

Full Planet, Empty Plates

Supporting Data for Chapter 7: Grain Yields Starting to Plateau

WHEAT

[Wheat Yields in France, Germany, and the United Kingdom, 1961-2011](#)

GRAPH: Wheat Yields in France, Germany, and the United Kingdom, 1961-2011

[Wheat Production, Area, and Yield in India 1960-2011](#)

GRAPH: Wheat Production in India 1960-2011

GRAPH: Wheat Area Harvested in India 1960-2011

GRAPH: Wheat Yields in India 1960-2011

RICE

[Rice Yields in China and Japan, 1960-2011](#)

GRAPH: Rice Yields in China and Japan, 1960-2011

[Rice Yields in South Korea, 1960-2011](#)

GRAPH: Rice Yields in South Korea, 1960-2011

CORN

[Corn Production, Area, and Yield in Malawi, 1961-2011](#)

GRAPH: Corn Production in Malawi, 1961-2011

GRAPH: Corn Area Harvested in Malawi, 1961-2011

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UNITED STATES

[Corn, Wheat, and Rice Yields in the United States, 1960-2011](#)

GRAPH: Corn, Wheat, and Rice Yields in the United States, 1960-2011

[Grain Production in Canada and Iowa, 1960-2011](#)

GRAPH: Grain Production in Canada and Iowa, 1960-2011

[Grain Area Harvested in Canada and Iowa, 1960-2011](#)

GRAPH: Grain Area Harvested in Canada and Iowa, 1960-2011

[Grain Yields in Canada and Iowa, 1960-2011](#)

GRAPH: Grain Yields in Canada and Iowa, 1960-2011

[Soybean Production in China and Iowa, 1964-2011](#)

GRAPH: Soybean Production in China and Iowa, 1964-2011

[Soybean Area Harvested in China and Iowa, 1964-2011](#)

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[Soybean Yields in China and Iowa, 1964-2011](#)

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FERTILIZER

[World Fertilizer Consumption, 1950-2011](#)

GRAPH: World Fertilizer Consumption, 1950-2011

[Fertilizer Consumption in Top 10 Countries, 1961-2011](#)

GRAPH: Fertilizer Consumption in Top Five Countries, 1961-2011

[Fertilizer Consumption and Grain Production for the World, 1961-2011](#)

GRAPH: World Grain Production Per Ton of Fertilizer, 1961-2011

[Fertilizer Consumption and Grain Production in the United States, China, India, 1961-2011](#)

GRAPH: Grain Production Per Ton of Fertilizer in the United States, China, and India, 1961-2011

A full listing of data for the entire book is on-line at:

http://www.earth-policy.org/books/fpep/fpep_data

This is part of a supporting dataset for Lester R. Brown, **Full Planet, Empty Plates: The New Geopolitics of Food Scarcity** (New York: W.W. Norton & Company, 2012). For more information, see Earth Policy Institute on-line at www.earth-policy.org.

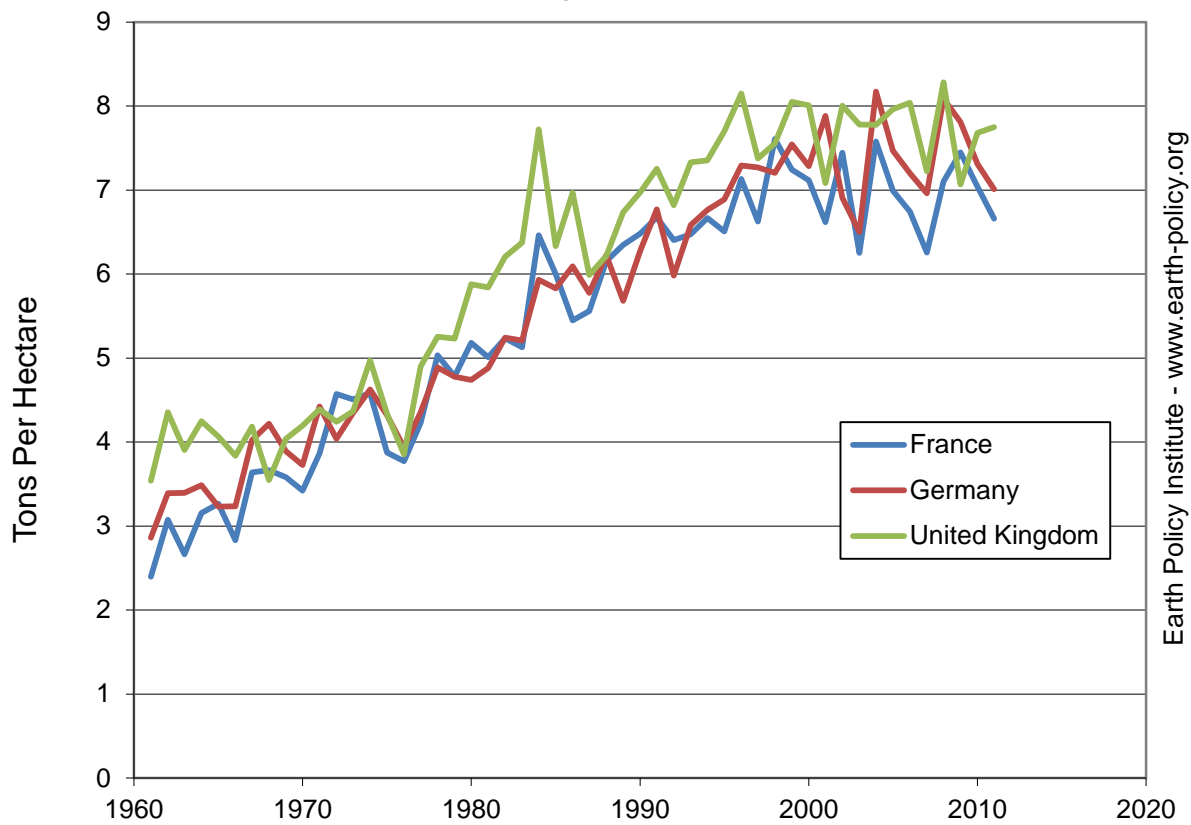
Wheat Yields in France, Germany, and the United Kingdom, 1961-2011

Year	United Kingdom		
	France	Germany	United Kingdom
Tons Per Hectare			
1961	2.39	2.86	3.54
1962	3.08	3.39	4.35
1963	2.66	3.39	3.91
1964	3.15	3.48	4.25
1965	3.27	3.23	4.07
1966	2.83	3.23	3.84
1967	3.64	4.02	4.18
1968	3.66	4.22	3.55
1969	3.58	3.89	4.04
1970	3.42	3.73	4.19
1971	3.86	4.42	4.39
1972	4.57	4.04	4.24
1973	4.51	4.35	4.37
1974	4.58	4.63	4.97
1975	3.87	4.32	4.33
1976	3.77	3.93	3.85
1977	4.23	4.36	4.90
1978	5.03	4.89	5.25
1979	4.78	4.78	5.23
1980	5.18	4.74	5.88
1981	5.01	4.88	5.84
1982	5.24	5.24	6.21
1983	5.13	5.21	6.37
1984	6.46	5.93	7.72
1985	6.00	5.83	6.33
1986	5.45	6.09	6.97
1987	5.56	5.78	5.99
1988	6.15	6.23	6.21
1989	6.35	5.68	6.74
1990	6.48	6.27	6.97
1991	6.68	6.77	7.25
1992	6.40	5.98	6.82
1993	6.47	6.58	7.33
1994	6.67	6.76	7.35
1995	6.51	6.89	7.70
1996	7.13	7.29	8.15
1997	6.62	7.27	7.38
1998	7.61	7.20	7.55
1999	7.24	7.54	8.05
2000	7.12	7.28	8.01
2001	6.62	7.88	7.08
2002	7.45	6.91	8.00
2003	6.25	6.50	7.78
2004	7.58	8.17	7.78
2005	6.99	7.47	7.96
2006	6.74	7.20	8.04
2007	6.25	6.96	7.22
2008	7.10	8.09	8.28
2009	7.45	7.81	7.07
2010	7.04	7.31	7.68
2011	6.66	7.01	7.75

Source: Compiled by Earth Policy Institute with 1961-2010 from U.N. Food and Agriculture Organization, *FAOSTAT*, electronic database, at faostat.fao.org, updated 23 February 2012; and with 2011 from U.S. Department of Agriculture, *World Agricultural Production* (Washington, DC: August 2012).

This is part of a supporting dataset for Lester R. Brown, **Full Planet, Empty Plates: The New Geopolitics of Food Scarcity** (New York: W.W. Norton & Company, 2012). For more information, see Earth Policy Institute on-line at www.earth-policy.org.

Wheat Yields in France, Germany, and the United Kingdom, 1961-2011



Source: FAO, USDA

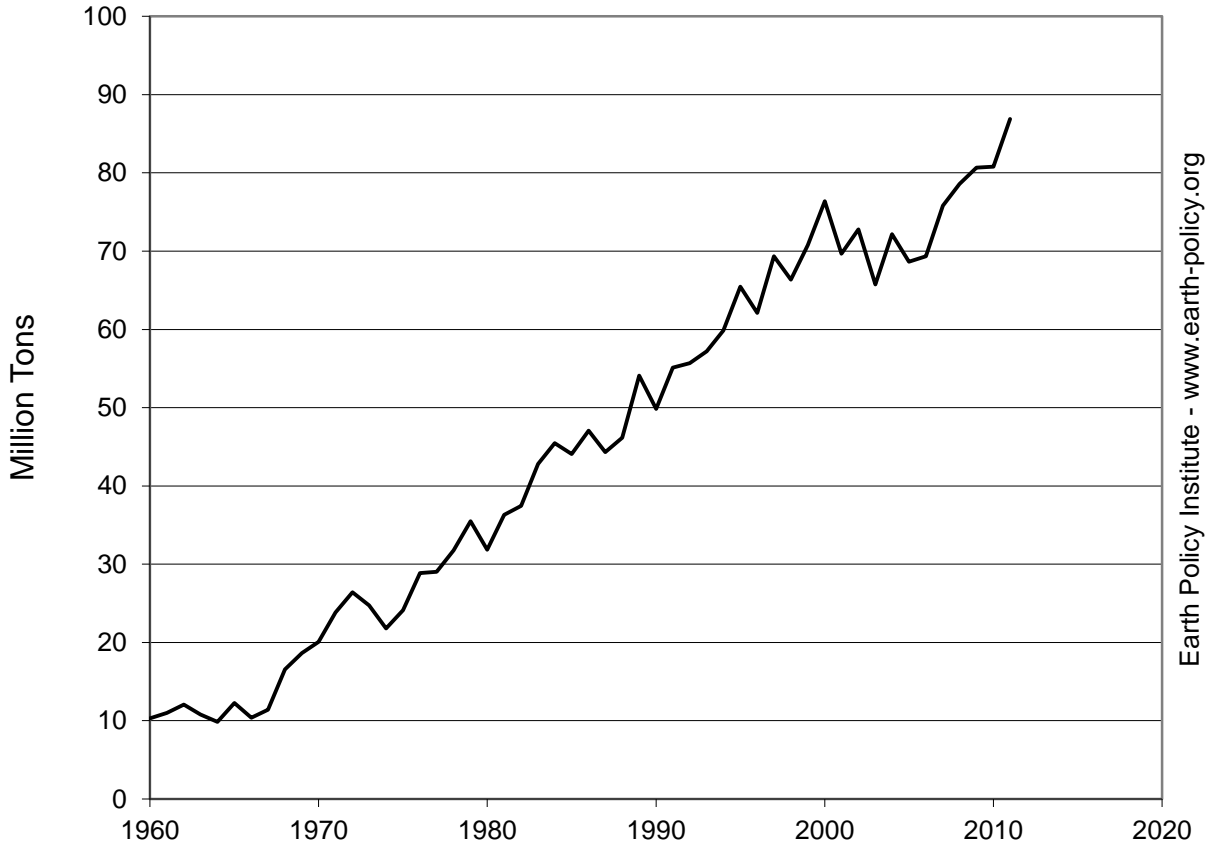
Wheat Production, Area, and Yield in India 1960-2011

Year	Production	Area	Yield
		Million Tons	
1960	10	13	0.77
1961	11	13	0.85
1962	12	14	0.89
1963	11	14	0.79
1964	10	13	0.73
1965	12	13	0.91
1966	10	13	0.83
1967	11	13	0.89
1968	17	15	1.10
1969	19	16	1.17
1970	20	17	1.21
1971	24	18	1.31
1972	26	19	1.38
1973	25	19	1.27
1974	22	19	1.17
1975	24	18	1.34
1976	29	20	1.41
1977	29	21	1.39
1978	32	21	1.48
1979	36	23	1.57
1980	32	22	1.44
1981	36	22	1.63
1982	37	22	1.69
1983	43	24	1.82
1984	45	25	1.84
1985	44	24	1.87
1986	47	23	2.05
1987	44	23	1.92
1988	46	23	2.00
1989	54	24	2.24
1990	50	24	2.12
1991	55	24	2.28
1992	56	23	2.39
1993	57	25	2.33
1994	60	25	2.38
1995	65	26	2.56
1996	62	25	2.48
1997	69	26	2.68
1998	66	27	2.49
1999	71	27	2.58
2000	76	27	2.78
2001	70	26	2.71
2002	73	26	2.81
2003	66	25	2.65
2004	72	27	2.71
2005	69	27	2.59
2006	69	26	2.63
2007	76	28	2.71
2008	79	28	2.79
2009	81	28	2.91
2010	81	28	2.84
2011	87	29	2.95

Source: Compiled by Earth Policy Institute from U.S. Department of Agriculture, *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 12 June

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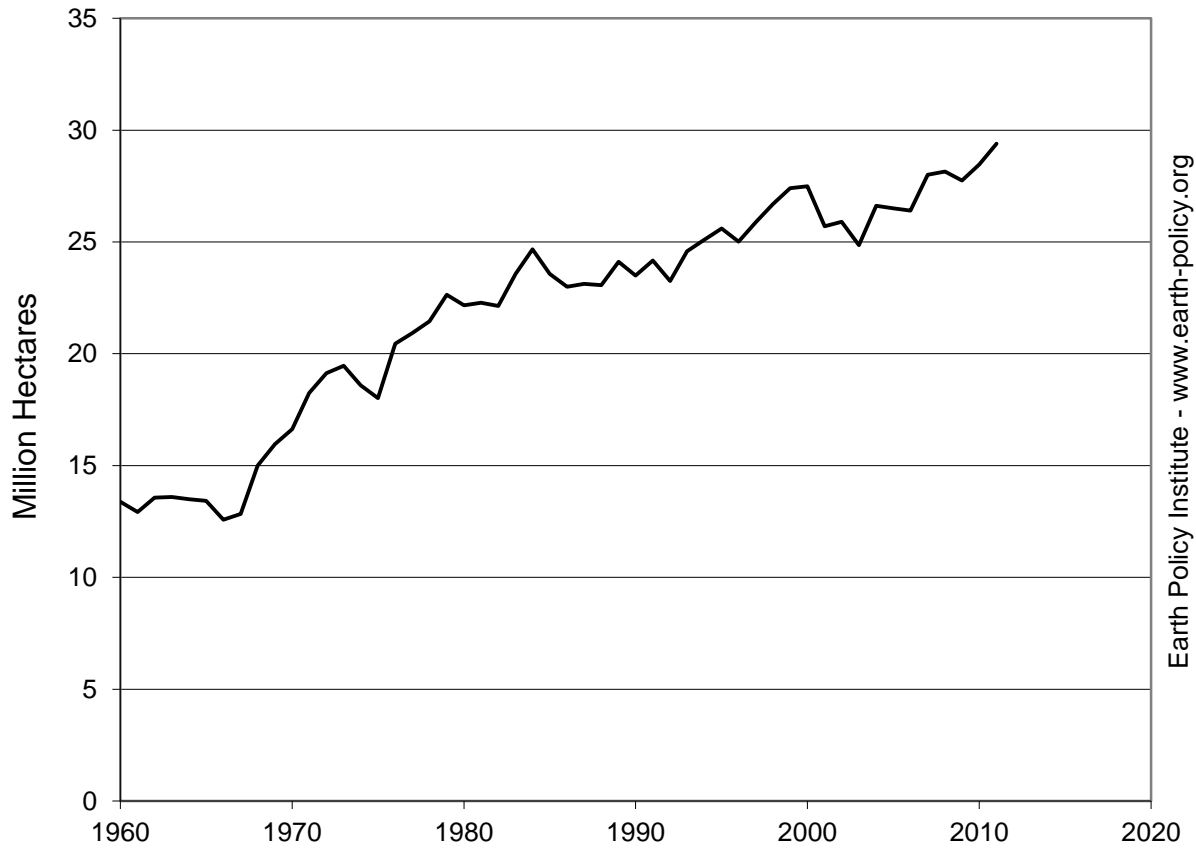
Wheat Production in India, 1960-2011



Source: USDA

Earth Policy Institute - www.earth-policy.org

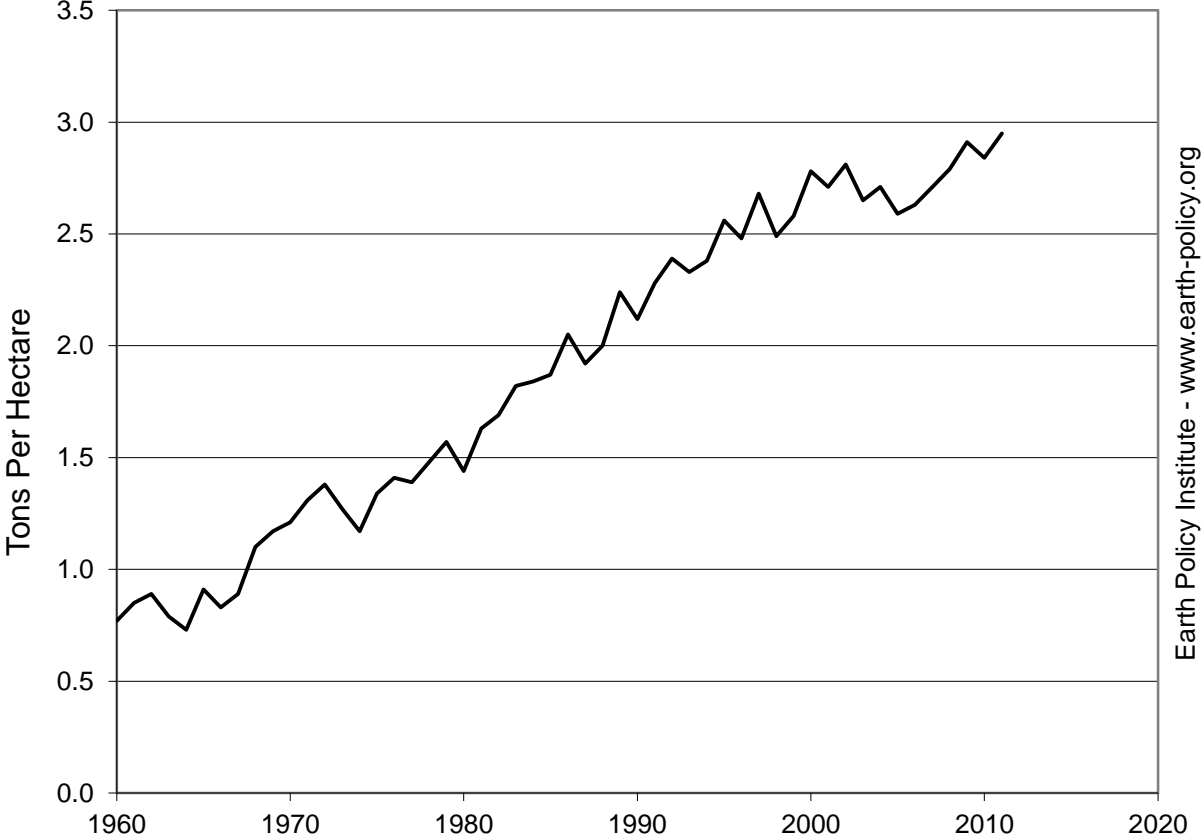
Wheat Area Harvested in India, 1960-2011



Source: USDA

Earth Policy Institute - www.earth-policy.org

Wheat Yields in India, 1960-2011



Source: USDA

Earth Policy Institute - www.earth-policy.org

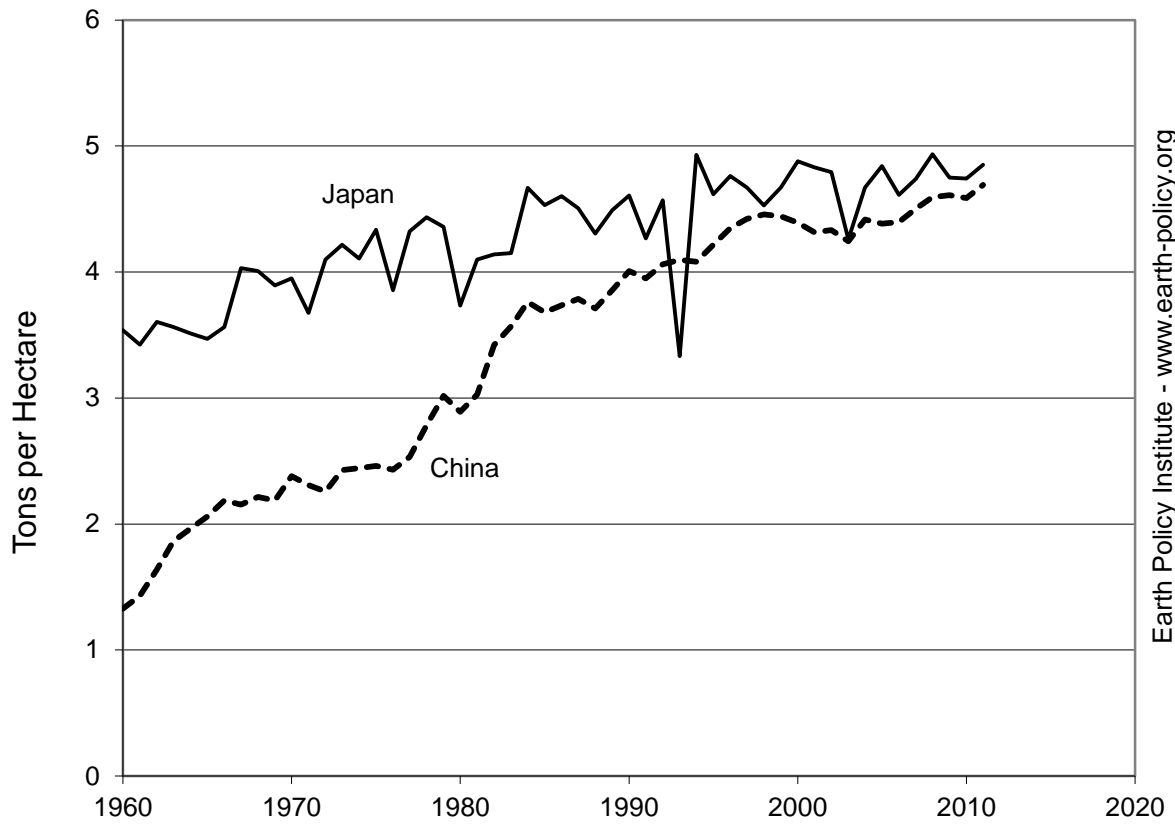
Rice Yields in China and Japan, 1960-2011

Year	China	Japan
	Tons per Hectare	
1960	1.33	3.54
1961	1.43	3.42
1962	1.64	3.60
1963	1.86	3.56
1964	1.96	3.51
1965	2.06	3.47
1966	2.19	3.56
1967	2.15	4.03
1968	2.21	4.01
1969	2.19	3.89
1970	2.38	3.95
1971	2.31	3.68
1972	2.26	4.10
1973	2.43	4.22
1974	2.44	4.11
1975	2.46	4.33
1976	2.43	3.85
1977	2.53	4.32
1978	2.78	4.43
1979	3.02	4.36
1980	2.89	3.73
1981	3.03	4.10
1982	3.42	4.14
1983	3.57	4.15
1984	3.76	4.67
1985	3.68	4.53
1986	3.74	4.60
1987	3.79	4.51
1988	3.71	4.31
1989	3.86	4.49
1990	4.01	4.61
1991	3.95	4.27
1992	4.06	4.57
1993	4.10	3.33
1994	4.08	4.93
1995	4.22	4.62
1996	4.35	4.76
1997	4.42	4.67
1998	4.46	4.53
1999	4.44	4.67
2000	4.39	4.88
2001	4.31	4.83
2002	4.33	4.79
2003	4.24	4.26
2004	4.42	4.67
2005	4.38	4.84
2006	4.40	4.61
2007	4.50	4.74
2008	4.59	4.93
2009	4.61	4.75
2010	4.59	4.74
2011	4.69	4.85

Source: Compiled by Earth Policy Institute from U.S. Department of Agriculture, *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 12 June 2012.

This is part of a supporting dataset for Lester R. Brown, **Full Planet, Empty Plates: The New Geopolitics of Food Scarcity** (New York: W.W. Norton & Company, 2012). For more information, see Earth Policy Institute on-line at www.earth-policy.org.

Rice Yields in China and Japan, 1960-2011



Source: USDA

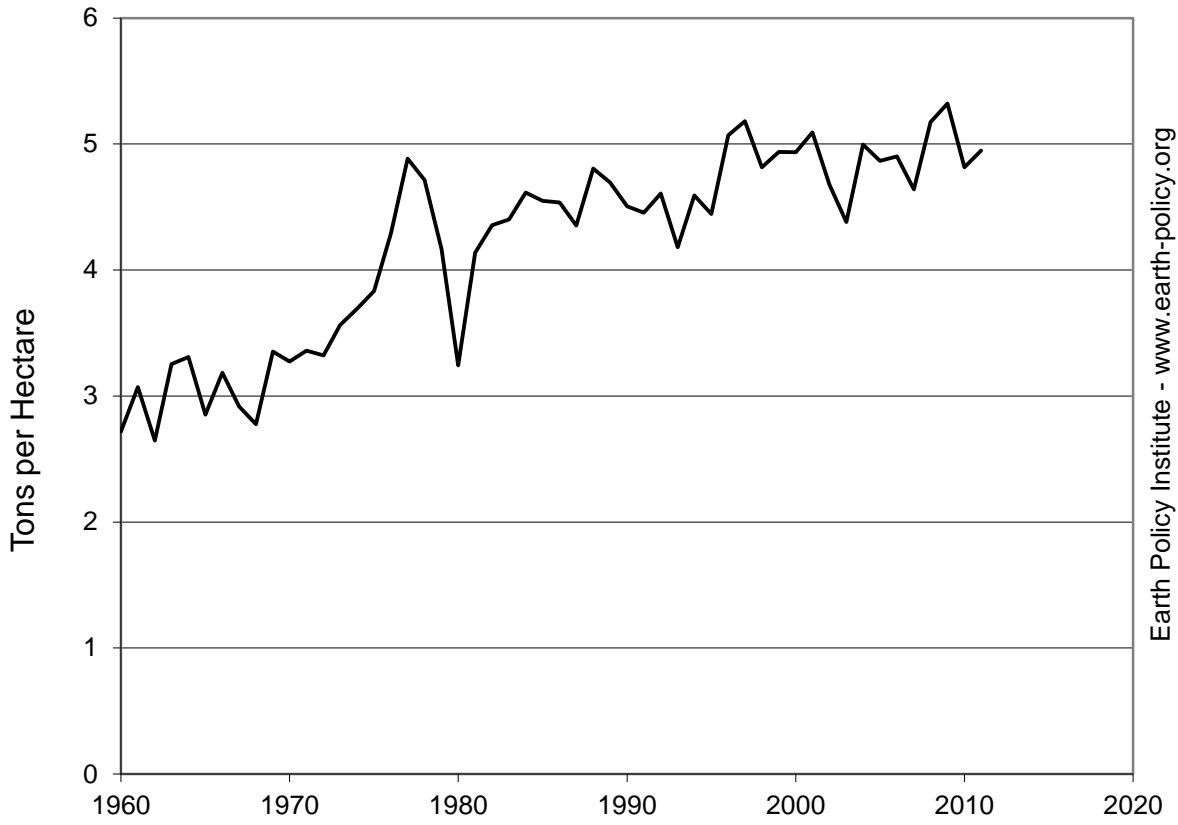
Rice Yields in South Korea, 1960-2011

Year	Rice Yields Tons Per Hectare
1960	2.72
1961	3.07
1962	2.65
1963	3.25
1964	3.31
1965	2.85
1966	3.18
1967	2.92
1968	2.78
1969	3.35
1970	3.27
1971	3.36
1972	3.32
1973	3.56
1974	3.69
1975	3.83
1976	4.29
1977	4.88
1978	4.71
1979	4.17
1980	3.24
1981	4.14
1982	4.36
1983	4.40
1984	4.62
1985	4.55
1986	4.54
1987	4.35
1988	4.80
1989	4.69
1990	4.51
1991	4.45
1992	4.61
1993	4.18
1994	4.59
1995	4.45
1996	5.07
1997	5.18
1998	4.82
1999	4.94
2000	4.94
2001	5.09
2002	4.68
2003	4.38
2004	5.00
2005	4.87
2006	4.90
2007	4.64
2008	5.17
2009	5.32
2010	4.82
2011	4.95

Source: Compiled by Earth Policy Institute from U.S. Department of Agriculture, *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 12 June 2012.

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Rice Yields in South Korea, 1960-2011



Source: USDA

Earth Policy Institute - www.earth-policy.org

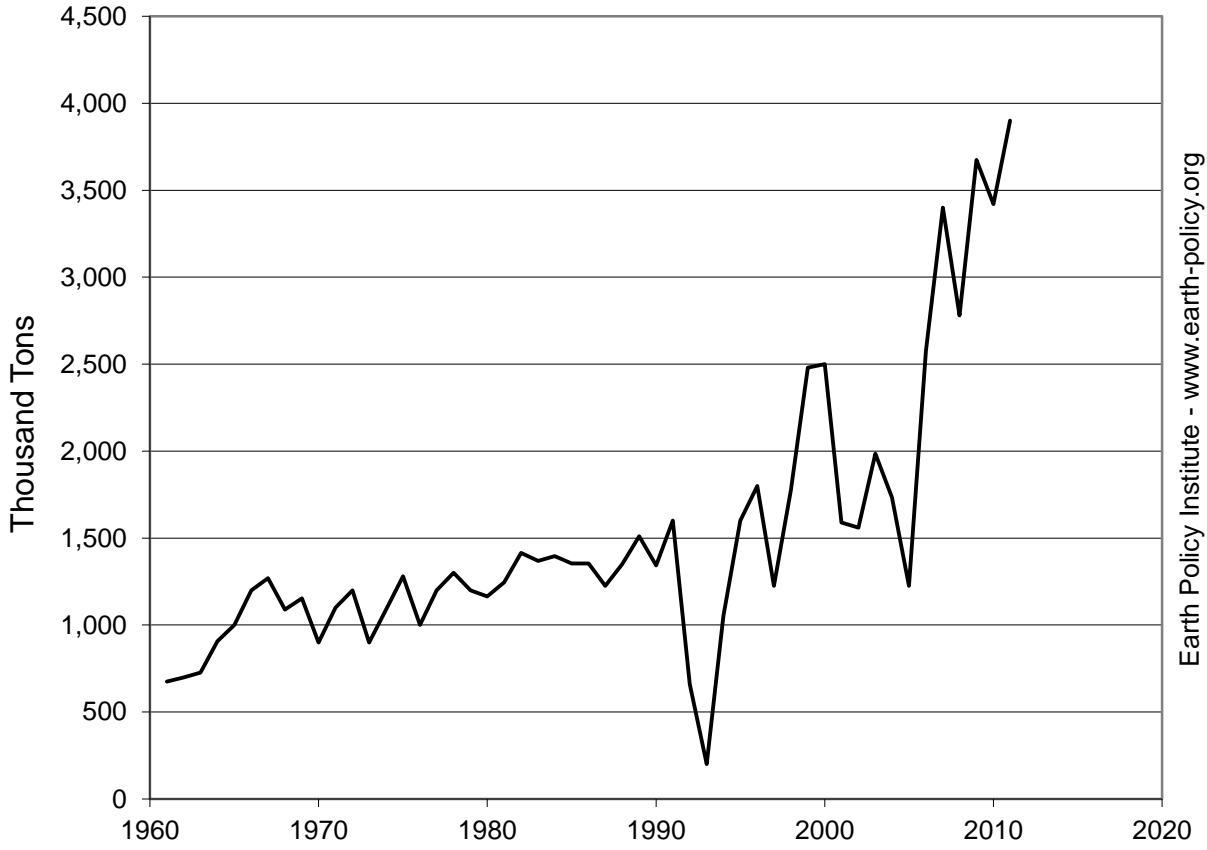
Corn Production, Area, and Yield in Malawi, 1961-2011

Year	Production Thousand Tons	Area Thousand Hectares	Yield Tons Per Hectare
1961	675	800	0.84
1962	700	800	0.88
1963	726	809	0.90
1964	907	809	1.12
1965	1,000	1,020	0.98
1966	1,200	1,020	1.18
1967	1,270	864	1.47
1968	1,089	1,068	1.02
1969	1,153	1,068	1.08
1970	900	1,000	0.90
1971	1,100	1,050	1.05
1972	1,200	1,100	1.09
1973	900	900	1.00
1974	1,090	1,000	1.09
1975	1,280	1,000	1.28
1976	1,000	1,090	0.92
1977	1,200	1,090	1.10
1978	1,300	1,195	1.09
1979	1,200	1,000	1.20
1980	1,165	1,100	1.06
1981	1,245	1,100	1.13
1982	1,415	1,200	1.18
1983	1,369	1,169	1.17
1984	1,397	1,182	1.18
1985	1,355	1,144	1.18
1986	1,355	1,193	1.14
1987	1,225	1,182	1.04
1988	1,350	1,180	1.14
1989	1,510	1,271	1.19
1990	1,343	1,344	1.00
1991	1,600	1,360	1.18
1992	660	1,370	0.48
1993	200	1,350	0.15
1994	1,050	1,150	0.91
1995	1,600	1,225	1.31
1996	1,800	1,250	1.44
1997	1,225	1,250	0.98
1998	1,775	1,390	1.28
1999	2,480	1,400	1.77
2000	2,500	1,450	1.72
2001	1,590	1,450	1.10
2002	1,560	1,490	1.05
2003	1,985	1,570	1.26
2004	1,733	1,535	1.13
2005	1,225	1,500	0.82
2006	2,575	1,620	1.59
2007	3,400	1,690	2.01
2008	2,780	1,650	1.68
2009	3,675	1,750	2.10
2010	3,420	1,750	1.95
2011	3,900	1,750	2.23

Source: Compiled by Earth Policy Institute from U.S. Department of Agriculture, *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 12 June 2012.

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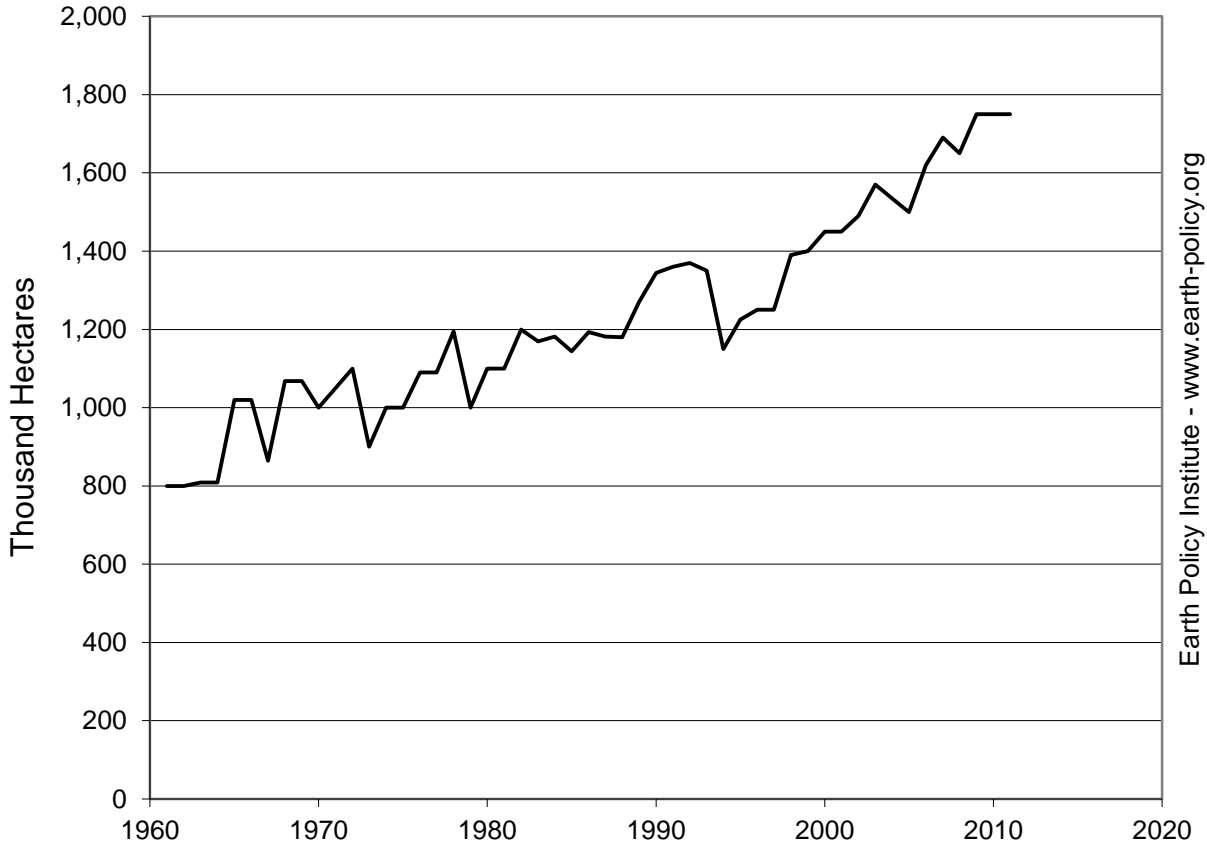
Corn Production in Malawi, 1961-2011



Source: USDA

Earth Policy Institute - www.earth-policy.org

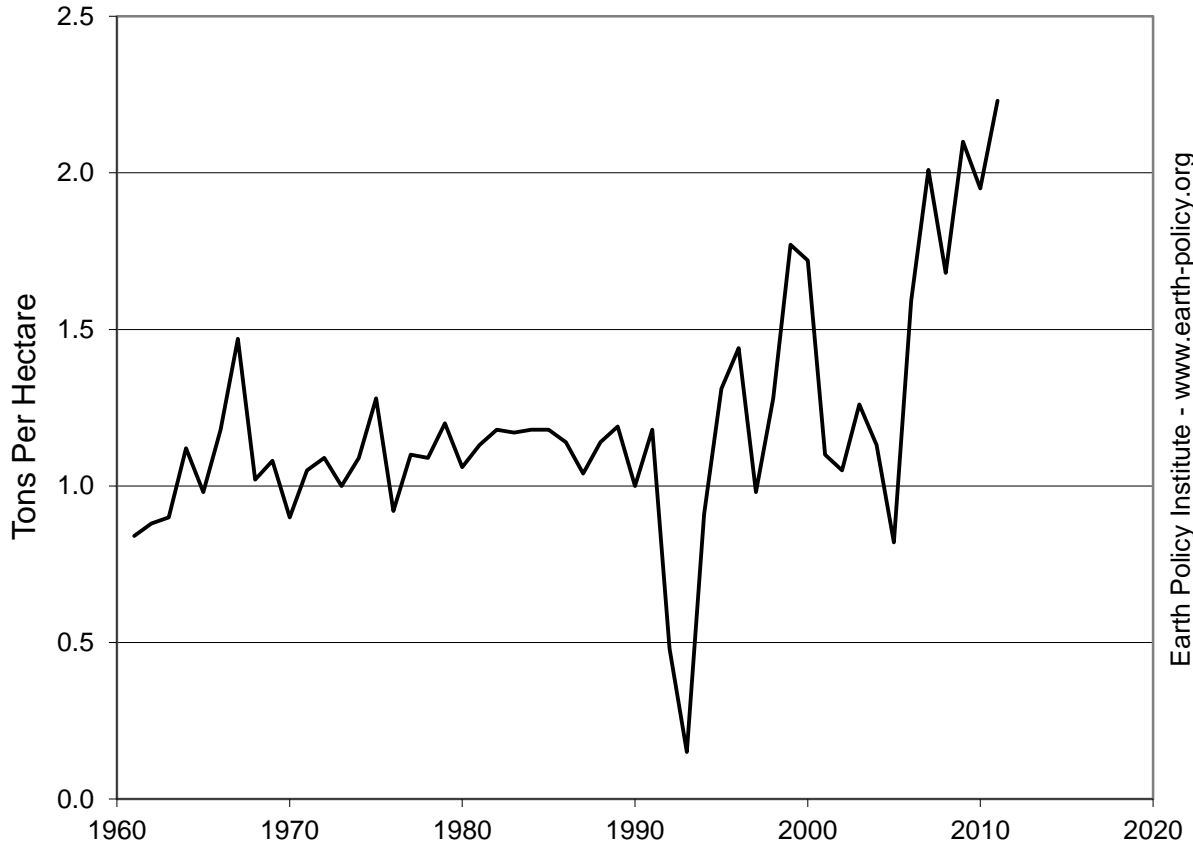
Corn Area Harvested in Malawi, 1961-2011



Source: USDA

Earth Policy Institute - www.earth-policy.org

Corn Yields in Malawi, 1961-2011



Source: USDA

Earth Policy Institute - www.earth-policy.org

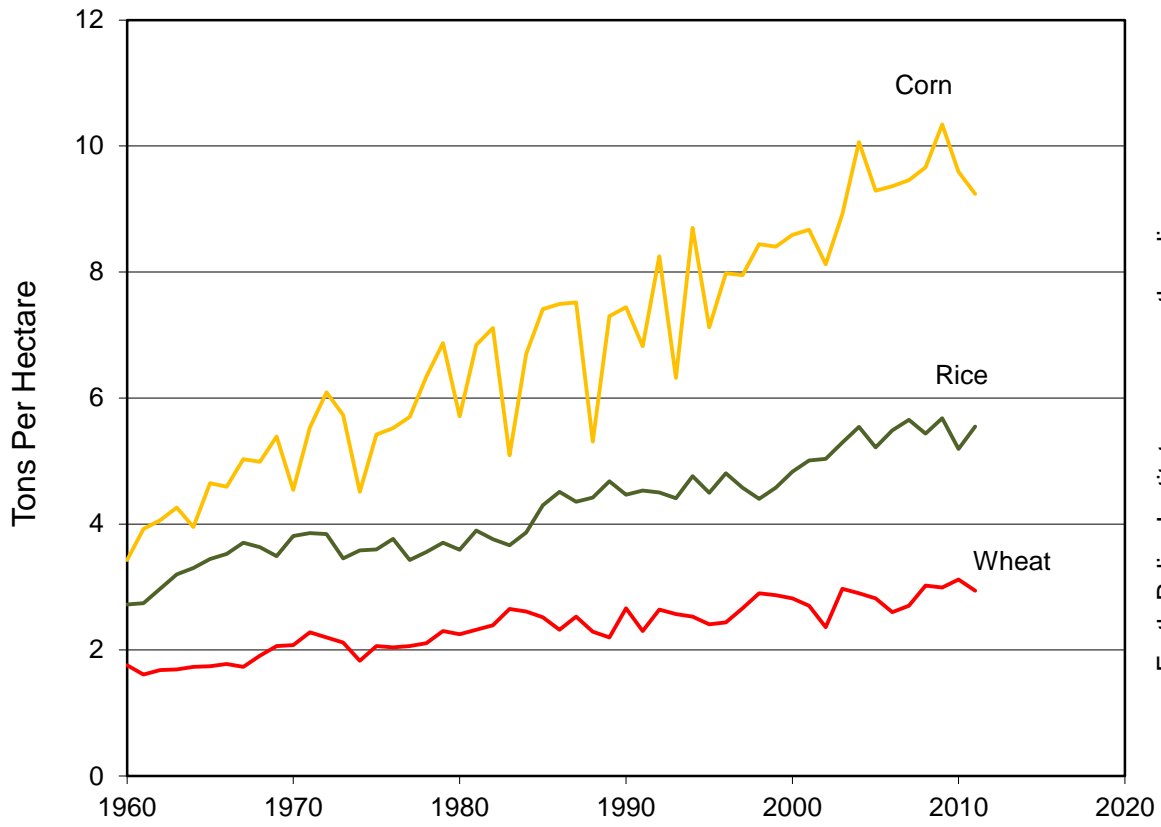
Corn, Wheat, and Rice Yields in the United States, 1960-2011

Year	Corn	Wheat	Rice
Tons Per Hectare			
1960	3.43	1.76	2.72
1961	3.92	1.61	2.74
1962	4.06	1.68	2.97
1963	4.26	1.69	3.20
1964	3.95	1.73	3.30
1965	4.65	1.74	3.44
1966	4.59	1.78	3.52
1967	5.03	1.73	3.70
1968	4.99	1.91	3.63
1969	5.39	2.06	3.49
1970	4.54	2.08	3.81
1971	5.53	2.28	3.86
1972	6.09	2.20	3.84
1973	5.73	2.12	3.46
1974	4.51	1.83	3.58
1975	5.42	2.06	3.60
1976	5.52	2.04	3.77
1977	5.70	2.06	3.43
1978	6.34	2.11	3.55
1979	6.87	2.30	3.70
1980	5.71	2.25	3.59
1981	6.84	2.32	3.90
1982	7.11	2.39	3.76
1983	5.09	2.65	3.66
1984	6.70	2.61	3.86
1985	7.41	2.52	4.30
1986	7.49	2.32	4.51
1987	7.52	2.53	4.35
1988	5.31	2.29	4.42
1989	7.30	2.20	4.68
1990	7.44	2.66	4.46
1991	6.82	2.30	4.53
1992	8.25	2.64	4.50
1993	6.32	2.57	4.41
1994	8.70	2.53	4.76
1995	7.12	2.41	4.50
1996	7.98	2.44	4.80
1997	7.95	2.66	4.58
1998	8.44	2.90	4.40
1999	8.40	2.87	4.58
2000	8.59	2.82	4.83
2001	8.67	2.70	5.01
2002	8.12	2.36	5.04
2003	8.92	2.97	5.29
2004	10.06	2.90	5.54
2005	9.29	2.82	5.22
2006	9.36	2.60	5.49
2007	9.46	2.70	5.65
2008	9.66	3.02	5.44
2009	10.34	2.99	5.68
2010	9.59	3.12	5.19
2011	9.24	2.94	5.55

Source: Compiled by Earth Policy Institute from U.S. Department of Agriculture, *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 10 August 2012.

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Corn, Wheat, and Rice Yields in the United States, 1960-2011



Source: USDA

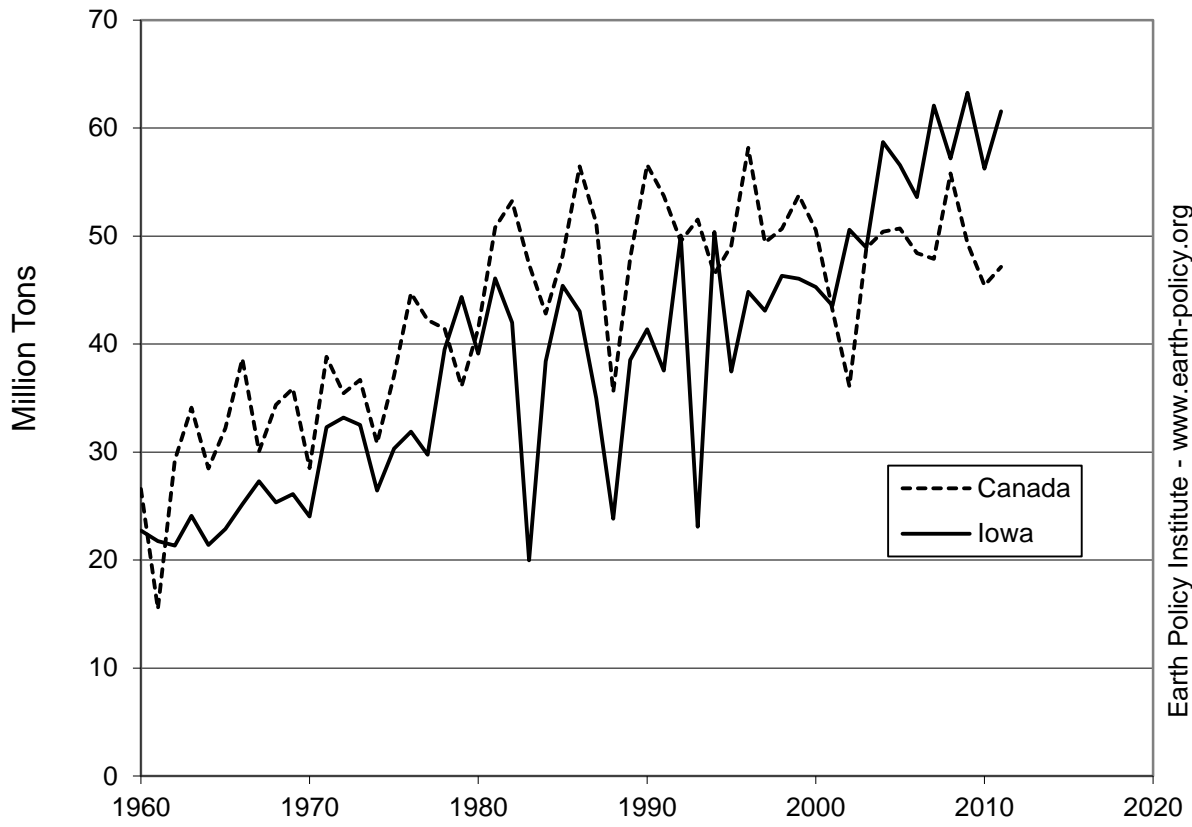
Grain Production in Canada and Iowa, 1960-2011

Year	Canada	Iowa
	Million Tons	
1960	26.6	22.7
1961	15.5	21.7
1962	29.2	21.3
1963	34.1	24.1
1964	28.5	21.4
1965	32.2	22.9
1966	38.6	25.1
1967	30.1	27.3
1968	34.4	25.3
1969	35.9	26.1
1970	28.5	24.0
1971	38.8	32.3
1972	35.4	33.2
1973	36.7	32.5
1974	30.8	26.4
1975	37.1	30.3
1976	44.7	31.9
1977	42.2	29.8
1978	41.4	39.5
1979	36.1	44.4
1980	41.4	39.1
1981	50.8	46.1
1982	53.2	42.0
1983	47.4	20.0
1984	42.8	38.4
1985	48.2	45.4
1986	56.5	43.0
1987	51.2	35.0
1988	35.6	23.8
1989	47.9	38.5
1990	56.6	41.4
1991	53.7	37.6
1992	49.5	50.0
1993	51.5	23.1
1994	46.5	50.4
1995	49.1	37.4
1996	58.2	44.8
1997	49.4	43.1
1998	50.7	46.3
1999	53.8	46.0
2000	50.5	45.3
2001	43.2	43.6
2002	36.1	50.6
2003	48.9	48.9
2004	50.4	58.7
2005	50.7	56.6
2006	48.4	53.6
2007	47.9	62.1
2008	55.8	57.2
2009	49.3	63.2
2010	45.4	56.2
2011	47.1	61.5

Source: Compiled by Earth Policy Institute with data for Canada from U.S. Department of Agriculture (USDA), *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 10 August 2012; and with data for Iowa from USDA, National Agricultural Statistics Service, *Quick Stats 2.0*, electronic database, quickstats.nass.usda.gov, downloaded 27 August 2012.

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Grain Production in Canada and Iowa, 1960-2011



Source: USDA

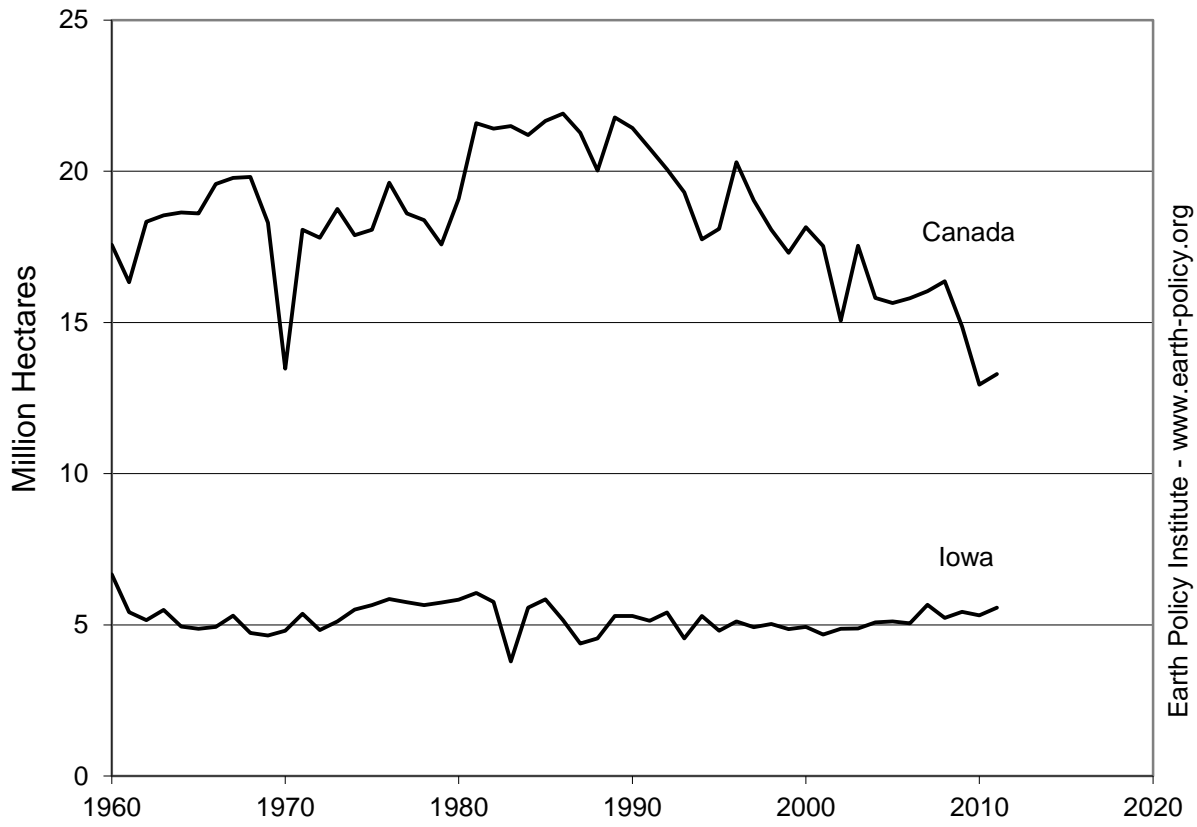
Grain Area Harvested in Canada and Iowa, 1960-2011

Year	Canada	Iowa
	Million Hectares	
1960	17.6	6.7
1961	16.3	5.4
1962	18.3	5.2
1963	18.5	5.5
1964	18.6	4.9
1965	18.6	4.9
1966	19.6	4.9
1967	19.8	5.3
1968	19.8	4.7
1969	18.3	4.6
1970	13.5	4.8
1971	18.1	5.4
1972	17.8	4.8
1973	18.7	5.1
1974	17.9	5.5
1975	18.1	5.7
1976	19.6	5.9
1977	18.6	5.7
1978	18.4	5.7
1979	17.6	5.7
1980	19.1	5.8
1981	21.6	6.1
1982	21.4	5.8
1983	21.5	3.8
1984	21.2	5.6
1985	21.7	5.8
1986	21.9	5.2
1987	21.3	4.4
1988	20.0	4.5
1989	21.8	5.3
1990	21.4	5.3
1991	20.8	5.1
1992	20.1	5.4
1993	19.3	4.6
1994	17.8	5.3
1995	18.1	4.8
1996	20.3	5.1
1997	19.0	4.9
1998	18.1	5.0
1999	17.3	4.9
2000	18.1	4.9
2001	17.5	4.7
2002	15.1	4.9
2003	17.5	4.9
2004	15.8	5.1
2005	15.6	5.1
2006	15.8	5.0
2007	16.0	5.7
2008	16.4	5.2
2009	14.9	5.4
2010	12.9	5.3
2011	13.3	5.6

Source: Compiled by Earth Policy Institute with data for Canada from U.S. Department of Agriculture (USDA), *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 10 August 2012; and with data for Iowa from USDA, National Agricultural Statistics Service, *Quick Stats 2.0*, electronic database, quickstats.nass.usda.gov, downloaded 27 August 2012.

This is part of a supporting dataset for Lester R. Brown, **Full Planet, Empty Plates: The New Geopolitics of Food Scarcity** (New York: W.W. Norton & Company, 2012). For more information, see Earth Policy Institute on-line at www.earth-policy.org.

Grain Area Harvested in Canada and Iowa, 1960-2011



Source: USDA

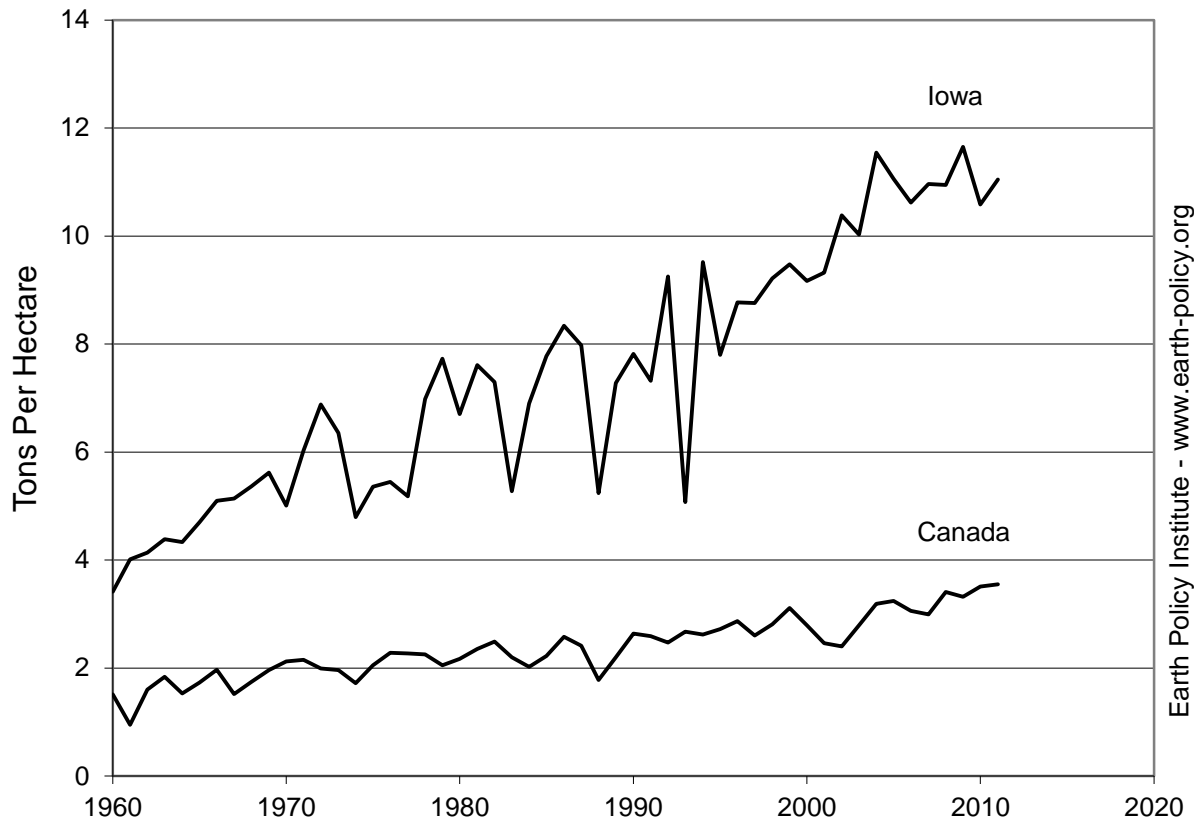
Grain Yields in Canada and Iowa, 1960-2011

Year	Canada Tons Per Hectare	Iowa
1960	1.51	3.41
1961	0.95	4.01
1962	1.60	4.14
1963	1.84	4.38
1964	1.53	4.33
1965	1.73	4.70
1966	1.97	5.09
1967	1.52	5.14
1968	1.74	5.36
1969	1.96	5.62
1970	2.12	5.01
1971	2.15	6.02
1972	1.99	6.88
1973	1.96	6.35
1974	1.72	4.80
1975	2.05	5.36
1976	2.28	5.45
1977	2.27	5.18
1978	2.25	6.98
1979	2.05	7.73
1980	2.17	6.70
1981	2.35	7.61
1982	2.49	7.30
1983	2.20	5.27
1984	2.02	6.90
1985	2.22	7.77
1986	2.58	8.34
1987	2.41	7.98
1988	1.78	5.24
1989	2.20	7.28
1990	2.64	7.82
1991	2.59	7.32
1992	2.47	9.25
1993	2.67	5.07
1994	2.62	9.52
1995	2.72	7.80
1996	2.87	8.77
1997	2.60	8.76
1998	2.81	9.22
1999	3.11	9.48
2000	2.79	9.17
2001	2.46	9.32
2002	2.40	10.38
2003	2.79	10.03
2004	3.19	11.55
2005	3.24	11.06
2006	3.06	10.62
2007	2.99	10.96
2008	3.41	10.94
2009	3.32	11.65
2010	3.51	10.59
2011	3.55	11.04

Source: Compiled by Earth Policy Institute with data for Canada from U.S. Department of Agriculture (USDA), *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 10 August 2012; and with data for Iowa from USDA, National Agricultural Statistics Service, *Quick Stats 2.0*, electronic database, quickstats.nass.usda.gov, downloaded 27 August 2012.

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Grain Yields in Canada and Iowa, 1960-2011



Source: USDA

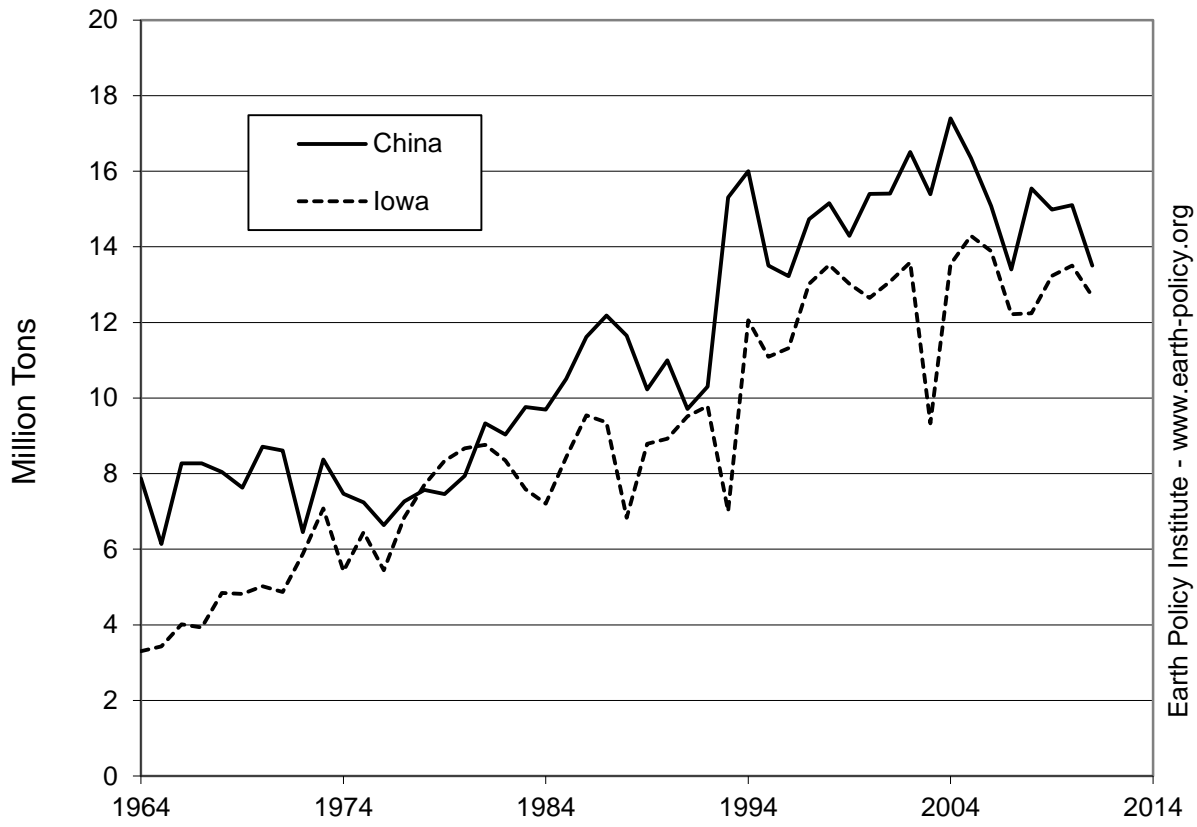
Soybean Production in China and Iowa, 1964-2011

Year	China	Iowa
	Million Tons	
1964	7.9	3.3
1965	6.1	3.4
1966	8.3	4.0
1967	8.3	3.9
1968	8.0	4.8
1969	7.6	4.8
1970	8.7	5.0
1971	8.6	4.9
1972	6.5	5.9
1973	8.4	7.1
1974	7.5	5.4
1975	7.2	6.4
1976	6.6	5.4
1977	7.3	6.8
1978	7.6	7.7
1979	7.5	8.3
1980	7.9	8.7
1981	9.3	8.8
1982	9.0	8.3
1983	9.8	7.6
1984	9.7	7.2
1985	10.5	8.4
1986	11.6	9.5
1987	12.2	9.4
1988	11.6	6.8
1989	10.2	8.8
1990	11.0	8.9
1991	9.7	9.5
1992	10.3	9.8
1993	15.3	7.0
1994	16.0	12.1
1995	13.5	11.1
1996	13.2	11.3
1997	14.7	13.0
1998	15.2	13.5
1999	14.3	13.0
2000	15.4	12.6
2001	15.4	13.1
2002	16.5	13.6
2003	15.4	9.3
2004	17.4	13.5
2005	16.4	14.3
2006	15.1	13.9
2007	13.4	12.2
2008	15.5	12.2
2009	15.0	13.2
2010	15.1	13.5
2011	13.5	12.7

Source: Compiled by Earth Policy Institute with data for China from U.S. Department of Agriculture (USDA), *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 10 August 2012; and with data for Iowa from USDA, National Agricultural Statistics Service, *Quick Stats 2.0*, electronic database, quickstats.nass.usda.gov, downloaded 27 August 2012.

This is part of a supporting dataset for Lester R. Brown, **Full Planet, Empty Plates: The New Geopolitics of Food Scarcity** (New York: W.W. Norton & Company, 2012). For more information, see Earth Policy Institute on-line at www.earth-policy.org.

Soybean Production in China and Iowa, 1964-2011



Source: USDA

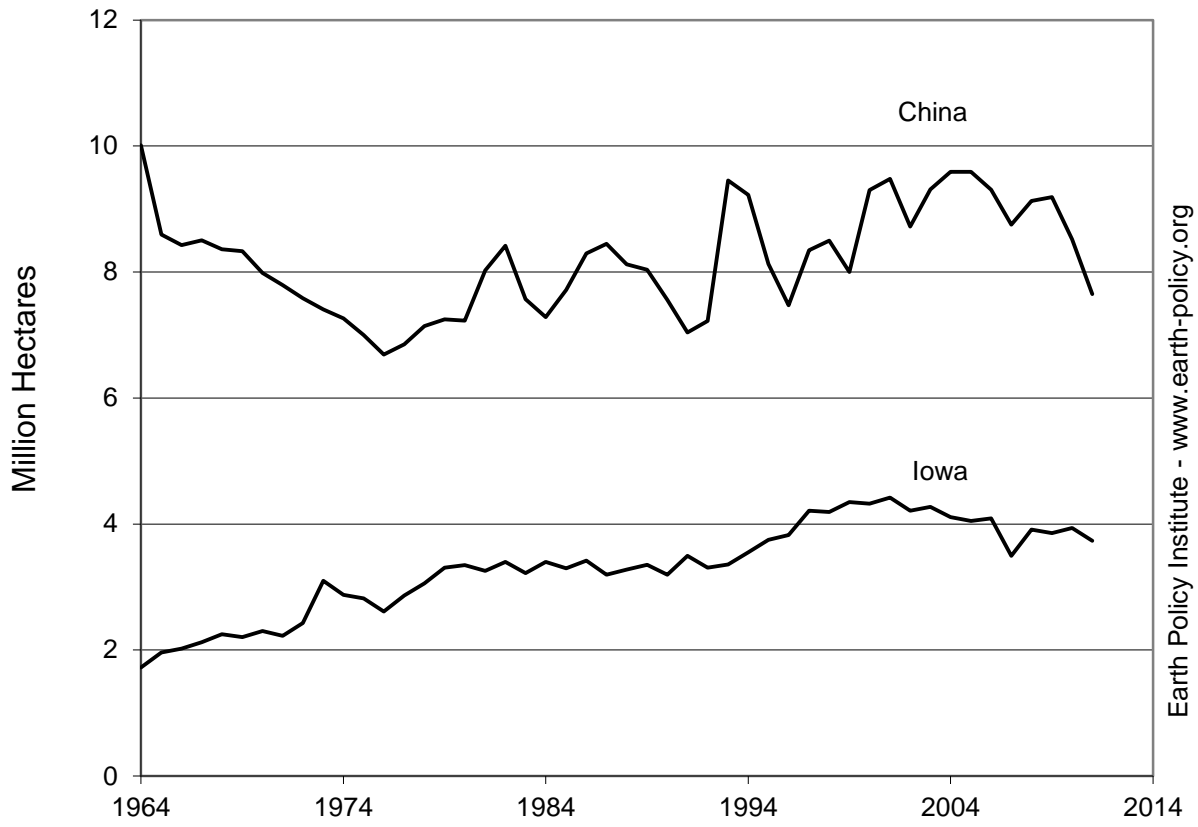
Soybean Area Harvested in China and Iowa, 1964-2011

Year	China	Iowa
	Million Hectares	
1964	10.0	1.7
1965	8.6	2.0
1966	8.4	2.0
1967	8.5	2.1
1968	8.4	2.3
1969	8.3	2.2
1970	8.0	2.3
1971	7.8	2.2
1972	7.6	2.4
1973	7.4	3.1
1974	7.3	2.9
1975	7.0	2.8
1976	6.7	2.6
1977	6.9	2.9
1978	7.1	3.1
1979	7.2	3.3
1980	7.2	3.3
1981	8.0	3.3
1982	8.4	3.4
1983	7.6	3.2
1984	7.3	3.4
1985	7.7	3.3
1986	8.3	3.4
1987	8.4	3.2
1988	8.1	3.3
1989	8.0	3.4
1990	7.6	3.2
1991	7.0	3.5
1992	7.2	3.3
1993	9.5	3.4
1994	9.2	3.5
1995	8.1	3.7
1996	7.5	3.8
1997	8.3	4.2
1998	8.5	4.2
1999	8.0	4.4
2000	9.3	4.3
2001	9.5	4.4
2002	8.7	4.2
2003	9.3	4.3
2004	9.6	4.1
2005	9.6	4.0
2006	9.3	4.1
2007	8.8	3.5
2008	9.1	3.9
2009	9.2	3.9
2010	8.5	3.9
2011	7.7	3.7

Source: Compiled by Earth Policy Institute with data for China from U.S. Department of Agriculture (USDA), *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 10 August 2012; and with data for Iowa from USDA, National Agricultural Statistics Service, *Quick Stats 2.0*, electronic database, quickstats.nass.usda.gov, downloaded 27 August 2012.

This is part of a supporting dataset for Lester R. Brown, **Full Planet, Empty Plates: The New Geopolitics of Food Scarcity** (New York: W.W. Norton & Company, 2012). For more information, see Earth Policy Institute on-line at www.earth-policy.org.

Soybean Area Harvested in China and Iowa, 1964-2011



Source: USDA

Earth Policy Institute - www.earth-policy.org

Soybean Yields in China and Iowa, 1964-2011

Year	China	Iowa
	Tons Per Hectare	
1964	0.79	1.92
1965	0.71	1.75
1966	0.98	1.98
1967	0.97	1.85
1968	0.96	2.15
1969	0.92	2.19
1970	1.09	2.19
1971	1.11	2.19
1972	0.85	2.42
1973	1.13	2.29
1974	1.03	1.88
1975	1.03	2.29
1976	0.99	2.08
1977	1.06	2.39
1978	1.06	2.52
1979	1.03	2.52
1980	1.10	2.59
1981	1.16	2.69
1982	1.07	2.45
1983	1.29	2.35
1984	1.33	2.12
1985	1.36	2.56
1986	1.40	2.79
1987	1.44	2.93
1988	1.43	2.08
1989	1.27	2.62
1990	1.46	2.79
1991	1.38	2.72
1992	1.43	2.96
1993	1.62	2.08
1994	1.73	3.40
1995	1.66	2.96
1996	1.77	2.96
1997	1.76	3.09
1998	1.78	3.23
1999	1.79	2.99
2000	1.66	2.93
2001	1.63	2.96
2002	1.89	3.23
2003	1.65	2.19
2004	1.81	3.30
2005	1.70	3.53
2006	1.62	3.40
2007	1.53	3.50
2008	1.70	3.13
2009	1.63	3.43
2010	1.77	3.43
2011	1.76	3.40

Source: Compiled by Earth Policy Institute with data for China from U.S. Department of Agriculture (USDA), *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 10 August 2012; and with data for Iowa from USDA, National Agricultural Statistics Service, *Quick Stats 2.0*, electronic database, quickstats.nass.usda.gov, downloaded 27 August 2012.

This is part of a supporting dataset for Lester R. Brown, **Full Planet, Empty Plates: The New Geopolitics of Food Scarcity** (New York: W.W. Norton & Company, 2012). For more information, see Earth Policy Institute on-line at www.earth-policy.org.

Soybean Yields in China and Iowa, 1964-2011



Source: USDA

Earth Policy Institute - www.earth-policy.org

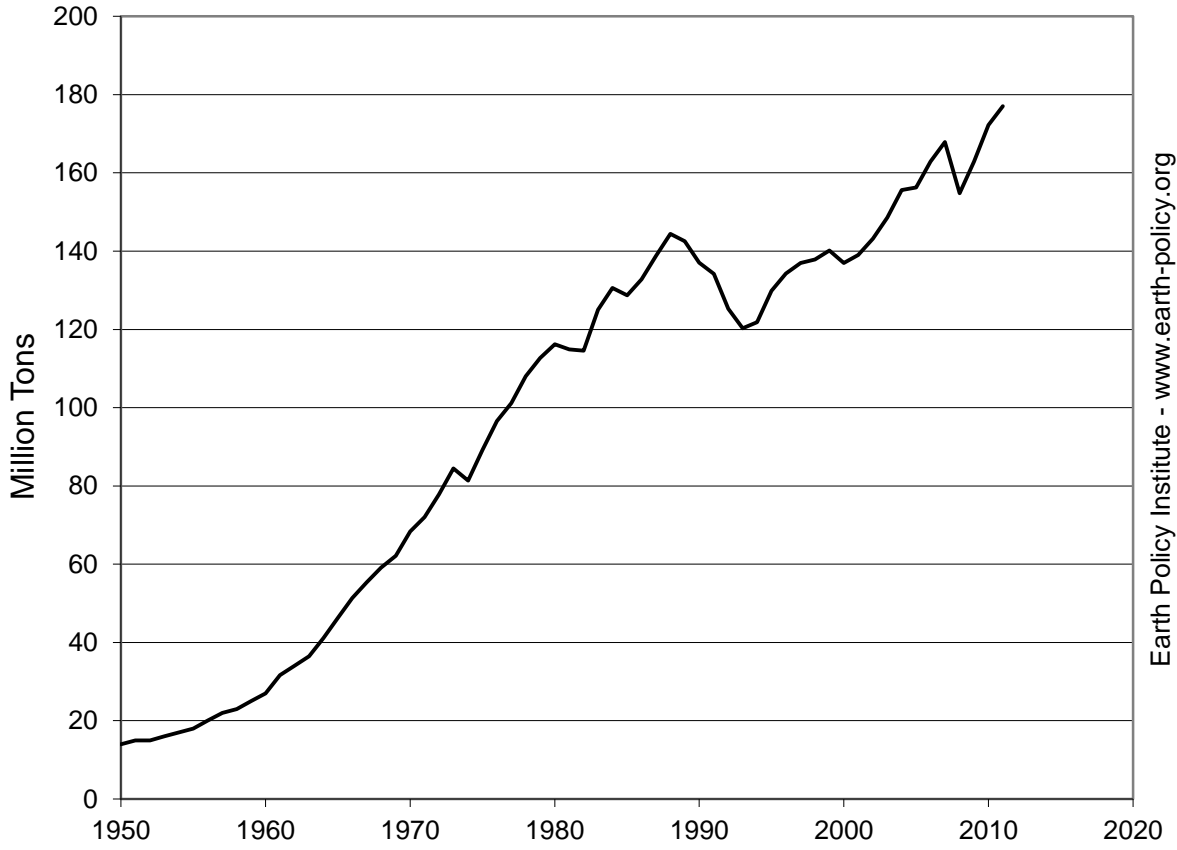
World Fertilizer Consumption, 1950-2011

Year	Fertilizer Consumption Million Tons
1950	14
1951	15
1952	15
1953	16
1954	17
1955	18
1956	20
1957	22
1958	23
1959	25
1960	27
1961	32
1962	34
1963	37
1964	41
1965	46
1966	51
1967	55
1968	59
1969	62
1970	68
1971	72
1972	78
1973	84
1974	81
1975	89
1976	97
1977	101
1978	108
1979	113
1980	116
1981	115
1982	115
1983	125
1984	131
1985	129
1986	133
1987	139
1988	144
1989	143
1990	137
1991	134
1992	125
1993	120
1994	122
1995	130
1996	134
1997	137
1998	138
1999	140
2000	137
2001	139
2002	143
2003	149
2004	156
2005	156
2006	163
2007	168
2008	155
2009	163
2010	172
2011	177

Source: Compiled by Earth Policy Institute with historical data for 1950-1960 compiled by Worldwatch Institute from U.N. Food and Agriculture Organization, *Fertilizer Yearbook* (Rome: various years); 1961-2006 from International Fertilizer Industry Association (IFA), *IFADATA*, electronic database, at www.fertilizer.org/ifa/ifadata/search, downloaded 28 August 2012; and 2007-2011 from Patrick Heffer, *Medium-Term Outlook for World Agriculture and Fertilizer Demand 2011/12 – 2016/17* (Paris: IFA, June 2012), p. 26.

This is part of a supporting dataset for Lester R. Brown, **Full Planet, Empty Plates: The New Geopolitics of Food Scarcity** (New York: W.W. Norton & Company, 2012). For more information, see Earth Policy Institute on-line at www.earth-policy.org.

World Fertilizer Consumption, 1950-2011



Source: Worldwatch, IFA

Earth Policy Institute - www.earth-policy.org

Fertilizer Consumption in Top 10 Countries, 1961-2011

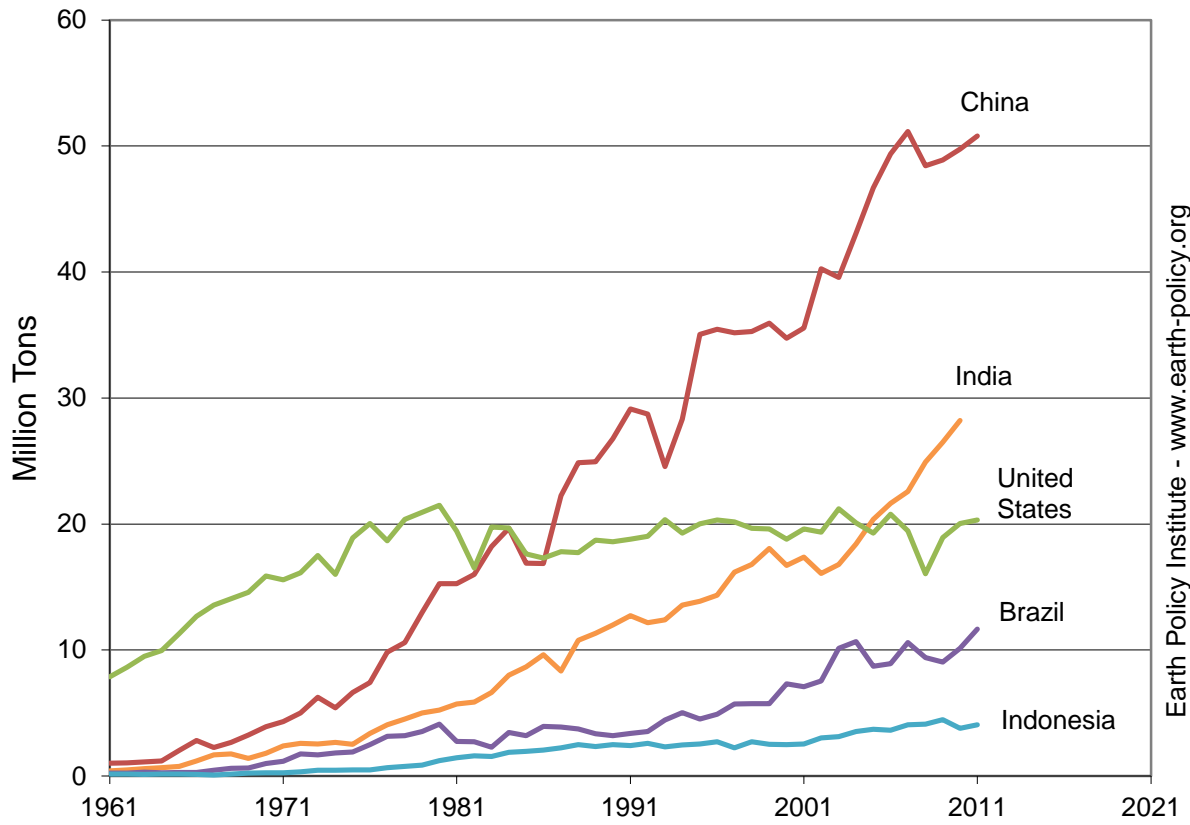
Year	China	India	United States	Brazil	Indonesia	Pakistan	France	Canada	Russia	Germany
Million Tons										
1961	1.0	0.4	7.9	0.2	0.1	0.1	2.6	0.4	n.a.	3.4
1962	1.0	0.5	8.6	0.2	0.2	0.0	2.7	0.4	n.a.	3.6
1963	1.1	0.6	9.5	0.3	0.1	0.1	2.9	0.5	n.a.	3.7
1964	1.2	0.7	10.0	0.3	0.1	0.1	3.1	0.6	n.a.	4.1
1965	2.0	0.8	11.3	0.3	0.1	0.1	3.1	0.7	n.a.	4.2
1966	2.8	1.2	12.7	0.3	0.1	0.1	3.4	0.8	n.a.	4.1
1967	2.3	1.7	13.6	0.4	0.1	0.2	3.8	0.9	n.a.	4.2
1968	2.7	1.7	14.1	0.6	0.1	0.3	4.1	0.7	n.a.	4.3
1969	3.2	1.4	14.6	0.6	0.2	0.3	4.2	0.7	n.a.	4.6
1970	3.9	1.8	15.9	1.0	0.2	0.3	4.6	0.8	n.a.	4.8
1971	4.3	2.4	15.6	1.2	0.3	0.4	4.9	0.9	n.a.	4.9
1972	5.0	2.6	16.1	1.7	0.3	0.4	5.4	1.0	n.a.	4.9
1973	6.3	2.5	17.5	1.7	0.5	0.4	5.8	1.2	n.a.	4.9
1974	5.4	2.7	16.0	1.8	0.5	0.4	4.7	1.2	n.a.	5.1
1975	6.6	2.5	18.9	1.9	0.5	0.6	4.7	1.3	n.a.	4.9
1976	7.4	3.4	20.0	2.5	0.5	0.6	5.1	1.4	n.a.	5.2
1977	9.8	4.1	18.7	3.2	0.6	0.7	5.2	1.6	n.a.	5.1
1978	10.6	4.5	20.4	3.2	0.8	0.9	5.7	1.8	n.a.	5.1
1979	13.0	5.0	20.9	3.5	0.9	1.0	6.0	1.9	n.a.	5.2
1980	15.3	5.2	21.5	4.1	1.2	1.1	5.6	1.9	n.a.	5.2
1981	15.3	5.7	19.4	2.7	1.5	1.1	5.6	2.0	n.a.	4.9
1982	16.0	5.9	16.5	2.7	1.6	1.2	5.6	2.1	n.a.	4.8
1983	18.2	6.6	19.8	2.3	1.5	1.2	5.8	2.3	n.a.	4.6
1984	19.7	8.0	19.7	3.4	1.9	1.3	5.8	2.5	n.a.	4.7
1985	16.9	8.7	17.6	3.2	2.0	1.5	5.7	2.4	n.a.	4.8
1986	16.9	9.6	17.3	3.9	2.0	1.8	5.9	2.2	n.a.	4.8
1987	22.2	8.3	17.8	3.9	2.2	1.7	5.8	2.2	n.a.	4.8
1988	24.9	10.8	17.7	3.7	2.5	1.7	6.0	2.1	n.a.	4.9
1989	24.9	11.3	18.7	3.4	2.3	1.9	6.1	2.2	n.a.	4.6
1990	26.8	12.0	18.6	3.2	2.5	1.9	5.7	2.1	11.1	3.4
1991	29.1	12.7	18.8	3.4	2.4	1.9	5.6	2.2	10.1	3.0
1992	28.7	12.2	19.0	3.5	2.6	2.1	4.5	2.3	5.5	2.8
1993	24.6	12.4	20.4	4.4	2.3	2.1	4.6	2.4	3.9	2.7
1994	28.3	13.6	19.3	5.0	2.5	2.2	4.7	2.4	1.5	2.9
1995	35.1	13.9	20.0	4.5	2.5	2.5	4.9	2.6	1.8	2.8
1996	35.5	14.3	20.3	4.9	2.7	2.4	5.1	2.7	1.6	2.8
1997	35.2	16.2	20.2	5.7	2.2	2.7	5.0	2.7	1.6	2.9
1998	35.3	16.8	19.6	5.7	2.7	2.6	4.8	2.6	1.3	2.9
1999	35.9	18.1	19.6	5.7	2.5	2.8	4.8	2.7	1.4	3.1
2000	34.7	16.7	18.8	7.3	2.5	3.0	4.1	2.5	1.4	2.7
2001	35.6	17.4	19.6	7.1	2.5	2.9	4.2	2.5	1.6	2.6
2002	40.3	16.1	19.4	7.6	3.0	3.0	4.0	2.6	1.4	2.6
2003	39.6	16.8	21.2	10.1	3.1	3.2	4.0	2.7	1.4	2.6
2004	43.1	18.4	20.1	10.7	3.5	3.7	3.9	2.5	1.5	2.6
2005	46.7	20.4	19.3	8.7	3.7	3.9	3.5	2.3	1.5	2.5
2006	49.4	21.6	20.8	8.9	3.6	3.7	3.5	2.8	1.7	2.3
2007	51.2	22.6	19.5	10.6	4.1	3.6	3.8	2.9	1.9	2.6
2008	48.4	24.9	16.0	9.4	4.1	3.7	2.8	2.6	2.3	1.9
2009	48.9	26.5	18.9	9.0	4.5	4.4	2.9	2.8	2.4	2.2
2010	49.7	28.2	20.0	10.1	3.8	3.9	3.4	3.0	2.4	2.5
2011	50.8	n.a.	20.3	11.7	4.1	3.8	3.1	3.2	n.a.	2.4

Note: "n.a." indicates data not available.

Source: Compiled by Earth Policy Institute with 1961-2009 data from International Fertilizer Industry Association (IFA), *IFADATA*, electronic database, at www.fertilizer.org/ifa/ifadata/search, downloaded 28 August 2012; with 2010 data for Russia and India from IFA, *Fertilizer Consumption 2010/11 – 2015/16 Country Reports* (Paris: June 2011), pp. 7, 23; and with 2010-2011 data for all other countries from IFA, *Fertilizer Consumption 2011/12 – 2016/17 Country Reports* (Paris: June 2012), pp. 2, 3, 8, 9, 10, 17, 20, 21.

This is part of a supporting dataset for Lester R. Brown, **Full Planet, Empty Plates: The New Geopolitics of Food Scarcity** (New York: W.W. Norton & Company, 2012). For more information, see Earth Policy Institute on-line at www.earth-policy.org.

Fertilizer Consumption in Top Five Countries, 1961-2011



Source: IFA

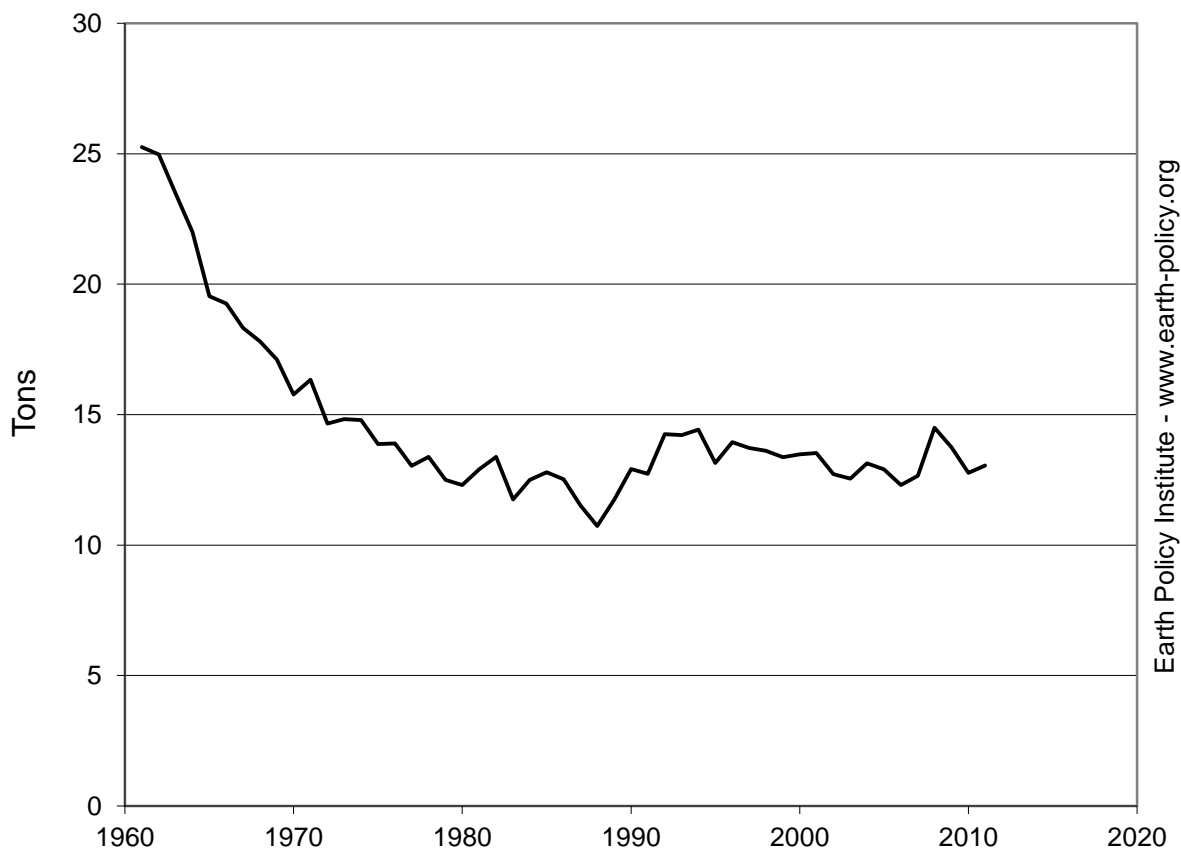
Fertilizer Consumption and Grain Production for the World, 1961-2011

Year	Fertilizer Use	Grain Production	Grain Production Per
	Million Tons		Ton of Fertilizer
1961	32	800	25.3
1962	34	850	25.0
1963	37	858	23.5
1964	41	906	22.0
1965	46	905	19.5
1966	51	988	19.3
1967	55	1,014	18.3
1968	59	1,052	17.8
1969	62	1,063	17.1
1970	68	1,079	15.8
1971	72	1,177	16.3
1972	78	1,141	14.7
1973	84	1,253	14.8
1974	81	1,203	14.8
1975	89	1,237	13.9
1976	97	1,342	13.9
1977	101	1,319	13.0
1978	108	1,445	13.4
1979	113	1,409	12.5
1980	116	1,429	12.3
1981	115	1,482	12.9
1982	115	1,533	13.4
1983	125	1,469	11.8
1984	131	1,632	12.5
1985	129	1,647	12.8
1986	133	1,664	12.5
1987	139	1,601	11.5
1988	144	1,550	10.7
1989	143	1,673	11.7
1990	137	1,769	12.9
1991	134	1,709	12.7
1992	125	1,786	14.3
1993	120	1,711	14.2
1994	122	1,757	14.4
1995	130	1,707	13.1
1996	134	1,872	13.9
1997	137	1,879	13.7
1998	138	1,877	13.6
1999	140	1,874	13.4
2000	137	1,846	13.5
2001	139	1,880	13.5
2002	143	1,821	12.7
2003	149	1,864	12.5
2004	156	2,043	13.1
2005	156	2,016	12.9
2006	163	2,005	12.3
2007	168	2,126	12.7
2008	155	2,244	14.5
2009	163	2,240	13.8
2010	172	2,199	12.8
2011	177	2,309	13.0

Source: Compiled by Earth Policy Institute with 1961-2006 fertilizer data from International Fertilizer Industry Association (IFA), *IFADATA*, electronic database, at www.fertilizer.org/ifa/ifadata/search, downloaded 28 August 2012; with 2007-2011 fertilizer data from Patrick Heffer, *Medium-Term Outlook for World Agriculture and Fertilizer Demand 2011/12 – 2016/17* (Paris: IFA, June 2012), p. 26; and with grain data from U.S. Department of Agriculture, *Production, Supply and Distribution*, electronic database, at fas.usda.gov/psdonline, updated 10 August 2012.

This is part of a supporting dataset for Lester R. Brown, **Full Planet, Empty Plates: The New Geopolitics of Food Scarcity** (New York: W.W. Norton & Company, 2012). For more information, see Earth Policy Institute on-line at www.earth-policy.org.

World Grain Production Per Ton of Fertilizer, 1961-2011



Source: IFA, USDA

Earth Policy Institute - www.earth-policy.org

Fertilizer Consumption and Grain Production in the United States, China, India, 1961-2011

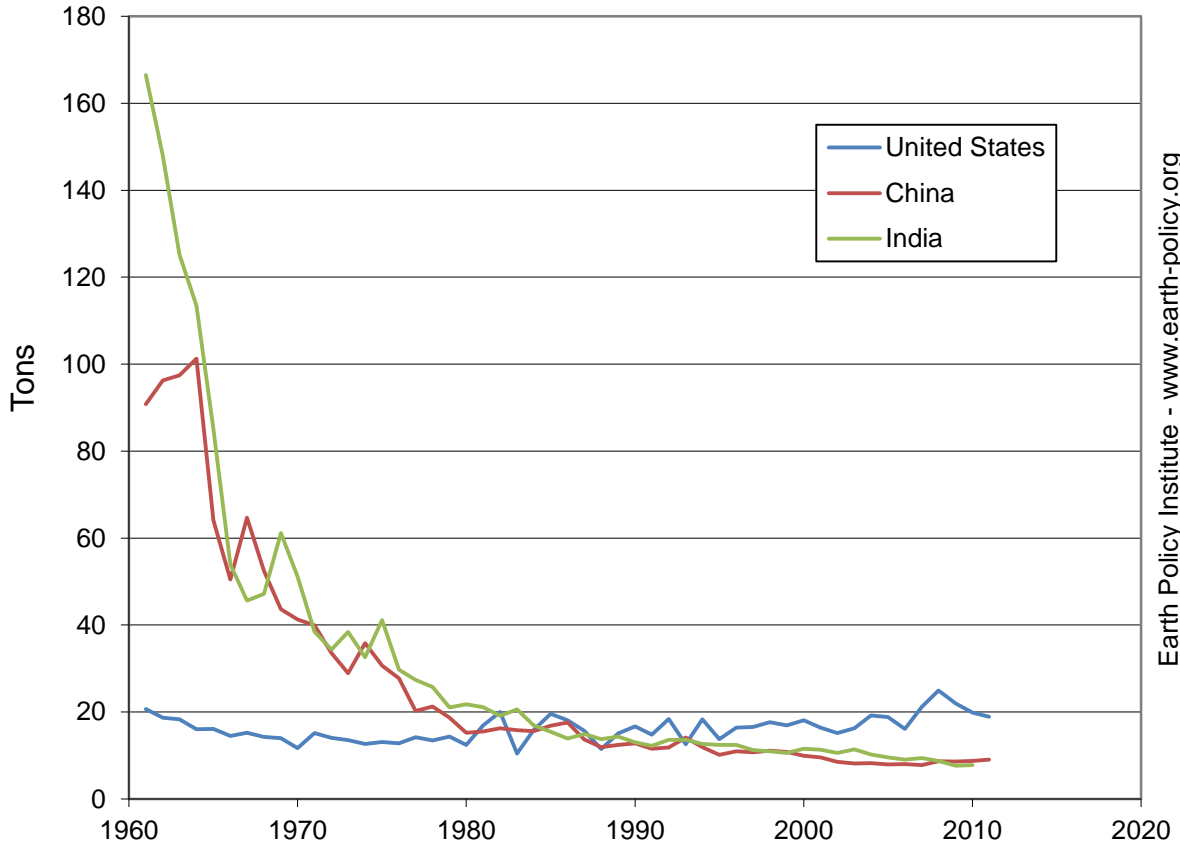
Year	United States			China			India		
	Fertilizer Use	Grain Production	Grain Production Per Ton of Fertilizer	Fertilizer Use	Grain Production	Grain Production Per Ton of Fertilizer	Fertilizer Use	Grain Production	Grain Production Per Ton of Fertilizer
	Million Tons		Tons	Million Tons		Tons	Million Tons		Tons
1961	7.9	162.8	20.7	1.0	91.9	90.8	0.4	69.6	166.4
1962	8.6	161.5	18.7	1.0	99.6	96.3	0.5	70.7	147.9
1963	9.5	173.8	18.3	1.1	108.6	97.4	0.6	71.9	125.2
1964	10.0	159.8	16.0	1.2	121.4	101.2	0.7	74.1	113.5
1965	11.3	181.6	16.1	2.0	130.3	64.1	0.8	64.4	85.0
1966	12.7	183.5	14.5	2.8	141.9	50.5	1.2	64.9	54.0
1967	13.6	206.9	15.3	2.3	146.7	64.7	1.7	76.6	45.6
1968	14.1	201.1	14.3	2.7	140.3	52.5	1.7	82.6	47.2
1969	14.6	204.0	14.0	3.2	141.4	43.6	1.4	86.1	61.2
1970	15.9	185.7	11.7	3.9	161.7	41.3	1.8	92.8	51.2
1971	15.6	236.4	15.2	4.3	172.3	40.0	2.4	91.7	38.5
1972	16.1	226.9	14.1	5.0	167.6	33.5	2.6	89.0	34.4
1973	17.5	236.4	13.5	6.3	180.9	28.9	2.5	97.6	38.4
1974	16.0	203.1	12.7	5.4	194.2	35.9	2.7	86.7	32.6
1975	18.9	247.4	13.1	6.6	202.8	30.7	2.5	103.2	41.1
1976	20.0	256.6	12.8	7.4	206.0	27.7	3.4	100.5	29.8
1977	18.7	264.5	14.2	9.8	198.9	20.2	4.1	111.7	27.4
1978	20.4	274.7	13.5	10.6	225.6	21.3	4.5	116.1	25.7
1979	20.9	300.8	14.4	13.0	242.6	18.7	5.0	105.3	21.0
1980	21.5	267.9	12.5	15.3	233.1	15.3	5.2	113.9	21.8
1981	19.4	328.4	16.9	15.3	237.1	15.5	5.7	120.9	21.1
1982	16.5	330.9	20.1	16.0	260.9	16.3	5.9	112.4	19.2
1983	19.8	206.2	10.4	18.2	288.8	15.9	6.6	136.8	20.6
1984	19.7	312.6	15.9	19.7	306.1	15.6	8.0	135.3	16.9
1985	17.6	345.1	19.6	16.9	284.6	16.9	8.7	133.7	15.4
1986	17.3	313.3	18.1	16.9	296.8	17.6	9.6	134.0	13.9
1987	17.8	278.5	15.6	22.2	304.4	13.7	8.3	124.9	15.0
1988	17.7	204.2	11.5	24.9	297.1	12.0	10.8	148.0	13.7
1989	18.7	282.0	15.1	24.9	309.5	12.4	11.3	162.5	14.4
1990	18.6	310.1	16.7	26.8	343.4	12.8	12.0	156.7	13.1
1991	18.8	277.6	14.8	29.1	337.0	11.6	12.7	155.7	12.2
1992	19.0	350.3	18.4	28.7	341.2	11.9	12.2	165.3	13.6
1993	20.4	256.8	12.6	24.6	348.0	14.2	12.4	168.5	13.6
1994	19.3	353.0	18.3	28.3	336.7	11.9	13.6	171.5	12.6
1995	20.0	275.1	13.7	35.1	356.4	10.2	13.9	172.2	12.4
1996	20.3	333.1	16.4	35.5	388.5	11.0	14.3	178.2	12.4
1997	20.2	333.7	16.5	35.2	378.4	10.8	16.2	182.8	11.3
1998	19.6	346.6	17.6	35.3	392.3	11.1	16.8	184.1	11.0
1999	19.6	332.0	16.9	35.9	390.0	10.9	18.1	191.0	10.6
2000	18.8	339.7	18.1	34.7	345.1	9.9	16.7	193.0	11.5
2001	19.6	321.4	16.4	35.6	340.6	9.6	17.4	197.4	11.4
2002	19.4	294.0	15.2	40.3	343.1	8.5	16.1	170.2	10.6
2003	21.2	345.3	16.3	39.6	323.0	8.2	16.8	191.7	11.4
2004	20.1	385.5	19.2	43.1	355.6	8.3	18.4	188.8	10.3
2005	19.3	363.1	18.8	46.7	371.7	8.0	20.4	194.5	9.5
2006	20.8	335.5	16.2	49.4	394.8	8.0	21.6	196.5	9.1
2007	19.5	412.0	21.2	51.2	398.7	7.8	22.6	213.1	9.4
2008	16.0	400.4	25.0	48.4	419.2	8.7	24.9	217.3	8.7
2009	18.9	416.3	22.0	48.9	421.5	8.6	26.5	203.7	7.7
2010	20.0	397.9	19.8	49.7	435.6	8.8	28.2	220.2	7.8
2011	20.3	384.0	18.9	50.8	458.3	9.0	n.a.	233.3	n.a.

Note: "n.a." indicates data not available.

Source: Compiled by Earth Policy Institute with 1961-2009 data from International Fertilizer Industry Association (IFA), *IFADATA*, electronic database, at www.fertilizer.org/ifa/ifadata/search, downloaded 28 August 2012; with 2010 fertilizer data for India from IFA, *Fertilizer Consumption 2010/11 – 2015/16 Country Reports* (Paris: June 2011), pp. 7, 23; with 2010-2011 fertilizer data for all other countries from IFA, *Fertilizer Consumption 2011/12 – 2016/17 Country Reports* (Paris: June 2012), pp. 2, 3, 8, 9, 10, 17, 20, 21; and with grain data from U.S. Department of Agriculture, *Production, Supply and Distribution*, electronic database, at fas.usda.gov/psdonline, updated 10 August 2012..

This is part of a supporting dataset for Lester R. Brown, *Full Planet, Empty Plates: The New Geopolitics of Food Scarcity* (New York: W.W. Norton & Company, 2012). For more information, see Earth Policy Institute on-line at www.earth-policy.org.

Grain Production Per Ton of Fertilizer in the United States, China, and India, 1961-2011



Source: IFA, USDA

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