

APPENDIX TABLE 5-28

**S&E articles in agricultural sciences, 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	21,125.0	23,059.0	24,831.0	29,010.0	33,991.0	36,553.0	38,397.0	39,896.0	42,454.0	43,885.0	48,152.0	49,469.0	51,085.0	51,140.0
North America	5,414.4	6,190.1	6,004.7	6,277.5	6,880.4	6,753.0	6,728.2	6,778.5	6,743.8	6,796.3	6,624.5	6,826.5	7,071.4	6,781.1
Canada	903.5	1,010.8	900.3	1,071.9	1,128.3	1,074.5	1,131.8	1,142.8	1,119.2	1,155.1	1,080.8	1,259.2	1,146.0	1,104.9
Greenland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.0
Mexico	167.6	203.6	227.8	247.5	310.0	359.3	405.5	457.1	604.0	534.3	567.4	604.7	582.7	591.0
United States	4,343.4	4,975.8	4,876.6	4,958.2	5,442.0	5,319.2	5,190.9	5,178.5	5,020.7	5,106.9	4,976.2	4,962.6	5,342.6	5,085.2
Central America and Caribbean	106.4	87.9	147.0	137.5	133.6	159.5	111.4	119.7	161.6	145.0	131.0	151.8	138.7	123.6
Antigua and Barbuda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bahamas, The	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Barbados	0.0	4.0	0.6	0.0	0.3	0.5	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0
Belize	0.0	0.0	0.3	0.0	0.0	0.1	1.8	2.8	0.0	0.0	0.0	0.1	1.1	0.0
Costa Rica	4.0	6.2	13.8	9.1	8.7	13.5	9.1	8.3	9.4	16.6	8.5	14.9	10.0	17.4
Cuba	65.3	54.6	78.8	71.6	71.8	95.7	74.0	47.8	86.2	82.4	79.9	73.6	78.7	64.3
Dominica	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.7
Dominican Republic	0.4	0.2	0.1	0.1	0.0	1.0	0.5	0.9	1.7	0.6	1.3	1.7	1.5	1.5
El Salvador	0.8	0.0	0.3	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	2.0	0.0



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Grenada	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.0	2.0	0.0	0.7	1.3	0.0	1.3
Guatemala	0.3	2.6	1.1	2.9	0.4	0.2	1.0	2.2	1.0	0.9	1.7	2.4	2.6	2.0
Haiti	0.0	0.3	0.1	0.0	0.0	0.3	0.0	0.0	0.2	0.4	0.0	0.6	0.2	1.6
Honduras	3.2	1.1	0.9	1.9	0.5	2.5	0.7	2.1	0.7	0.5	0.3	1.1	1.6	0.2
Jamaica	2.7	3.3	4.4	3.7	5.0	7.3	3.6	1.9	5.5	5.2	2.1	6.5	1.9	2.1
Nicaragua	0.3	1.3	2.1	1.2	0.5	1.3	1.3	1.0	2.1	1.5	1.3	1.6	2.2	0.8
Panama	0.3	0.0	3.0	1.7	0.8	1.2	2.9	3.9	3.2	1.7	3.3	5.5	3.1	2.7
Puerto Rico	22.0	10.0	23.7	30.3	27.2	27.0	6.2	38.6	33.0	16.4	23.3	24.1	21.1	20.0
Saint Kitts and Nevis	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.2	0.1	0.0	0.1	0.2	0.3
Saint Lucia	0.0	0.3	0.3	0.0	0.8	0.0	0.0	0.0	1.3	0.8	0.0	0.1	0.0	0.0
Saint Vincent and the Grenadines	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Trinidad and Tobago	7.1	4.0	17.5	14.9	16.8	8.7	9.8	9.3	13.9	16.7	8.6	18.2	12.5	7.7
South America	1,194.6	1,389.6	1,522.3	2,780.2	3,234.4	4,325.2	4,850.5	5,157.2	5,480.9	5,774.4	5,923.2	6,211.9	6,200.1	6,319.8
Argentina	181.8	213.7	219.1	277.7	327.4	358.1	344.9	431.8	420.1	429.7	447.5	463.1	488.4	509.2
Bolivia	6.4	1.9	2.9	4.3	4.5	5.3	4.0	3.2	3.5	3.8	2.9	1.7	3.9	1.9
Brazil	838.7	985.6	1,094.9	2,221.7	2,560.6	3,509.9	3,885.4	4,143.7	4,453.5	4,633.7	4,810.2	4,955.3	4,992.1	4,921.3
Chile	40.7	57.2	63.4	95.4	127.6	110.0	178.3	163.3	191.1	195.0	185.6	195.5	208.2	227.4
Colombia	20.4	27.2	41.6	51.8	50.8	165.3	241.4	214.4	263.8	335.1	287.7	332.5	326.4	485.0
Ecuador	2.5	1.7	1.2	2.3	2.7	6.0	5.1	1.9	3.7	4.6	6.3	16.8	25.5	37.8



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Guyana	0.5	2.0	0.0	2.2	2.3	0.5	0.0	0.0	0.0	1.0	0.1	1.0	0.0	0.0
Paraguay	0.0	0.3	1.3	0.4	0.8	1.0	4.4	2.4	1.7	0.8	0.5	3.5	2.0	2.8
Peru	14.3	3.7	6.7	9.1	13.8	17.3	22.8	14.1	15.5	19.1	30.5	14.5	25.3	20.0
Suriname	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
Uruguay	15.2	21.4	14.9	27.5	20.8	31.4	33.9	50.0	39.6	49.8	53.2	65.0	53.9	62.0
Venezuela	74.3	74.9	76.1	87.2	123.2	120.4	130.3	132.6	88.4	101.5	98.7	163.1	74.4	52.7
Europe	7,499.8	7,930.2	8,765.1	9,639.1	10,950.0	11,656.1	12,407.3	12,217.8	12,997.4	13,759.2	14,658.8	14,314.5	14,950.6	14,786.4
EU	6,652.4	6,882.2	7,667.4	8,232.2	9,529.1	10,215.8	10,846.9	10,631.6	11,226.2	11,694.3	12,729.4	12,400.4	12,824.5	12,523.3
Austria	96.9	73.9	90.5	119.7	104.5	116.1	128.0	152.4	164.0	171.6	163.7	169.4	193.7	174.7
Belgium	228.2	253.9	285.7	297.4	344.2	320.7	324.5	333.5	313.8	348.9	400.2	426.8	427.1	409.4
Bulgaria	14.4	15.4	19.0	23.9	42.7	91.9	72.6	97.5	70.9	101.5	192.9	139.2	150.8	114.5
Croatia	44.3	51.3	95.5	61.8	150.3	180.8	223.8	125.6	200.7	192.7	148.9	171.6	176.7	151.0
Cyprus	1.8	3.6	1.7	4.0	3.4	2.1	9.4	8.7	7.4	10.5	8.5	13.8	13.2	15.4
Czech Republic	155.5	168.7	161.5	224.9	475.2	522.3	547.5	624.0	632.0	649.1	787.8	590.1	694.4	671.4
Denmark	280.3	318.5	291.0	294.7	332.0	306.0	266.7	326.2	307.1	363.0	330.4	318.4	349.0	363.4
Estonia	3.8	9.4	10.5	21.2	19.5	29.1	33.7	22.7	59.8	60.0	54.5	74.2	60.3	65.8
Finland	206.9	257.4	190.8	263.5	206.7	194.0	258.9	208.8	205.3	185.8	193.6	178.4	183.4	156.0
France	701.3	764.6	760.7	905.8	935.2	952.6	929.9	958.8	938.6	953.1	931.5	984.9	1,002.2	961.7
Germany	893.0	919.2	1,145.6	1,150.3	1,150.1	1,218.2	1,174.1	1,178.2	1,268.1	1,387.2	1,340.5	1,414.1	1,411.0	1,294.9

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Greece	178.4	166.5	230.1	275.9	297.3	296.5	286.2	283.9	248.1	282.8	267.3	276.0	258.9	241.3
Hungary	131.2	109.1	147.1	136.4	103.4	139.0	192.1	142.7	183.8	182.1	177.1	198.9	172.4	183.3
Ireland	158.8	182.9	193.2	240.9	192.5	267.9	289.2	301.8	271.0	281.4	304.9	289.7	262.2	271.2
Italy	815.2	744.8	899.3	791.0	1,332.9	1,334.8	1,518.4	1,308.3	1,332.8	1,289.4	1,817.5	1,588.1	1,749.0	1,736.0
Latvia	1.0	2.6	38.0	43.0	4.2	18.1	82.3	107.7	213.7	167.6	210.0	173.8	222.3	220.7
Lithuania	15.6	16.2	21.6	34.7	17.7	132.0	138.7	127.7	144.8	161.1	171.5	133.7	122.9	152.0
Luxembourg	0.7	0.6	0.0	0.4	1.5	1.5	3.0	5.9	7.2	8.8	11.6	9.3	5.5	10.8
Malta	0.0	0.7	0.0	0.2	0.0	0.0	0.0	0.2	0.4	0.3	1.3	1.5	4.1	4.8
Netherlands	363.6	352.4	361.1	404.6	455.3	411.4	397.4	405.1	417.5	409.5	440.3	504.3	475.1	508.1
Poland	241.2	297.9	369.3	331.0	414.7	525.2	677.4	682.6	718.8	804.9	906.6	1,051.3	1,131.9	1,164.1
Portugal	92.8	105.2	119.8	188.6	213.3	223.9	250.3	299.0	329.2	346.7	361.4	339.3	398.1	410.3
Romania	5.1	6.3	7.5	6.0	17.5	45.8	82.7	73.1	92.3	174.0	154.3	133.2	130.2	117.4
Slovakia	35.2	44.2	48.9	75.4	98.0	114.6	106.4	99.4	104.4	95.3	237.3	197.6	212.9	268.4
Slovenia	29.8	24.3	37.3	34.5	67.1	136.6	124.6	109.9	147.1	134.9	97.9	102.5	101.7	97.8
Spain	892.4	947.4	1,105.7	1,272.0	1,456.9	1,589.1	1,767.5	1,697.0	1,902.7	1,984.1	2,047.9	2,011.9	1,986.2	1,808.1
Sweden	201.6	215.4	228.8	194.1	220.9	198.3	196.0	183.6	208.1	219.3	212.7	201.7	215.9	200.4
United Kingdom	863.7	830.0	807.0	836.3	872.2	846.9	765.5	767.3	736.6	728.5	757.3	706.7	713.4	750.1
Other Europe	847.4	1,048.0	1,097.7	1,406.9	1,420.9	1,440.4	1,560.5	1,586.1	1,771.2	2,064.9	1,929.4	1,914.1	2,126.2	2,263.2
Albania	1.0	0.6	0.5	0.3	0.6	0.8	5.2	2.9	7.2	8.5	14.3	9.0	6.7	4.7



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Andorra	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Belarus	7.6	3.3	2.4	2.0	4.7	7.7	2.2	2.8	4.0	0.3	4.9	4.8	2.9	5.3
Bosnia and Herzegovina	0.2	0.5	1.1	0.6	4.1	9.6	11.7	4.0	11.7	21.2	8.9	9.2	11.5	10.2
Holy See (Vatican City)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iceland	3.4	8.6	5.6	8.6	8.5	8.5	6.7	17.0	17.9	11.6	8.4	9.0	6.3	12.0
Kosovo	0.0	0.0	0.0	0.0	0.0	0.5	2.1	2.0	0.5	1.8	1.4	1.8	2.8	6.3
Liechtenstein	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Macedonia	0.2	0.0	1.1	2.4	2.5	4.2	4.8	3.3	17.1	13.9	16.1	17.0	17.1	12.6
Moldova	1.1	1.3	1.3	4.0	0.8	3.0	0.3	1.3	2.8	6.4	4.8	6.2	3.6	10.4
Monaco	0.0	0.0	0.3	0.0	0.1	0.2	0.0	0.0	0.8	0.0	0.0	0.0	1.0	0.0
Montenegro <sup>a</sup>	na	na	na	na	0.0	0.3	0.0	0.5	2.8	0.9	2.3	2.7	3.6	2.6
Norway	99.8	127.9	138.6	148.0	156.2	147.0	144.4	143.4	159.0	179.6	142.9	147.6	163.5	136.4
Russia	163.5	166.4	166.2	164.9	169.2	170.2	184.1	173.7	166.9	152.3	188.0	209.5	321.9	384.0
San Marino	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
Serbia <sup>a</sup>	na	na	na	na	72.9	74.0	78.8	114.2	187.4	417.7	225.8	240.9	237.4	215.3
Serbia and Montenegro <sup>b</sup>	9.9	16.4	38.0	34.4	na	na	na	na	na	na	na	na	na	na
Switzerland	151.5	137.3	156.4	180.5	175.3	248.0	190.0	196.9	195.6	250.7	249.1	254.4	233.9	252.2
Turkey	400.1	579.3	574.4	855.6	814.2	752.5	919.1	916.4	983.8	977.0	1,036.7	971.6	1,072.1	1,158.5
Ukraine	9.1	6.6	11.9	5.6	11.8	14.0	11.1	7.8	13.8	22.7	24.7	30.4	42.2	52.9



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Middle East	309.9	389.6	440.4	796.7	1,222.8	1,102.2	1,125.0	1,249.2	1,388.8	1,602.4	1,516.4	1,508.4	1,662.4	1,833.8
Armenia	0.0	0.0	1.0	0.7	0.0	0.7	0.4	0.5	1.8	2.8	1.8	1.4	6.9	6.0
Azerbaijan	0.5	0.0	0.0	2.3	3.0	2.2	3.3	7.7	4.4	3.1	1.5	2.8	6.2	4.1
Bahrain	1.3	2.0	3.0	3.9	2.3	7.2	2.8	6.0	4.0	1.5	7.3	2.0	0.3	0.3
Gaza Strip	0.0	0.0	0.1	0.3	5.3	1.7	2.7	1.5	2.5	0.0	2.0	0.3	0.0	0.3
Georgia	2.4	1.0	4.3	5.0	4.1	1.7	2.9	6.1	4.8	4.8	2.6	4.8	8.1	1.2
Iran	61.8	119.5	178.5	471.5	863.8	766.5	780.4	902.7	999.4	1,182.2	1,051.6	1,064.0	1,200.3	1,281.0
Iraq	0.0	1.7	3.7	4.8	7.8	13.9	6.0	20.1	32.0	23.7	18.0	22.3	18.4	149.5
Israel	121.9	130.8	128.5	103.5	139.5	119.0	134.8	108.0	134.5	131.9	131.6	132.8	130.5	104.6
Jordan	39.8	44.3	31.4	56.7	71.7	73.1	61.3	51.4	53.9	59.1	53.0	43.0	41.4	45.3
Kuwait	6.4	7.9	5.9	8.3	9.8	10.5	10.2	7.1	7.6	12.0	14.9	7.3	11.9	13.7
Lebanon	11.0	6.5	11.1	11.6	7.0	8.0	11.1	17.2	13.6	10.2	7.1	18.0	13.2	15.0
Oman	13.2	16.8	17.5	18.0	25.6	10.4	14.7	11.6	11.2	17.9	22.8	17.2	15.3	9.8
Qatar	3.0	1.0	1.0	0.3	0.5	2.3	2.1	1.0	2.4	1.2	2.8	1.7	4.5	4.1
Saudi Arabia	22.4	32.5	23.3	62.7	53.2	46.6	56.5	71.0	75.3	99.6	150.2	161.0	163.5	152.2
Syria	14.3	13.7	20.1	17.2	17.0	23.2	17.4	24.2	27.1	30.2	26.6	14.6	18.4	25.1
United Arab Emirates	9.0	9.7	9.6	24.2	8.4	10.0	16.3	11.2	11.9	14.9	18.5	9.9	17.1	17.9
West Bank	2.1	2.2	1.1	3.8	2.7	3.2	1.8	1.7	0.5	5.1	2.6	2.8	3.8	2.7
Yemen	0.8	0.0	0.0	2.0	1.0	2.0	0.5	0.2	1.9	2.1	1.4	2.6	2.6	1.1



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Africa	789.9	772.6	762.1	1,151.4	1,378.4	1,230.4	1,170.1	1,338.2	1,438.1	1,339.3	1,586.1	1,563.4	1,626.2	1,729.1
Algeria	4.9	7.9	11.5	24.9	24.6	31.5	40.6	42.9	46.3	43.4	70.6	58.1	98.3	90.4
Angola	0.0	0.0	0.5	0.8	0.2	0.1	0.0	0.0	0.5	0.7	0.0	0.6	0.5	0.3
Benin	7.7	9.5	3.7	12.7	6.5	13.3	22.7	19.1	27.9	18.3	18.2	21.1	24.3	21.9
Botswana	11.3	11.1	5.6	10.6	13.9	13.1	10.3	15.8	8.6	5.2	10.7	5.4	5.7	8.1
Burkina Faso	4.8	7.3	10.5	12.1	20.1	19.2	11.3	12.1	17.7	14.5	7.3	10.5	10.5	17.6
Burundi	0.0	0.2	0.0	0.0	0.0	0.0	1.0	0.8	0.0	0.0	0.0	0.2	1.5	1.5
Cameroon	18.7	17.0	25.6	35.8	34.4	32.3	21.7	21.8	24.3	17.2	21.1	33.5	30.1	28.8
Cape Verde	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.6	0.0	0.0
Central African Republic	0.1	0.0	0.0	0.7	0.2	0.3	1.0	0.8	0.0	0.0	0.0	0.0	0.0	1.0
Chad	0.1	0.0	0.0	1.8	0.5	0.2	0.0	0.0	0.8	0.6	0.5	0.5	2.1	0.0
Comoros	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Congo, Democratic Republic of the	0.2	0.0	0.0	0.0	0.5	1.5	0.8	0.7	2.9	2.0	0.8	2.0	6.6	6.9
Congo, Republic of the	1.2	0.1	0.3	3.4	4.1	0.7	1.7	1.7	0.4	1.2	0.6	3.1	0.9	3.5
Côte d'Ivoire	4.7	1.4	5.7	10.1	12.3	17.3	5.5	15.2	5.6	11.0	11.9	12.8	9.0	13.2
Djibouti	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.0
Egypt	66.8	52.8	58.3	113.5	169.6	166.9	160.5	174.2	211.4	196.0	255.3	225.1	231.3	262.9
Equatorial Guinea	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eritrea	0.0	0.0	0.3	0.0	1.0	1.8	0.3	1.0	0.0	0.0	1.9	0.1	0.3	1.7



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Ethiopia	35.1	35.1	38.4	63.3	66.3	58.0	58.3	46.9	64.1	65.3	87.8	97.5	85.4	110.1
Gabon	0.7	0.5	1.2	0.5	0.5	0.0	1.0	1.1	0.1	1.4	2.7	2.2	0.1	2.1
Gambia, The	2.9	3.7	1.1	0.3	0.5	1.2	0.8	0.0	1.1	0.1	0.5	0.0	0.0	0.0
Ghana	31.9	22.4	24.8	29.4	35.7	28.9	34.0	39.1	42.1	33.2	44.2	46.3	47.2	52.8
Guinea	0.9	0.0	0.1	0.4	0.5	0.7	0.4	0.5	0.0	0.2	0.9	0.1	0.2	0.6
Guinea-Bissau	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.2	0.0	0.8	0.0
Kenya	43.6	51.3	57.0	75.0	73.6	62.6	53.5	75.4	97.5	68.9	68.7	71.0	71.9	94.5
Lesotho	0.0	0.2	0.3	0.3	0.3	1.7	0.9	0.0	0.5	1.0	0.3	0.3	0.8	0.3
Liberia	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0
Libya	0.7	0.9	2.0	1.0	1.5	1.6	1.6	1.3	9.0	3.8	5.4	1.6	2.2	2.0
Madagascar	0.9	0.4	0.4	0.9	1.6	3.9	3.5	2.5	3.8	6.5	6.0	4.9	2.2	5.2
Malawi	4.4	2.9	1.7	5.6	7.0	4.0	2.2	6.0	9.8	13.0	5.9	5.7	12.2	11.8
Mali	5.6	5.6	4.3	9.0	5.2	12.3	4.7	2.0	8.4	10.5	4.3	6.4	6.5	6.8
Mauritania	0.7	0.0	0.3	1.0	0.0	0.3	0.0	0.3	1.3	1.7	0.6	0.0	0.2	0.0
Mauritius	3.5	1.8	5.8	2.2	1.8	2.7	5.1	5.3	3.4	5.2	3.0	3.4	4.3	4.0
Morocco	21.8	20.0	23.1	23.9	24.3	35.0	20.8	15.6	20.8	19.6	23.4	46.7	43.5	43.9
Mozambique	1.8	2.4	1.7	3.0	0.2	1.9	0.7	1.6	2.1	2.2	3.0	2.6	4.4	5.7
Namibia	1.5	1.7	2.0	1.0	0.5	0.0	1.5	2.7	2.8	0.7	1.3	0.0	0.7	1.9
Niger	2.9	2.0	3.0	3.0	1.4	3.2	4.0	9.5	6.2	3.1	3.7	7.5	9.7	9.1





Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nigeria	230.2	182.7	185.4	358.3	443.8	321.9	256.1	305.6	303.0	278.1	306.0	294.7	299.8	285.4
Rwanda	0.0	0.0	0.3	0.0	0.0	0.4	2.3	2.0	2.3	2.3	3.4	7.1	4.4	4.3
São Tomé and Príncipe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Senegal	12.3	8.7	6.3	7.0	6.6	6.6	10.0	6.6	6.0	6.7	10.4	9.0	8.8	10.1
Seychelles	0.0	0.0	0.3	1.3	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0
Sierra Leone	1.0	0.3	0.3	1.3	2.3	0.0	1.1	0.8	0.4	0.5	0.4	0.0	2.0	0.4
Somalia	0.0	0.0	0.0	0.2	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Africa	161.4	239.0	166.1	205.6	210.8	208.4	233.5	273.4	242.7	252.3	323.3	309.2	313.3	330.1
South Sudan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Sudan	20.2	16.4	14.5	17.2	28.9	26.0	22.3	29.1	38.6	34.7	28.9	19.5	18.2	21.1
Swaziland	1.6	0.2	3.5	1.7	3.5	2.5	2.9	2.9	1.4	0.8	2.5	0.1	0.8	1.5
Tanzania	19.4	15.4	23.4	30.6	47.6	21.2	13.4	21.3	23.2	19.2	31.7	42.9	35.7	39.6
Togo	2.6	2.4	3.6	4.4	2.3	1.3	3.2	5.8	2.9	3.1	4.9	2.2	2.2	4.6
Tunisia	18.0	18.4	29.4	41.6	92.0	87.4	127.9	142.7	155.1	153.4	164.7	148.1	166.2	164.4
Uganda	10.5	14.0	10.3	12.2	7.8	14.6	14.5	15.3	27.1	16.3	21.9	19.2	27.8	31.7
Western Sahara	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Zambia	7.9	5.3	5.9	3.5	2.7	4.0	0.7	2.3	1.9	6.1	3.3	4.3	6.0	5.7
Zimbabwe	25.6	11.6	23.8	20.6	21.8	17.1	9.6	14.7	14.1	18.8	23.2	36.5	27.7	21.3
Asia	4,605.6	5,151.4	6,052.8	6,956.4	8,814.8	9,921.1	10,685.4	11,682.2	12,947.2	13,130.8	16,267.8	17,333.3	17,926.8	18,036.2



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	0.5	0.0	0.0	0.1	0.7	2.1	0.6	0.3	0.9	0.3	1.3
Bangladesh	24.2	41.7	37.6	73.5	62.6	44.5	40.9	44.7	56.4	61.3	101.9	102.5	80.6	96.3
Bhutan	2.5	0.8	0.6	0.6	0.5	0.1	3.0	1.1	1.7	1.5	1.6	1.5	1.3	4.1
Brunei	0.0	1.0	0.0	0.0	0.5	0.0	1.0	1.6	0.0	0.1	1.3	1.6	4.9	6.6
Burma	0.1	0.0	0.4	1.4	2.9	0.9	1.4	1.1	1.1	2.3	0.8	1.5	1.9	1.4
Cambodia	8.3	2.8	6.4	5.2	4.7	5.7	3.8	5.9	4.1	3.8	5.0	7.5	5.1	3.4
China	980.4	1,236.3	2,098.4	2,324.9	2,889.0	3,297.2	3,777.6	4,371.7	5,315.2	5,217.1	7,569.8	8,243.0	9,146.3	9,191.9
India	1,076.7	1,111.2	1,210.4	1,403.7	1,650.6	2,077.0	2,071.5	2,099.6	2,153.4	2,434.4	2,750.3	3,120.9	2,920.2	2,918.4
Indonesia	11.7	36.2	34.8	25.9	31.4	31.4	30.3	78.3	94.9	103.9	126.5	182.1	281.5	301.5
Japan	1,697.6	1,817.5	1,716.0	1,658.9	1,751.4	1,869.6	1,899.5	2,015.5	1,800.3	1,684.8	1,774.4	1,678.6	1,489.9	1,492.9
Kazakhstan	0.0	1.5	3.0	1.4	1.1	1.1	0.6	3.6	3.7	4.6	13.1	11.9	9.8	13.5
Kyrgyzstan	0.1	0.5	1.4	0.0	1.5	0.0	0.6	0.9	1.2	0.9	1.1	1.4	1.4	2.6
Laos	4.2	5.4	0.8	6.0	2.4	7.8	5.4	3.9	5.1	10.8	5.8	3.0	5.4	12.7
Malaysia	48.5	64.0	52.6	96.7	124.2	185.2	259.3	296.4	388.5	446.9	519.1	521.3	470.9	549.7
Maldives	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Mongolia	0.2	0.3	0.3	1.0	0.9	2.3	2.3	1.8	2.5	1.2	2.2	2.2	3.2	2.3
Nepal	7.2	6.0	7.1	8.5	11.5	3.4	8.7	5.6	4.8	5.2	10.1	6.6	9.2	11.2
North Korea	0.6	0.0	0.0	0.0	0.0	0.7	2.5	0.3	0.0	1.4	0.4	0.1	2.0	0.0
Pakistan	54.4	54.5	56.8	161.0	227.4	177.4	216.1	240.5	334.8	414.6	534.6	501.4	546.7	483.6



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Papua New Guinea	2.0	1.7	0.0	2.1	2.6	3.9	0.2	3.2	4.6	2.0	0.5	2.7	1.3	2.2
Philippines	57.5	80.0	68.4	67.9	69.4	77.7	87.3	77.1	79.0	63.4	100.3	75.6	75.2	61.9
Singapore	7.9	19.2	19.3	32.9	25.2	24.8	23.3	28.1	28.1	31.3	38.4	51.6	51.6	49.4
South Korea	304.2	327.1	361.4	388.4	1,074.5	1,260.6	1,276.1	1,381.9	1,454.5	1,561.6	1,635.5	1,819.8	1,819.8	1,765.3
Sri Lanka	32.3	23.7	19.9	23.3	28.0	26.1	23.4	13.9	29.6	25.3	31.6	25.5	25.3	38.1
Taiwan	175.9	189.2	214.8	248.9	338.0	334.5	396.2	469.9	484.8	439.0	437.0	384.2	355.2	320.9
Tajikistan	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.8	0.5	0.8	0.6
Thailand	86.2	105.8	113.8	404.8	488.3	452.3	519.8	493.1	651.1	552.8	536.8	533.7	561.4	615.8
Timor-Leste	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.5	0.8	1.5	2.2	0.7	0.0
Turkmenistan	0.0	0.0	0.3	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Uzbekistan	2.6	3.3	3.0	1.9	6.7	5.7	5.5	9.0	7.5	6.0	3.0	2.9	5.9	5.5
Vietnam	20.2	21.4	25.3	16.0	18.9	31.0	29.1	32.9	37.8	52.1	64.2	46.7	49.0	82.7
Australia and Oceania	1,072.7	1,073.7	1,052.3	1,164.2	1,245.0	1,230.9	1,229.2	1,265.9	1,232.6	1,289.0	1,379.1	1,509.8	1,481.8	1,511.3
Australia	794.5	778.6	763.5	864.0	932.9	892.3	937.8	980.0	938.7	960.5	1,020.0	1,133.2	1,126.3	1,115.3
Cook Islands	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	0.0
Fiji	0.7	0.0	2.0	1.9	0.8	2.3	1.0	0.8	1.2	0.8	0.2	1.1	1.5	4.6
Kiribati	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marshall Islands	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Micronesia, Federated States of	0.1	0.0	0.0	0.3	0.0	0.4	0.5	0.1	0.0	0.0	0.0	0.1	0.1	0.0



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nauru	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Zealand	274.1	291.6	284.2	293.3	308.9	335.2	288.6	282.6	291.5	327.4	357.0	371.3	351.2	389.3
Niue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Palau	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Samoa	2.6	3.0	2.0	3.8	2.5	0.0	0.0	0.3	0.2	0.0	0.0	3.2	2.2	0.0
Solomon Islands	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.8	0.2	0.3	0.0	0.0	0.1	0.0
Tonga	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Tuvalu	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vanuatu	0.3	0.3	0.6	0.5	0.0	0.6	0.9	1.3	0.3	0.0	1.9	0.3	0.3	2.0
Unassigned	131.8	73.8	84.2	107.0	131.7	174.6	89.8	87.3	63.6	48.6	65.0	49.4	27.0	18.7

na = not applicable; country data do not exist.

EU = European Union.

<sup>a</sup> Beginning in 2006, Serbia and Montenegro represented individual countries.

<sup>b</sup> 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.

**Source(s)**

National Science Foundation, National Center for Science and Engineering Statistics; SRI International; Science-Metrix; Elsevier, Scopus abstract and citation database, accessed July 2017.



*Science and Engineering Indicators 2018*