

Appendix table 5-29

S&E articles in biological sciences, by region/country/economy: 1997–2011

Region/country/economy	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
World	141,863.0	145,556.0	144,485.0	147,031.0	144,465.0	146,119.0	149,296.7	154,509.0	156,226.0	157,420.0	159,217.0	159,740.0	157,391.0	160,031.0	161,652.0
North America															
Canada	5,838.3	5,779.7	5,583.6	5,730.7	5,616.2	5,620.1	5,783.8	5,856.4	6,153.5	6,216.5	6,403.6	6,228.2	6,085.4	6,145.7	5,885.9
Mexico	587.6	663.6	638.9	663.7	706.1	747.6	848.1	911.0	942.9	919.5	985.6	1,011.3	921.6	947.1	988.3
United States	51,821.3	51,769.9	50,844.6	52,165.4	51,495.3	51,155.1	51,530.1	53,560.9	53,133.1	52,637.9	52,593.2	51,593.4	49,670.0	49,345.9	49,413.2
Central America/Caribbean															
Antigua and Barbuda	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.3	0.5	0.0	0.0	0.0
Bahamas	0.5	0.9	1.2	0.7	0.3	0.3	0.6	0.5	0.2	0.7	1.1	1.0	0.4	0.0	0.5
Barbados	5.8	6.3	3.9	3.4	3.5	4.9	4.8	2.5	2.3	3.7	1.5	5.8	1.1	1.9	1.6
Belize	1.1	0.3	0.9	0.3	0.7	0.9	0.8	0.3	1.4	2.4	0.6	0.0	0.5	1.2	1.4
Costa Rica	39.8	40.0	32.4	38.1	48.2	41.9	51.0	47.7	58.7	33.2	50.8	51.5	45.2	45.7	42.0
Cuba	57.4	85.5	71.7	85.5	94.0	65.9	93.6	92.6	78.9	99.7	68.9	74.5	71.3	52.3	64.3
Dominica	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.0	0.3	0.5	1.6
Dominican Republic	3.1	2.8	1.1	3.3	2.0	1.4	2.4	2.5	0.3	1.3	1.1	2.4	1.2	2.0	2.0
El Salvador	0.8	0.0	0.0	0.5	0.5	0.9	0.5	1.3	2.6	0.8	2.4	1.4	1.4	0.9	1.2
Grenada	0.0	0.0	0.0	0.5	0.0	0.0	0.6	1.3	1.0	3.2	2.8	0.7	3.6	2.0	3.8
Guatemala	11.5	9.3	5.7	7.7	9.7	12.4	5.2	9.3	6.7	4.5	8.7	6.2	9.3	7.3	6.1
Haiti	0.2	0.5	0.3	0.8	0.7	0.8	1.9	0.5	0.0	1.6	1.1	0.7	2.6	0.8	1.9
Honduras	2.6	6.1	1.6	2.0	2.5	2.4	1.1	1.2	2.3	2.0	1.9	0.4	1.4	2.4	2.8
Jamaica	18.3	9.8	12.8	10.4	14.5	15.3	8.6	13.6	10.5	15.1	8.1	5.4	6.3	7.2	12.3
Nicaragua	4.2	1.0	3.3	2.5	0.8	0.5	2.5	3.7	5.1	3.0	4.0	4.1	2.6	5.2	5.6
Panama	28.7	25.0	31.9	25.4	37.2	38.2	34.3	43.0	35.5	39.1	54.2	47.5	48.4	55.0	42.8
St. Kitts and Nevis	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.4	0.5	0.3
St. Lucia	0.5	1.0	0.0	0.0	0.5	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0
St. Vincent	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	0.0
Trinidad and Tobago	16.8	15.5	9.0	13.0	9.6	8.1	18.4	15.0	10.5	6.0	11.7	10.8	8.0	15.6	10.8
West Indies Associated States	0.8	1.0	0.8	0.5	1.9	0.5	1.2	0.8	0.6	2.1	2.7	5.4	1.9	3.5	3.2
South America															
Argentina	735.8	774.8	720.3	828.6	855.4	936.6	947.2	867.1	902.3	1,022.8	994.8	1,061.0	1,102.9	1,085.1	1,153.5
Bolivia	16.0	9.8	13.5	16.4	11.1	16.0	16.9	13.8	17.2	20.1	26.3	17.4	21.9	16.5	22.7
Brazil	1,292.3	1,462.1	1,606.8	1,691.8	1,732.2	2,124.6	2,284.0	2,637.2	2,454.3	2,771.8	2,920.2	3,345.0	3,139.7	3,309.6	3,471.2
Chile	211.4	221.9	230.3	210.0	223.0	258.6	275.0	315.9	334.5	288.9	352.7	352.4	337.7	351.2	357.4
Colombia	58.7	58.3	72.1	82.4	89.1	107.7	99.2	115.6	115.7	113.2	114.6	113.3	121.2	153.4	145.9
Ecuador	12.4	10.0	6.1	12.0	6.9	14.4	15.0	19.1	15.8	15.0	26.9	22.3	27.8	21.1	23.4
Guyana	0.5	1.0	0.8	1.7	1.3	4.2	1.1	0.7	2.1	0.2	2.6	0.6	0.0	0.0	0.2
Paraguay	3.2	3.1	3.0	2.9	4.0	3.7	5.4	3.4	5.7	1.4	4.9	4.3	5.1	2.5	4.0
Peru	24.7	25.6	15.6	24.2	30.6	32.7	41.9	34.9	41.2	43.7	62.1	49.3	47.2	44.5	52.2
Suriname	2.1	0.9	2.5	0.9	0.5	1.2	1.6	2.3	1.5	0.9	0.1	1.0	0.0	0.0	0.5
Uruguay	40.3	40.6	45.6	49.6	48.6	46.7	72.3	74.9	69.8	65.9	62.4	68.7	82.0	66.6	92.7
Venezuela	136.7	138.3	131.0	136.3	140.6	139.0	136.8	137.2	133.2	123.0	139.0	135.6	78.7	75.8	62.1

S&E articles in biological sciences, by region/country/economy: 1997–2011

Region/country/economy	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Europe															
European Union															
Austria	894.2	901.8	944.7	884.7	982.5	980.2	958.9	1,043.4	1,006.7	981.8	1,003.3	983.4	1,005.3	1,074.9	1,036.3
Belgium	1,477.4	1,456.0	1,495.3	1,413.3	1,430.5	1,448.5	1,492.9	1,580.1	1,638.0	1,511.7	1,543.8	1,584.6	1,598.1	1,632.2	1,638.9
Bulgaria	209.0	160.6	162.0	182.7	140.2	151.7	140.4	145.7	136.9	123.1	136.7	140.7	129.6	100.9	103.0
Cyprus	8.8	7.9	10.9	11.6	7.9	9.3	4.6	9.8	7.5	11.7	12.1	13.8	17.3	21.0	22.0
Czech Republic	531.3	545.4	603.4	601.8	629.3	688.7	733.7	792.9	797.8	808.6	892.2	974.0	919.1	1,003.6	897.3
Denmark	1,296.3	1,290.2	1,304.8	1,392.7	1,362.6	1,314.5	1,391.7	1,403.2	1,293.1	1,333.6	1,303.2	1,306.2	1,263.2	1,357.5	1,330.9
Estonia	54.4	80.4	92.5	93.0	85.4	83.7	80.3	100.8	128.8	123.0	132.0	103.9	144.8	133.0	150.9
Finland	1,049.3	1,202.3	1,244.7	1,266.1	1,263.2	1,241.1	1,242.4	1,267.2	1,220.7	1,251.7	1,213.1	1,240.7	1,109.3	1,104.5	1,102.6
France	7,689.5	7,736.5	7,606.8	7,537.3	7,211.8	7,031.7	6,881.4	6,794.9	6,781.4	6,613.9	6,527.7	6,453.4	6,288.8	6,162.7	6,053.1
Germany	8,958.2	9,482.3	9,284.5	9,303.5	9,082.2	9,027.1	8,871.4	9,111.8	9,389.4	9,141.7	9,099.5	8,984.7	8,818.9	8,918.1	8,687.8
Greece	378.7	448.8	389.8	539.8	507.9	562.5	567.5	621.1	711.8	792.1	742.1	828.2	746.7	745.3	715.2
Hungary	438.0	518.2	500.2	500.4	503.7	526.3	549.5	593.0	585.1	625.8	559.3	614.9	552.6	546.5	575.4
Ireland	299.8	354.9	372.1	352.3	355.3	365.3	373.7	401.2	462.0	462.6	513.1	512.1	554.2	616.0	639.3
Italy	4,388.5	4,386.9	4,354.0	4,501.9	4,392.0	4,562.4	4,773.9	4,876.7	4,947.2	5,105.1	5,074.9	5,109.9	5,075.5	4,879.7	4,811.9
Latvia	24.0	22.1	23.7	20.0	23.5	31.0	19.7	24.9	17.4	19.4	21.5	24.4	20.1	17.4	28.0
Lithuania	32.3	31.2	40.2	31.5	55.3	48.0	62.0	51.4	62.1	63.0	60.9	56.1	50.1	61.8	59.1
Luxembourg	10.5	16.3	9.8	17.1	19.1	14.5	15.7	25.0	17.3	23.3	21.9	31.3	37.8	33.6	50.2
Malta	4.5	3.3	1.5	1.0	2.8	3.3	13.8	9.2	1.4	2.9	3.8	6.3	7.6	3.4	5.9
Netherlands	3,058.1	3,040.0	3,000.5	2,957.0	2,826.6	2,951.7	2,869.6	2,948.6	2,986.5	2,862.5	2,899.8	2,976.3	2,860.1	3,028.0	2,943.3
Poland	670.6	703.0	741.4	834.0	802.7	914.3	1,087.9	1,000.9	1,142.3	1,243.7	1,175.1	1,163.1	1,157.9	1,227.1	1,287.5
Portugal	266.1	248.9	340.8	413.8	431.1	466.4	565.7	576.2	574.0	668.1	666.4	736.7	817.2	757.2	864.1
Romania	43.3	54.3	42.4	47.9	44.3	40.2	51.3	50.9	43.1	53.2	61.9	63.3	66.6	102.0	117.2
Slovakia	212.5	211.7	249.5	217.3	202.1	226.8	194.5	224.0	179.0	215.8	225.0	232.7	208.7	212.7	220.8
Slovenia	108.9	122.3	139.2	239.8	157.4	134.5	175.9	145.7	207.1	180.4	221.3	238.7	218.0	202.1	213.7
Spain	3,229.5	3,304.0	3,536.1	3,436.6	3,545.5	3,737.9	3,843.8	3,818.3	4,121.1	4,183.9	4,233.6	4,332.3	4,425.3	4,457.9	4,488.9
Sweden	2,528.1	2,659.9	2,615.2	2,548.8	2,634.9	2,553.3	2,531.1	2,459.2	2,422.6	2,429.9	2,345.7	2,256.1	2,113.0	2,041.6	1,947.1
United Kingdom	11,201.0	11,385.8	10,884.1	11,059.9	10,479.0	10,460.9	10,369.8	10,404.6	10,083.3	9,919.4	9,846.1	9,704.4	9,431.8	9,647.2	9,084.7
Other Europe															
Albania	0.3	2.5	1.8	1.7	2.9	1.1	2.3	1.1	3.7	2.6	3.0	1.8	1.8	2.6	4.8
Andorra	0.5	0.0	0.0	0.5	0.3	1.0	0.5	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Belarus	92.4	63.3	79.2	73.1	53.7	55.4	53.1	55.8	49.1	31.8	38.0	29.5	33.5	22.8	25.6
Bosnia and Herzegovina	2.4	2.8	0.0	0.5	2.1	0.9	2.7	3.5	5.5	8.3	4.4	3.7	7.2	6.7	10.5
Croatia	74.1	78.3	98.4	93.9	101.8	99.6	125.5	131.2	154.2	182.1	167.6	169.5	176.9	182.1	189.1
Iceland	28.5	45.4	35.4	32.4	38.7	38.9	50.6	51.4	53.3	41.6	51.5	43.7	46.8	46.3	47.1
Kosovo	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	0.0
Liechtenstein	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.2	0.5	0.3	0.5	0.6	0.0	1.3	1.2
Macedonia	2.5	3.6	1.7	2.6	7.5	2.9	1.9	5.8	7.1	3.6	6.8	7.2	4.8	8.0	11.0
Moldova	8.6	4.1	6.2	8.0	6.0	4.5	4.8	5.4	2.8	3.8	1.9	3.2	4.3	1.7	2.4
Monaco	1.9	6.8	2.2	1.7	2.4	2.1	6.4	3.1	2.6	4.3	1.3	1.1	2.5	3.0	2.7
Montenegro	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0	1.4	1.5	1.0	1.3	1.7

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Region/country/economy	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Norway	673.9	703.1	704.8	746.9	788.4	742.6	723.0	758.0	794.7	841.1	832.5	812.7	836.5	804.2	845.2
Russia	3,236.5	3,129.3	3,244.0	2,365.8	1,489.2	1,653.2	1,705.1	1,653.1	1,570.0	1,188.5	1,155.1	971.4	937.6	911.3	934.8
San Marino	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Serbia	NA	NA	NA	NA	NA	NA	NA	NA	NA	69.7	152.7	184.9	146.0	175.8	176.3
Serbia and Montenegro	NA	NA	NA	NA	NA	NA	NA	NA	165.3	68.8	NA	NA	NA	NA	NA
Switzerland	2,080.8	2,076.5	2,157.2	2,155.7	2,031.4	2,043.2	1,998.3	2,104.4	2,054.6	2,129.6	2,073.6	2,013.9	2,094.7	2,102.5	2,161.6
Ukraine	190.5	170.0	151.6	96.2	80.1	124.8	105.6	103.5	84.6	71.2	86.5	69.7	49.4	63.8	73.6
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	0.0
Yugoslavia	72.4	101.6	97.2	92.8	80.7	71.3	99.5	135.2	NA	NA	NA	NA	NA	NA	NA
Middle East															
Bahrain	2.5	1.6	1.0	5.0	4.3	3.5	10.3	6.2	8.3	9.3	7.3	9.9	4.0	8.0	5.4
Iran	66.8	74.5	76.5	101.9	121.5	160.6	247.7	275.8	356.8	397.7	606.7	573.0	641.8	694.2	851.2
Iraq	9.7	7.3	4.5	3.9	4.5	2.0	4.8	2.1	3.4	9.0	5.1	4.4	2.8	3.9	6.6
Israel	1,372.8	1,351.1	1,310.3	1,456.5	1,403.6	1,479.5	1,477.9	1,465.5	1,385.8	1,387.0	1,408.9	1,398.4	1,280.0	1,280.8	1,244.1
Jordan	29.4	39.8	31.1	42.0	35.9	35.9	41.2	36.7	35.5	34.8	40.2	40.8	43.5	44.8	42.5
Kuwait	40.7	50.2	65.6	51.5	52.0	41.3	55.1	48.8	56.7	38.9	48.1	43.8	42.3	41.7	42.0
Lebanon	27.7	28.4	25.0	25.2	48.4	38.5	51.3	40.4	36.8	34.7	39.4	44.7	36.2	38.4	37.9
Oman	11.3	19.7	12.7	13.4	10.5	12.7	18.9	12.9	17.3	13.4	11.4	11.9	9.9	21.7	18.3
Qatar	3.0	6.2	1.5	1.6	3.0	0.3	1.0	6.1	2.9	5.5	4.3	7.5	9.7	14.9	18.3
Saudi Arabia	132.7	110.9	98.0	88.0	96.6	100.9	105.5	87.3	79.1	75.6	83.4	75.5	99.8	141.3	240.4
Syria	12.2	14.0	15.1	8.4	14.6	9.6	20.2	17.7	12.1	8.9	12.7	12.2	11.9	19.8	20.2
Turkey	332.7	376.7	414.2	447.1	510.0	717.3	887.6	1,007.0	1,084.3	1,134.6	1,109.0	1,010.9	903.1	931.7	1,009.7
United Arab Emirates	34.1	25.5	27.7	27.9	24.0	27.6	42.0	46.8	52.1	55.4	44.2	55.1	41.2	46.7	53.8
Yemen	2.6	3.9	1.2	3.5	4.6	3.3	4.5	3.0	2.8	5.2	1.7	0.5	2.9	5.7	6.5
Africa															
Algeria	8.9	8.7	16.5	8.5	12.9	17.9	20.1	17.3	16.6	23.5	27.8	33.5	37.5	36.7	40.6
Angola	0.9	0.5	1.4	2.0	2.6	0.8	0.9	1.0	1.4	0.9	2.0	0.5	0.9	3.0	2.6
Benin	12.2	8.7	7.6	9.9	11.1	13.8	9.4	9.6	13.0	10.3	10.6	19.8	20.2	14.5	21.3
Botswana	7.0	10.5	5.0	4.7	5.1	9.5	19.4	10.7	11.2	13.3	16.9	8.4	13.5	7.2	9.8
Burkina Faso	7.4	11.8	6.0	8.8	10.7	9.2	18.6	15.3	12.3	20.1	14.1	15.8	24.5	20.2	21.6
Burundi	1.2	0.8	1.4	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.2	0.7
Cameroon	25.4	29.8	24.3	23.5	29.1	34.6	39.1	42.6	32.3	41.1	51.4	39.7	33.6	44.8	49.3
Cape Verde	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.5	0.4	0.5
Central African Republic	1.6	1.2	2.4	1.2	1.7	1.4	3.7	3.1	3.1	3.0	3.0	2.5	3.1	3.6	3.3
Chad	0.1	0.0	0.3	0.5	0.3	0.7	0.8	0.3	2.8	1.5	0.7	0.7	1.5	0.0	0.8
Comoros	0.0	0.5	0.0	0.0	0.0	0.0	0.7	0.2	1.0	0.0	0.3	0.3	0.0	0.5	0.2
Congo (Brazzaville)	6.4	5.1	8.7	5.8	0.9	4.3	4.5	8.7	7.7	7.6	5.0	7.6	7.1	8.5	6.9
Congo (Kinshasa)	4.8	1.6	4.3	2.6	0.9	1.4	1.5	1.7	3.7	0.3	2.3	3.9	5.6	6.1	6.9
Côte d'Ivoire	13.8	12.9	15.9	17.4	15.6	13.9	22.8	18.2	16.5	16.0	17.8	15.2	20.7	17.5	16.3
Djibouti	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.4	0.4	0.2	0.3	0.0	0.5	1.0	0.0
Egypt	149.0	178.1	181.1	175.9	187.2	207.8	217.0	195.2	198.4	197.0	196.2	214.3	264.8	294.1	378.2
Equatorial Guinea	0.3	0.3	0.0	0.0	0.0	0.2	0.9	0.5	0.2	0.0	0.7	0.0	0.3	0.1	0.1

S&E articles in biological sciences, by region/country/economy: 1997–2011

Region/country/economy	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eritrea	0.0	1.3	1.3	3.2	0.0	2.1	1.3	0.5	1.1	3.1	0.6	0.8	0.3	0.0	0.1
Ethiopia	20.3	17.9	20.0	19.3	24.6	33.1	36.5	24.2	29.0	30.7	37.7	27.2	37.7	34.0	43.3
Gabon	7.1	13.6	15.3	6.1	13.3	14.6	12.6	12.0	12.5	11.2	9.4	11.3	12.3	10.4	10.3
Gambia	11.2	11.0	7.1	9.4	9.7	8.3	7.6	9.5	9.0	13.0	8.9	10.3	12.4	10.3	4.0
Ghana	11.6	10.6	20.4	20.2	19.3	21.1	18.0	20.2	25.4	23.8	29.9	31.1	23.8	29.3	16.5
Guinea	1.0	1.5	1.4	1.0	1.1	0.5	0.2	1.1	2.4	3.3	1.5	1.4	1.5	1.3	2.5
Guinea-Bissau	2.2	1.6	2.6	2.0	4.1	3.1	2.2	4.2	4.3	3.3	3.4	2.8	2.7	1.6	1.8
Kenya	94.7	92.6	70.6	78.8	90.8	97.7	95.7	88.1	90.0	106.1	102.6	117.4	119.9	102.5	108.7
Lesotho	0.0	0.0	1.0	2.5	1.2	1.0	0.3	0.0	0.0	0.0	0.0	0.2	0.9	0.9	2.2
Liberia	0.3	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.5	0.9	0.0	0.5	0.0	0.0	0.7
Libya	2.5	6.6	4.7	0.8	7.6	4.7	3.8	0.9	4.6	5.6	3.9	3.4	4.5	6.8	3.4
Madagascar	6.9	8.3	13.4	17.5	16.9	13.1	17.3	18.1	21.2	21.8	24.2	17.7	18.7	23.2	17.3
Malawi	7.5	7.1	7.8	10.5	12.9	14.7	14.0	9.8	12.2	15.4	14.4	16.6	12.6	14.4	14.2
Mali	3.1	3.5	3.3	5.5	5.9	6.2	5.5	11.2	12.5	12.7	7.1	10.3	10.4	10.8	11.5
Mauritania	0.6	1.4	0.9	2.2	0.9	0.5	1.2	1.2	1.0	1.3	0.3	0.5	0.5	1.1	1.1
Mauritius	0.5	4.0	3.3	4.3	4.9	6.7	4.6	10.8	4.4	7.9	5.0	3.4	4.0	5.2	1.6
Morocco	41.0	56.6	65.8	50.6	58.4	62.4	43.7	54.4	49.0	42.1	41.1	40.3	38.8	38.7	45.4
Mozambique	0.5	2.5	2.6	2.4	3.7	3.1	2.9	3.3	11.0	4.2	5.5	6.3	9.2	8.9	14.7
Namibia	7.0	10.7	5.8	9.1	11.7	9.0	12.5	7.8	14.5	10.0	5.6	7.8	6.9	3.7	6.7
Niger	7.4	7.5	7.4	4.3	3.2	4.3	1.3	2.0	3.2	5.1	8.1	3.9	5.6	5.0	6.1
Nigeria	91.7	89.0	94.5	110.3	85.1	86.4	95.3	79.9	70.9	76.9	89.6	84.5	81.9	99.0	89.0
Rwanda	2.0	3.4	1.0	0.4	1.1	0.8	0.6	1.6	2.7	1.5	3.9	2.4	3.0	3.7	6.9
São Tomé and Príncipe	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.0
Senegal	23.5	24.2	31.1	27.2	20.8	16.8	23.4	28.2	34.4	21.1	25.9	19.2	13.3	18.9	24.0
Senegambia	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	0.0
Seychelles	1.0	0.7	0.3	1.3	2.5	0.3	3.8	1.0	0.5	1.6	2.3	1.1	1.9	1.2	2.6
Sierra Leone	1.6	0.0	0.0	0.3	2.3	1.3	0.1	0.0	0.3	0.0	0.0	0.6	0.5	1.3	0.9
Somalia	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.5
South Africa	672.5	692.2	675.9	722.7	733.9	712.9	666.4	698.0	751.8	761.1	762.7	830.8	798.6	824.5	829.9
Sudan	8.1	14.2	15.7	12.7	11.0	11.4	11.2	13.4	11.4	13.5	14.8	13.4	15.1	22.5	16.4
Swaziland	3.0	3.6	1.0	1.0	0.5	1.0	2.0	0.0	0.5	1.0	0.9	2.2	2.8	3.4	5.3
Tanzania	22.0	20.6	23.3	28.2	22.2	28.9	24.5	29.3	31.6	36.8	40.3	42.3	43.7	38.6	32.2
Togo	2.9	2.5	4.0	1.4	0.5	1.1	3.4	0.7	3.1	4.3	2.4	0.9	2.6	2.3	4.5
Tunisia	35.9	31.7	36.1	41.1	63.1	66.3	67.8	82.8	114.0	150.0	195.5	214.0	246.5	242.2	279.1
Uganda	18.9	20.8	24.8	28.2	31.0	24.3	33.9	62.0	33.8	40.8	95.7	53.6	57.9	60.3	54.2
Zambia	7.7	7.4	4.7	5.9	8.9	7.9	8.1	8.0	9.1	13.5	12.2	13.8	9.6	13.7	19.4
Zimbabwe	37.2	36.9	36.8	31.6	32.4	37.4	31.4	17.4	20.3	18.9	31.7	21.5	22.5	18.9	20.4
Asia															
Afghanistan	0.0	0.0	1.0	0.0	0.0	0.0	0.5	0.0	0.6	0.3	0.3	1.1	0.5	0.2	2.1
Armenia	22.0	18.2	17.7	15.1	11.7	19.4	13.6	13.4	13.9	18.5	10.6	12.4	6.0	7.7	13.0
Azerbaijan	8.5	10.3	7.7	6.0	1.1	3.3	3.7	7.2	11.5	3.6	3.6	0.3	2.3	1.8	4.7
Bangladesh	27.4	27.5	30.7	27.7	28.2	27.4	39.4	40.1	35.1	40.4	42.3	42.3	47.7	49.3	46.1

Appendix table 5-29

S&E articles in biological sciences, by region/country/economy: 1997–2011

Region/country/economy	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Bhutan	0.0	0.5	0.5	0.0	0.0	0.0	1.0	1.3	0.3	4.6	1.4	1.3	2.8	2.1	3.4
Brunei	4.2	3.5	4.3	6.5	3.3	1.6	1.3	2.5	1.8	2.7	6.7	3.7	2.3	2.8	3.5
Burma	0.1	2.7	1.2	2.5	2.1	1.5	3.2	1.3	3.2	5.2	3.6	2.2	5.0	2.6	3.3
Cambodia	0.7	1.3	2.0	1.0	1.3	1.6	6.4	4.7	8.7	8.6	6.4	6.2	9.4	11.8	9.0
China	1,219.9	1,906.2	2,018.4	2,222.7	2,597.8	2,819.5	3,684.9	4,485.6	5,538.8	6,832.8	7,945.2	9,009.9	10,518.4	11,885.6	13,329.6
Georgia	17.5	11.1	4.6	13.0	7.1	9.1	6.3	11.3	15.2	13.6	7.4	13.4	6.8	21.3	15.6
India	1,863.1	1,963.6	2,033.3	1,976.4	2,118.9	2,252.2	2,517.1	2,633.9	2,822.9	3,037.4	3,206.6	3,246.1	3,361.3	3,500.8	3,813.9
Indonesia	37.3	51.1	48.9	58.9	48.9	55.6	46.7	55.7	56.7	60.2	57.6	60.1	67.8	54.5	61.5
Japan	12,048.2	12,725.8	12,560.5	13,089.7	12,485.9	12,398.7	12,327.9	12,322.5	11,984.3	11,519.6	11,344.8	11,159.6	10,376.3	10,015.9	9,738.4
Kazakhstan	12.8	14.4	9.5	6.9	6.8	7.7	10.5	9.0	5.7	3.4	7.4	4.2	5.9	6.0	7.8
Kyrgyzstan	2.0	2.0	0.5	1.0	0.4	0.2	0.5	1.1	0.4	1.5	1.0	1.3	1.2	0.7	1.4
Laos	0.5	4.0	0.0	1.1	1.7	0.3	1.3	3.3	4.5	3.8	3.1	1.5	5.8	6.4	4.6
Malaysia	74.6	76.3	90.3	91.9	87.0	93.9	93.0	114.9	129.4	118.2	125.0	139.2	183.5	234.2	264.2
Maldives	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.0	1.0	0.0	0.0	0.0	1.3	0.0	0.2
Mongolia	7.3	2.7	3.6	1.1	4.5	2.1	5.9	3.6	5.1	6.7	7.5	9.7	17.2	17.1	7.5
Nepal	10.5	5.9	11.8	9.6	13.1	10.3	15.7	17.4	16.6	24.1	18.8	13.8	15.5	11.3	14.3
North Korea	0.0	0.0	1.0	0.0	0.0	0.0	1.0	1.0	0.3	0.0	2.8	1.2	3.0	0.5	0.7
Pakistan	72.9	72.9	83.7	56.0	63.6	66.7	77.5	90.3	92.0	108.5	111.5	164.4	191.5	191.5	213.7
Philippines	56.2	48.4	54.5	51.4	36.8	44.0	51.3	44.1	56.6	41.7	41.3	53.2	55.1	57.1	58.2
Singapore	197.4	216.9	255.8	291.6	275.4	340.3	386.3	475.5	530.4	547.8	544.3	555.4	633.2	682.9	646.4
South Korea	721.3	1,085.3	1,254.7	1,548.1	1,643.9	1,871.1	2,232.1	2,618.4	2,822.7	2,973.8	3,158.0	3,246.4	3,416.5	3,767.6	4,105.2
Sri Lanka	19.8	20.6	30.0	23.1	23.4	33.3	42.2	35.0	37.0	32.2	25.5	27.4	27.8	36.1	25.9
Taiwan	918.9	973.8	896.7	1,010.8	1,128.9	1,131.2	1,198.0	1,487.7	1,559.3	1,694.3	1,669.8	1,925.4	1,832.3	2,002.1	2,013.0
Tajikistan	10.3	6.0	12.5	4.5	2.1	1.8	0.5	0.8	0.0	1.0	0.2	1.5	0.2	1.0	0.6
Thailand	116.6	165.8	166.1	193.0	197.4	234.3	287.8	332.9	344.5	393.9	466.8	499.5	489.8	526.1	557.7
Turkmenistan	1.8	1.2	0.5	1.7	1.3	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Uzbekistan	12.3	19.6	17.7	10.5	8.0	5.1	8.3	5.5	7.7	10.4	8.1	8.2	4.7	4.3	7.0
Vietnam	21.1	21.9	26.8	23.0	35.4	26.4	32.8	36.6	40.6	52.4	45.0	42.5	50.5	53.0	63.4
Australia/Oceania															
Australia	3,663.2	3,804.5	3,831.0	3,768.1	3,861.0	3,800.7	3,798.9	3,915.2	3,945.4	4,130.5	4,118.2	4,195.2	4,189.2	4,324.4	4,405.9
Fiji	1.5	1.5	1.5	0.8	3.3	6.7	2.4	2.5	4.8	6.5	4.7	5.0	4.4	5.3	3.6
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	0.0
Marshall Islands	2.6	0.0	0.0	0.0	0.0	0.5	0.0	0.8	0.0	0.3	0.0	0.0	0.0	0.3	0.3
Micronesia	0.0	0.0	0.7	1.3	0.5	0.0	0.8	0.0	0.9	0.0	0.0	0.0	1.2	1.3	0.0
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	0.0
New Zealand	710.1	767.0	767.3	816.5	778.8	765.9	772.8	760.1	820.2	845.7	827.8	801.9	829.3	936.1	899.9
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	0.0
Palau	0.0	0.0	0.0	0.0	0.6	0.3	0.0	0.9	0.5	0.4	1.5	0.0	0.0	0.0	0.3
Papua New Guinea	8.1	7.7	9.5	8.8	15.8	10.4	13.1	7.4	7.9	7.0	7.9	9.7	9.3	6.7	10.0
Samoa	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Solomon Islands	0.2	1.0	1.8	0.8	0.0	0.3	1.0	0.2	0.4	0.8	0.1	0.0	0.0	0.7	0.3

Appendix table 5-29

S&E articles in biological sciences, by region/country/economy: 1997–2011

Region/country/economy	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Tonga	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Tuvalu	0.0	1.0	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
Vanuatu	0.0	0.0	1.2	0.5	0.0	1.0	0.1	1.4	0.7	0.5	0.8	1.0	1.0	0.7	1.9

NA = not available; country did not exist as such.

NOTES: Article counts are from the set of journals covered by the Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Articles are classified by their year of publication and are assigned to a region/country/economy on the basis of the institutional address(es) listed in the article. Articles are credited on a fractional-count basis (i.e., for articles with collaborating institutions from multiple countries/economies, each country/economy receives fractional credit on the basis of the proportion of its participating institutions). Detail may not add to total because of rounding.

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