	0.4	0.7	2.1	2.5	0.4	2.7
Mauritius	6.2	6.3	6.0	3.0	4.8	7.5	1.0	7.1	7.6	7.7	9.3	9.3	7.3	5.7
Morocco	56.8	73.8	78.5	79.6	66.1	96.6	90.5	84.0	72.4	84.5	88.1	110.2	122.5	145.5
Mozambique	3.2	6.0	8.4	6.4	4.4	7.8	9.8	5.9	8.1	6.6	3.3	14.4	8.7	6.8
Namibia	6.8	9.4	13.1	7.9	11.5	10.3	9.5	5.6	4.1	8.1	14.2	8.5	12.6	15.3
Niger	3.4	0.8	2.7	4.0	2.8	5.0	16.9	6.3	2.6	4.3	5.6	5.1	5.9	3.6



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nigeria	84.3	129.8	132.0	157.0	172.8	216.3	319.3	323.5	275.6	260.6	251.7	237.3	294.4	374.9
Rwanda	0.0	2.0	0.0	0.5	1.2	4.0	4.7	9.5	5.8	5.6	1.6	2.8	2.7	4.8
São Tomé and Príncipe	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Senegal	12.6	12.7	14.1	9.6	5.5	11.8	12.0	13.0	15.3	20.8	18.5	15.1	14.6	21.4
Seychelles	0.8	1.9	0.5	3.2	4.9	3.4	1.1	2.0	1.2	2.9	5.7	3.1	5.8	1.3
Sierra Leone	0.0	0.0	0.0	0.0	0.0	0.3	1.5	0.5	1.0	2.0	1.6	1.0	1.1	1.6
Somalia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.8	0.0
South Africa	398.4	468.6	432.4	493.0	490.5	453.4	594.2	510.2	591.2	623.2	635.7	728.0	694.4	820.4
South Sudan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.3	0.1	0.2
Sudan	3.0	2.4	4.8	4.0	6.1	3.8	13.2	27.0	25.4	9.2	10.0	9.2	9.0	42.6
Swaziland	0.7	3.5	1.2	4.7	1.4	3.0	4.3	7.3	0.2	3.4	1.0	1.0	1.3	0.6
Tanzania	28.2	31.3	34.2	25.1	33.5	26.0	25.5	27.8	28.4	27.1	22.4	33.3	38.4	36.3
Togo	0.6	1.3	1.7	1.2	0.6	0.3	2.4	0.0	1.0	1.7	1.3	1.4	1.9	2.3
Tunisia	44.7	40.6	80.0	75.8	102.6	139.4	216.9	194.9	200.9	204.3	270.4	281.5	310.3	326.4
Uganda	8.1	12.8	13.6	11.8	20.1	12.1	22.8	26.8	20.0	18.8	23.7	23.1	30.8	25.6
Western Sahara	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Zambia	6.4	4.1	11.3	7.6	3.7	6.4	10.9	3.7	3.4	6.9	6.2	8.3	6.1	8.4
Zimbabwe	29.8	27.5	13.6	25.4	35.2	22.3	17.3	17.4	17.9	15.9	16.7	25.0	22.1	34.0
Asia	11,877.0	15,012.6	17,404.8	19,694.2	21,408.7	24,158.4	29,140.7	30,418.2	36,992.0	32,082.4	38,501.7	40,507.5	41,705.5	46,001.6



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	0.0	0.0	0.0	0.2	2.3	0.8	0.4	2.9	6.9	1.2	2.7	2.0	1.4	4.0
Bangladesh	32.5	49.6	48.6	53.7	65.9	67.9	82.9	82.7	75.2	111.8	108.8	104.0	122.4	155.8
Bhutan	0.1	1.3	0.8	2.4	1.1	1.9	2.3	3.3	0.4	0.4	8.6	4.6	1.4	3.0
Brunei	14.3	2.7	2.7	1.5	3.4	3.6	2.7	2.7	1.9	14.2	8.9	11.4	12.7	22.9
Burma	1.5	2.7	2.0	1.4	3.9	4.9	3.9	1.8	7.3	4.9	3.0	8.1	6.9	7.6
Cambodia	0.8	2.8	1.2	3.1	4.5	7.8	8.3	2.4	4.4	3.4	2.1	7.6	7.9	5.3
China	5,240.6	7,851.0	9,724.0	10,880.6	12,085.2	13,860.7	17,699.0	18,774.9	24,561.2	19,119.3	24,776.9	25,968.4	27,685.6	30,314.9
India	1,744.0	1,807.7	2,123.7	2,346.7	2,768.1	2,972.1	3,393.8	3,566.2	3,779.0	4,089.9	4,270.3	4,607.6	4,652.3	5,372.5
Indonesia	37.2	34.1	47.0	43.9	59.2	58.2	88.1	85.1	136.9	180.4	172.0	221.7	225.0	395.2
Japan	3,056.7	3,156.7	3,376.7	3,708.4	3,482.8	3,981.9	3,855.5	3,687.9	4,004.1	3,700.0	3,918.4	3,866.5	3,718.1	3,623.2
Kazakhstan	15.7	11.8	16.9	14.1	16.2	19.1	20.6	36.8	50.1	31.9	58.6	112.5	101.1	167.9
Kyrgyzstan	1.9	9.0	8.0	17.2	9.3	12.1	4.2	9.6	19.3	8.1	16.5	8.9	12.2	30.0
Laos	3.2	17.4	3.6	8.9	1.3	1.6	2.0	4.8	5.5	7.1	10.5	9.5	8.0	13.5
Malaysia	79.1	75.2	108.0	163.1	198.9	305.9	574.1	643.5	755.1	887.1	979.2	1,147.4	829.7	1,004.2
Maldives	0.7	0.3	0.1	0.1	2.6	0.3	0.7	0.5	1.4	6.2	1.4	1.1	3.6	1.9
Mongolia	6.3	6.0	9.1	7.4	11.3	12.3	11.3	11.9	11.6	11.6	18.7	18.3	15.0	24.8
Nepal	9.4	14.0	27.7	20.4	23.3	19.8	18.0	19.5	22.5	24.3	27.6	41.4	44.6	45.7
North Korea	0.3	0.0	0.1	1.0	0.3	0.5	1.0	0.1	0.2	0.5	0.3	1.4	1.2	1.9
Pakistan	31.0	28.9	54.5	58.2	85.2	90.4	159.8	139.7	172.4	166.0	251.4	303.4	385.2	492.3



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Papua New Guinea	6.0	3.7	2.7	2.7	4.0	5.1	4.5	5.0	1.8	4.8	3.6	3.5	6.4	5.9
Philippines	54.0	57.4	50.8	57.2	60.9	54.3	59.7	54.2	88.4	72.3	97.2	102.0	119.1	150.1
Singapore	122.7	133.4	142.9	154.4	127.5	174.6	180.2	235.4	241.9	258.3	297.8	334.1	316.1	356.6
South Korea	617.4	837.7	794.5	971.2	1,020.3	1,122.4	1,312.6	1,398.4	1,396.6	1,658.3	1,750.7	1,905.5	1,833.0	2,058.1
Sri Lanka	26.2	27.8	25.1	18.3	61.4	35.4	41.6	30.8	37.8	33.3	41.6	56.7	57.2	65.3
Taiwan	645.9	725.4	642.6	891.4	1,024.5	1,054.8	1,227.2	1,221.0	1,202.2	1,262.3	1,198.2	1,162.2	1,013.0	1,044.7
Tajikistan	8.0	6.7	5.3	5.4	5.5	1.1	2.7	6.8	5.9	4.8	11.3	7.6	4.3	3.4
Thailand	105.3	112.3	159.9	225.8	235.6	249.4	315.9	323.4	306.0	329.0	338.9	353.8	416.3	480.7
Timor-Leste	0.0	0.0	0.3	0.5	0.5	0.0	0.0	0.0	1.2	0.4	0.3	0.7	0.5	0.4
Turkmenistan	0.2	1.0	0.1	0.1	1.0	1.0	2.0	0.6	2.5	1.4	2.2	6.2	0.2	1.4
Uzbekistan	6.1	15.3	4.5	5.8	6.6	2.9	16.5	12.3	28.1	12.3	34.4	7.1	8.7	10.2
Vietnam	10.0	20.7	21.8	29.1	35.9	35.8	49.5	54.2	64.2	76.7	89.8	122.7	96.4	138.0
Australia and Oceania	2,543.3	2,598.2	3,195.8	2,959.8	3,489.6	3,142.4	3,922.2	3,557.4	4,454.1	4,239.4	4,114.5	4,600.7	4,585.0	4,607.1
Australia	2,044.0	2,159.3	2,656.3	2,434.7	2,899.1	2,613.0	3,281.4	2,946.8	3,743.7	3,558.0	3,484.8	3,879.1	3,919.6	3,931.4
Cook Islands	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.8	0.9	0.0	1.5	0.9	0.6
Fiji	4.7	3.9	7.2	7.7	7.2	6.0	12.4	5.0	5.1	12.5	9.2	8.7	9.1	13.1
Kiribati	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.3	0.0	0.0	0.7	0.8	0.5	0.8
Marshall Islands	1.5	0.0	0.0	0.6	0.0	0.4	0.3	1.0	0.7	1.4	0.0	0.1	0.0	0.0
Micronesia, Federated States of	0.5	0.6	1.0	0.6	0.7	0.3	0.1	0.2	0.0	0.3	2.1	0.2	0.2	0.3



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nauru	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Zealand	489.1	431.7	523.7	509.5	579.1	519.8	625.0	600.8	698.9	663.9	613.3	702.9	649.2	650.6
Niue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Palau	0.5	1.0	2.5	0.8	1.6	1.5	0.6	1.0	0.6	0.0	1.9	3.1	2.3	1.3
Samoa	0.0	0.0	1.3	2.7	0.0	0.1	0.2	0.9	1.1	0.4	0.4	0.5	0.3	1.2
Solomon Islands	2.4	0.4	1.4	2.3	0.8	0.8	0.4	0.4	1.7	0.1	1.1	0.7	0.2	2.7
Tonga	0.1	0.0	0.2	0.2	0.4	0.0	0.1	0.0	0.6	0.0	0.0	0.1	1.3	0.8
Tuvalu	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.0	0.2
Vanuatu	0.5	1.2	1.7	0.7	0.0	0.3	1.4	0.9	1.1	1.8	0.6	2.1	1.5	4.2
Unassigned	288.8	316.2	451.6	475.0	537.6	458.4	305.8	193.2	271.5	168.1	234.7	134.4	76.5	82.1

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.

Note(s)

Article counts refer to publications from a selection of journals, books, and conference proceedings 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) listed in the article. Articles are credited on a fractional-count basis. The sum of the regions, countries, or economies may not add to the world total because of rounding. Some publications have incomplete address information for coauthored publications in the Scopus database. The unassigned category count is the sum of fractional counts for publications that cannot be assigned to a region, country, or economy.

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