

Plan B 4.0 - Supporting Data for Chapter 2

[World Grain Production and Consumption, 1960-2009](#)

GRAPH: World Grain Production and Consumption, 1960-2009

[World Grain Consumption and Stocks, 1960-2009](#)

GRAPH: World Grain Stocks, 1960-2009

GRAPH: World Grain Stocks as Days of Consumption, 1960-2009

[Wheat-Oil Exchange Rate, 1950-2008](#)

[Wheat Production in Saudi Arabia, 1960-2009, with Projection to 2016](#)

GRAPH: Wheat Production in Saudi Arabia, 1960-2009, with Projection to 2016

[Grain Harvested Area Per Person in Selected Countries and the World in 1950 and 2000, with Projection to 2050](#)

[U.S. Corn Production and Use for Fuel Ethanol, 1980-2009](#)

GRAPH: U.S. Corn Used for Fuel Ethanol, 1980-2009

[Countries Overpumping Aquifers in 2009](#)

[World Irrigated Area and Irrigated Area Per Thousand People, 1950-2007](#)

GRAPH: World Irrigated Area, 1950-2007

GRAPH: World Irrigated Area Per Thousand People, 1950-2007

[World Population of Cattle, Sheep, and Goats, 1961-2007](#)

GRAPH: World Livestock Population, 1961-2007

[Livestock and Human Populations in Africa, 1961-2007](#)

GRAPH: Livestock and Human Populations in Africa, 1961-2007

[Livestock and Human Populations in Nigeria, 1961-2007](#)

GRAPH: Livestock and Human Populations in Nigeria, 1961-2007

[Livestock and Human Populations in China, 1961-2007](#)

GRAPH: Livestock and Human Populations in China, 1961-2007

[World Total and Per Person Wild Fish Harvest, 1950-2007](#)

GRAPH: World Total Wild Fish Harvest, 1950-2007

GRAPH: World Wild Fish Harvest Per Person, 1950-2007

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

http://www.earthpolicy.org/index.php?/books/pb4/pb4_data

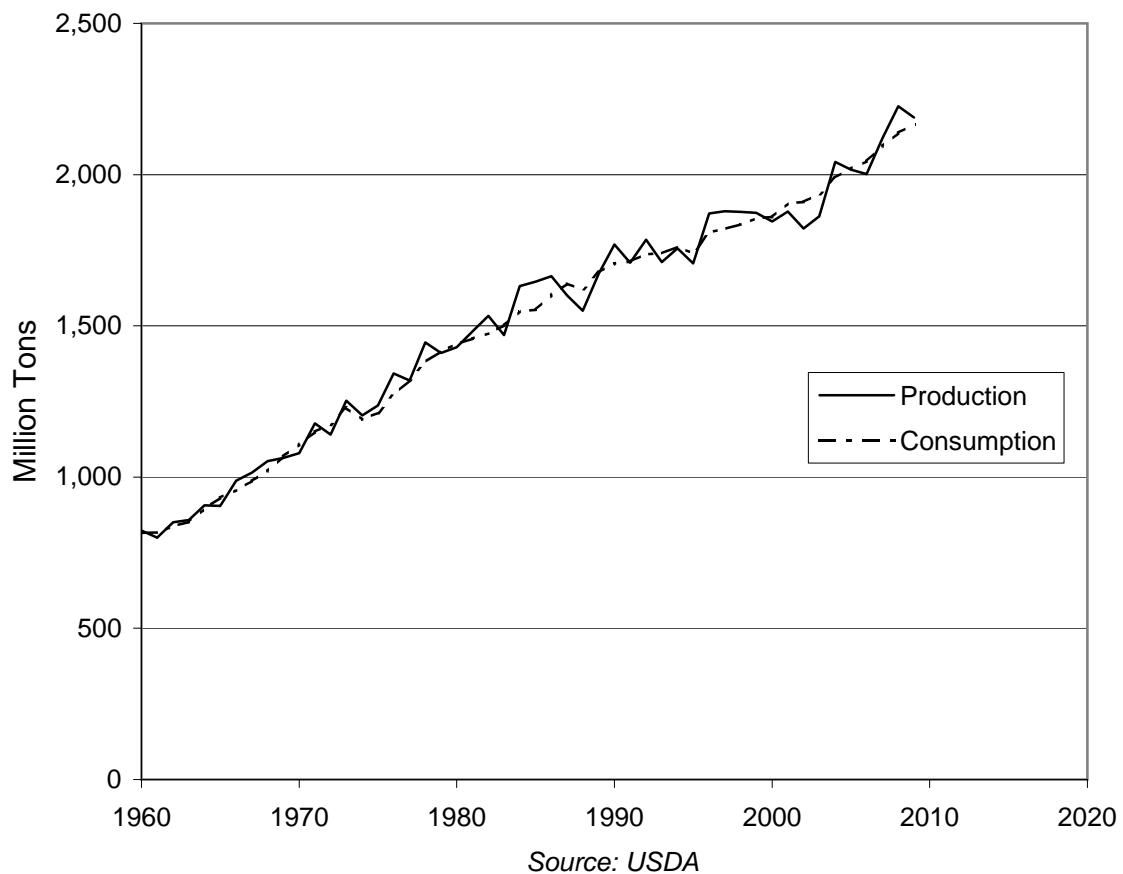
This is part of a supporting dataset for Lester R. Brown, **Plan B 4.0: Mobilizing to Save Civilization** (New York: W.W. Norton & Company, 2009). For more information and a free download of the book, see Earth Policy Institute on-line at www.earthpolicy.org.

World Grain Production and Consumption, 1960-2009

Year	Production Million Tons	Consumption
1960	824	815
1961	800	817
1962	850	838
1963	858	852
1964	906	896
1965	905	932
1966	988	957
1967	1,014	988
1968	1,052	1,020
1969	1,063	1,069
1970	1,079	1,108
1971	1,177	1,150
1972	1,141	1,174
1973	1,253	1,230
1974	1,203	1,190
1975	1,237	1,212
1976	1,342	1,273
1977	1,319	1,320
1978	1,445	1,380
1979	1,410	1,416
1980	1,429	1,440
1981	1,482	1,458
1982	1,533	1,475
1983	1,469	1,501
1984	1,632	1,549
1985	1,646	1,553
1986	1,664	1,601
1987	1,601	1,640
1988	1,550	1,620
1989	1,673	1,677
1990	1,768	1,706
1991	1,709	1,713
1992	1,785	1,737
1993	1,711	1,739
1994	1,756	1,762
1995	1,707	1,739
1996	1,872	1,809
1997	1,879	1,821
1998	1,876	1,835
1999	1,874	1,856
2000	1,845	1,860
2001	1,878	1,905
2002	1,822	1,910
2003	1,862	1,935
2004	2,042	1,990
2005	2,017	2,020
2006	2,002	2,044
2007	2,121	2,095
2008	2,226	2,138
2009	2,189	2,166

Source: U.S. Department of Agriculture, *Production Supply and Distribution*, electronic database at www.fas.usda.gov/psdonline, updated 10 July 2009.

World Grain Production and Consumption, 1960-2009

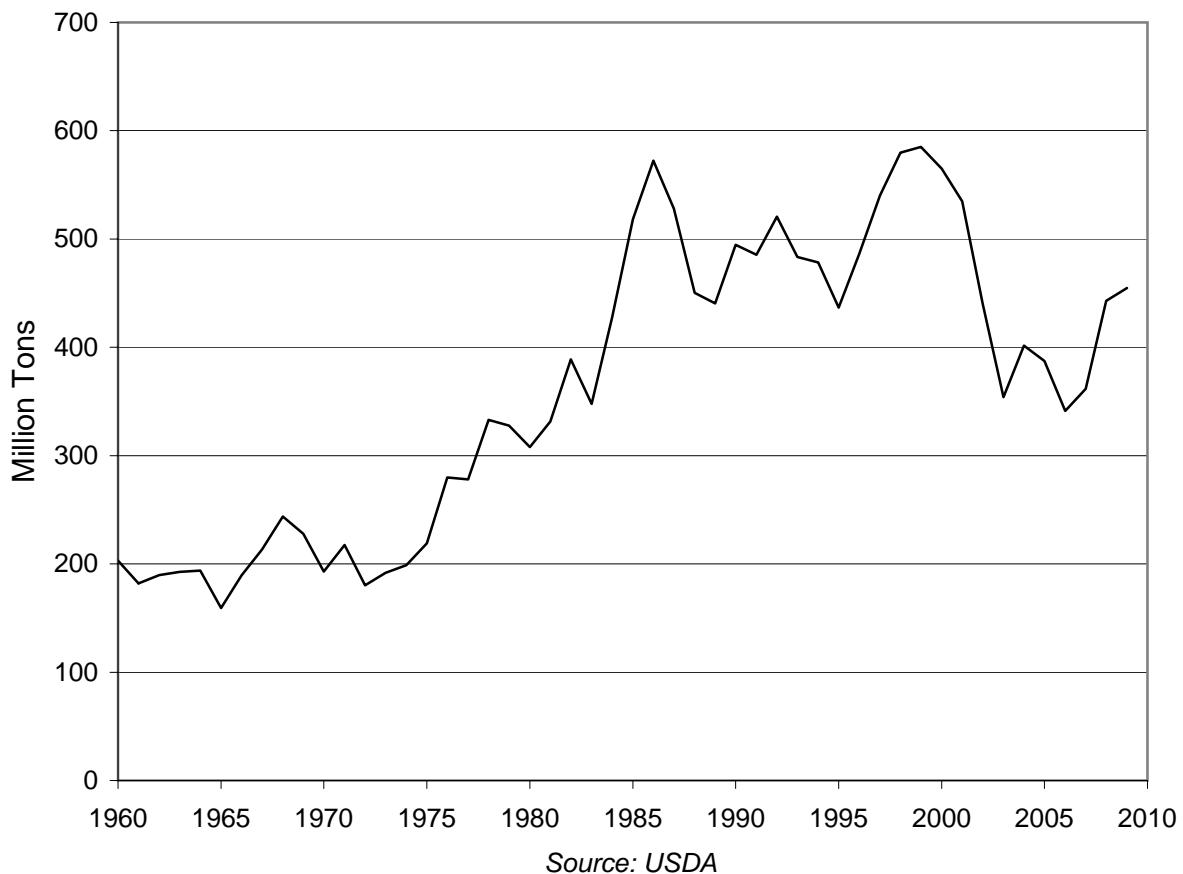


World Grain Consumption and Stocks, 1960-2009

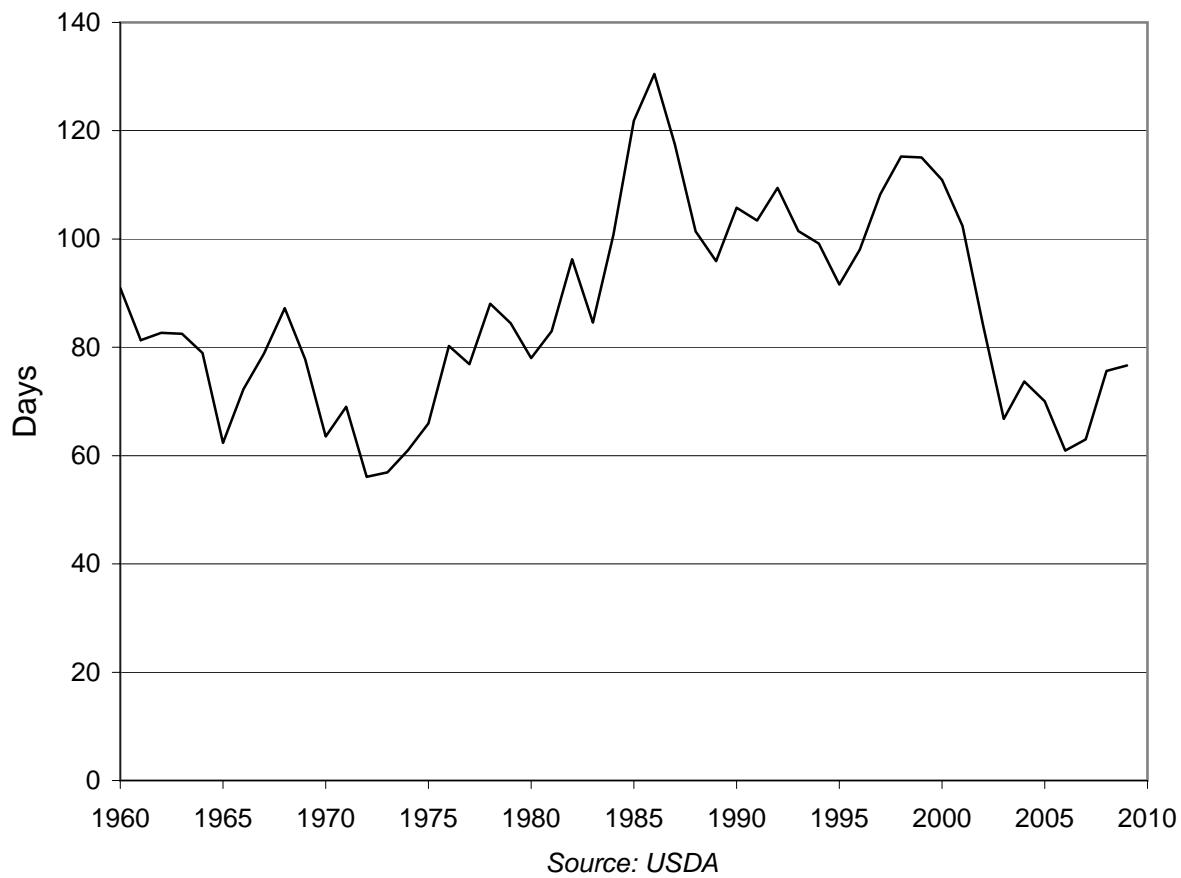
Year	Consumption		Stocks Days of Consumption
	Million Metric Tons	Million Metric Tons	
1960	815	203	91
1961	817	182	81
1962	838	190	83
1963	852	193	83
1964	896	194	79
1965	932	159	62
1966	957	189	72
1967	988	213	79
1968	1,020	244	87
1969	1,069	228	78
1970	1,108	193	64
1971	1,150	218	69
1972	1,174	180	56
1973	1,230	192	57
1974	1,190	199	61
1975	1,212	219	66
1976	1,273	280	80
1977	1,320	278	77
1978	1,380	333	88
1979	1,416	328	84
1980	1,440	308	78
1981	1,458	331	83
1982	1,475	389	96
1983	1,501	348	85
1984	1,549	428	101
1985	1,553	518	122
1986	1,601	572	130
1987	1,640	528	117
1988	1,620	450	101
1989	1,677	441	96
1990	1,706	495	106
1991	1,713	485	103
1992	1,737	521	109
1993	1,739	483	101
1994	1,762	479	99
1995	1,739	437	92
1996	1,809	486	98
1997	1,821	540	108
1998	1,835	580	115
1999	1,856	585	115
2000	1,860	565	111
2001	1,905	535	102
2002	1,910	440	84
2003	1,935	354	67
2004	1,990	402	74
2005	2,020	387	70
2006	2,044	341	61
2007	2,095	362	63
2008	2,138	443	76
2009	2,166	455	77

Source: U.S. Department of Agriculture, *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 10 July 2009.

World Grain Stocks, 1960-2009



World Grain Stocks as Days of Consumption



Wheat-Oil Exchange Rate, 1950-2008

Year	Bushel of Wheat	Barrel of Oil	Bushels Per Barrel
	U.S. Dollars		Ratio
1950	1.89	1.71	1
1951	2.03	1.71	1
1952	1.93	1.92	1
1953	1.89	2.01	1
1954	1.98	2.11	1
1955	1.81	2.11	1
1956	1.84	2.11	1
1957	1.79	2.01	1
1958	1.62	2.07	1
1959	1.58	1.91	1
1960	1.58	1.85	1
1961	1.60	1.79	1
1962	1.75	1.79	1
1963	1.76	1.79	1
1964	1.84	1.79	1
1965	1.62	1.79	1
1966	1.71	1.79	1
1967	1.79	1.79	1
1968	1.71	1.79	1
1969	1.59	1.79	1
1970	1.49	1.79	1
1971	1.68	2.19	1
1972	1.90	2.44	1
1973	3.81	3.27	1
1974	4.89	11.50	2
1975	4.06	11.45	3
1976	3.62	11.55	3
1977	2.81	12.51	4
1978	3.48	12.78	4
1979	4.36	29.83	7
1980	4.70	35.71	8
1981	4.76	34.04	7
1982	4.36	31.54	7
1983	4.28	29.47	7
1984	4.15	28.55	7
1985	3.70	27.37	7
1986	3.13	14.17	5
1987	3.07	18.20	6
1988	3.95	14.77	4
1989	4.61	17.91	4
1990	3.69	22.99	6
1991	3.50	19.37	6
1992	4.11	19.04	5
1993	3.82	16.79	4
1994	4.08	15.95	4
1995	4.82	17.20	4
1996	5.64	20.37	4
1997	4.35	19.27	4
1998	3.43	13.07	4
1999	3.05	17.98	6
2000	3.10	28.23	9
2001	3.45	24.33	7
2002	4.04	24.95	6
2003	3.98	28.89	7
2004	4.27	37.76	9
2005	4.15	53.35	13
2006	5.22	64.27	12
2007	6.95	71.13	10
2008	8.87	97.04	11

Note: Prices in nominal dollars.

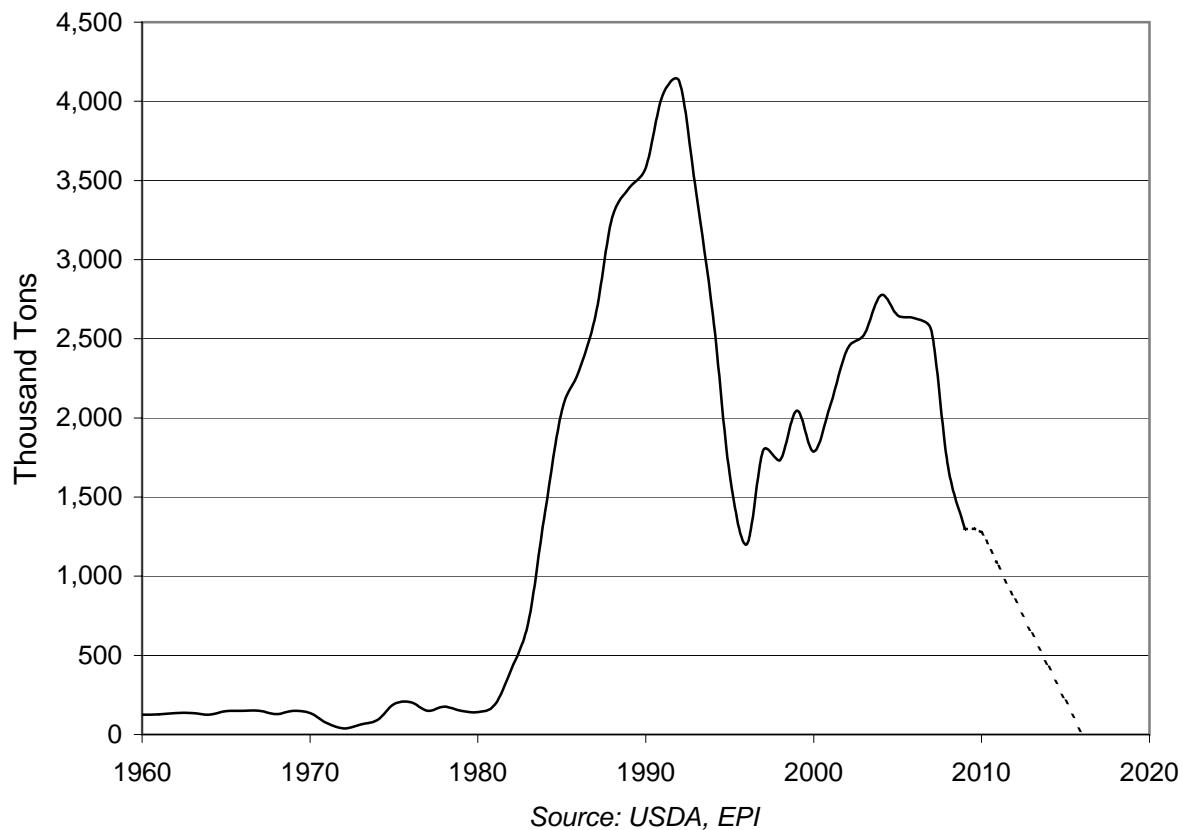
Source: Compiled by Earth Policy Institute from International Monetary Fund, *International Financial Statistics*, electronic database, at www.imfstatistics.org/imf, updated September 2007 and August 2009.

Wheat Production in Saudi Arabia, 1960-2009, with Projection to 2016

Year	Production Thousand Tons
1960	125
1961	127
1962	135
1963	135
1964	125
1965	148
1966	149
1967	150
1968	130
1969	150
1970	135
1971	72
1972	39
1973	63
1974	90
1975	193
1976	205
1977	150
1978	175
1979	150
1980	141
1981	187
1982	412
1983	710
1984	1,402
1985	2,047
1986	2,290
1987	2,649
1988	3,267
1989	3,452
1990	3,580
1991	4,035
1992	4,124
1993	3,430
1994	2,646
1995	1,648
1996	1,200
1997	1,795
1998	1,734
1999	2,046
2000	1,788
2001	2,082
2002	2,436
2003	2,524
2004	2,776
2005	2,648
2006	2,630
2007	2,556
2008	1,700
2009	1,300
2010	1,275
2011	1,063
2012	850
2013	638
2014	425
2015	213
2016	0

Source: Earth Policy Institute with data for 1960-2009 from U.S. Department of Agriculture, *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 10 July 2009; projection to 2016 by Earth Policy Institute based on 2008 Saudi announcement that it would phase out wheat production by one eighth each year until 2016, cited in Andrew England, "Saudis to Phase Out Wheat Production," *Financial Times*, 10 April 2008.

Wheat Production in Saudi Arabia, 1960-2009,
with Projection to 2016



**Grain Harvested Area Per Person in Selected Countries and the World in 1950 and 2000,
with Projection to 2050**

	Area		
	1950	2000	2050
	Hectares		
Australia	0.73	0.90	0.60
Canada	1.42	0.59	0.41
United States	0.51	0.20	0.14
Nigeria	0.26	0.14	0.06
India	0.22	0.10	0.06
China	0.17	0.07	0.06
World Average	0.23	0.11	0.07

Note: 2000 grain area used for 2050 projection.

Source: Grain area for 1950 from U.S. Department of Agriculture (USDA), *Production, Supply, and Distribution* (PS&D), Country Reports, October 1990; 2000 data from USDA, PS&D, electronic database, updated 10 July 2009; population data and projections from U.N. Population Division, *World Population Prospects: The 2008 Revision Population Database*, electronic database, at <http://esa.un.org/unpp>, updated 11 March 2009.

This is part of a supporting dataset for Lester R. Brown, **Plan B 4.0: Mobilizing to Save Civilization** (New York: W.W. Norton & Company, 2009). For more information and a free download of the book, see Earth Policy Institute on-line at www.earthpolicy.org.

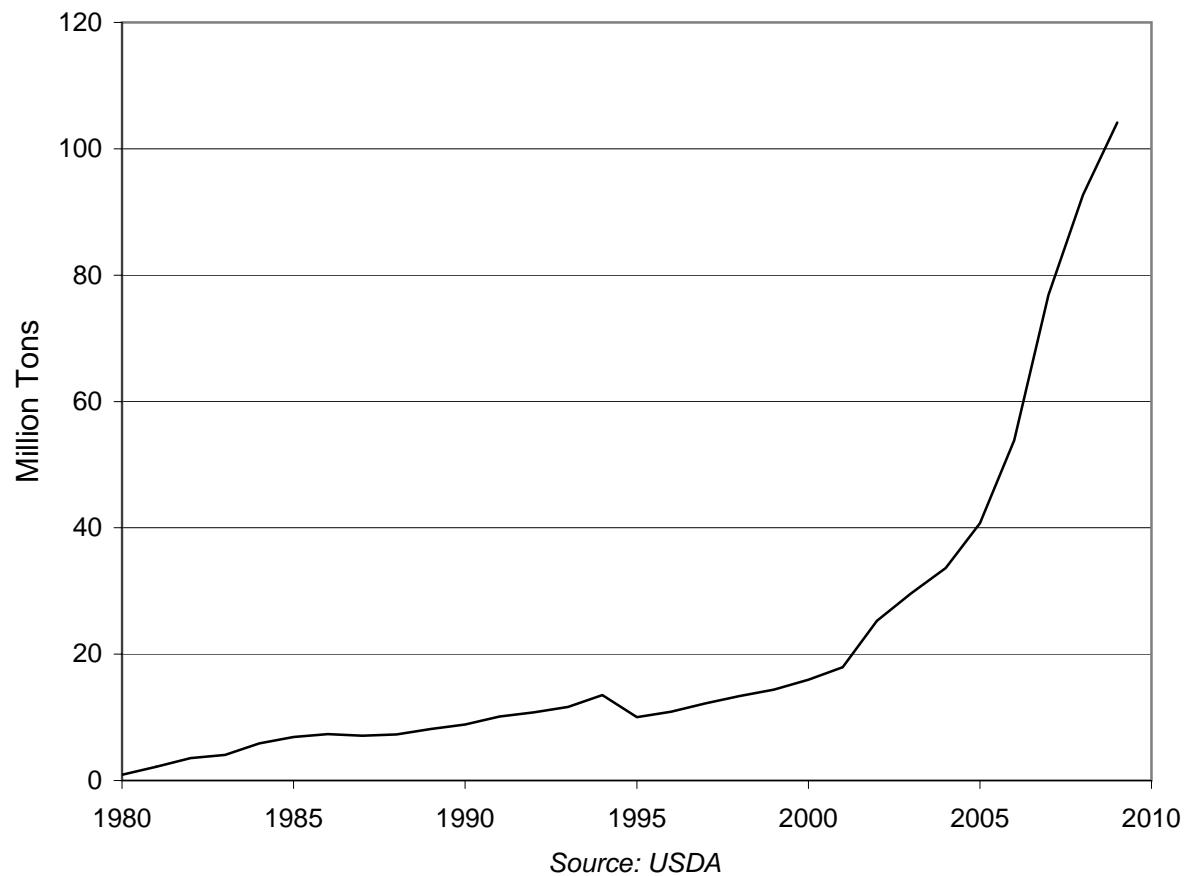
U.S. Corn Production and Use for Fuel Ethanol, 1980-2009

Year	U.S. Corn Production Million Tons	U.S. Grain Production Million Tons	U.S. Corn Used for Fuel Ethanol Million Tons	Share of U.S. Grain Used for Fuel Ethanol * Percent
1980	169	268	0.9	0.3
1981	206	328	2.2	0.8
1982	209	331	3.6	1.1
1983	106	206	4.1	1.2
1984	195	313	5.9	2.9
1985	225	345	6.9	2.2
1986	209	313	7.4	2.1
1987	181	278	7.1	2.3
1988	125	204	7.3	2.6
1989	191	282	8.2	4.0
1990	202	310	8.9	3.1
1991	190	278	10.1	3.3
1992	241	350	10.8	3.9
1993	161	257	11.6	3.3
1994	255	353	13.5	5.3
1995	188	275	10.1	2.8
1996	235	333	10.9	4.0
1997	234	334	12.2	3.7
1998	248	347	13.4	4.0
1999	240	332	14.4	4.1
2000	252	340	15.9	4.8
2001	241	321	17.9	5.3
2002	228	294	25.3	7.9
2003	256	345	29.7	10.1
2004	300	386	33.6	9.7
2005	282	363	40.7	10.6
2006	268	335	53.8	14.8
2007	331	412	76.9	22.9
2008	307	401	92.7	22.5
2009	312	392	104.1	26.0

* Note: Nearly all of the grain used for fuel ethanol in the United States is corn; the small share of other grains used is not included in these figures. Also note that corn used for fuel ethanol in a given year comes from the previous year's crop; therefore, the 104 million tons of corn used for fuel ethanol in 2009 is reported as 26 percent of the 2008 crop of 401 million tons.

Source: Compiled by Earth Policy Institute with corn used for fuel ethanol from U.S. Department of Agriculture (USDA), *Feed Grains Database*, electronic database, at www.ers.usda.gov/Data/FeedGrains, updated 3 August 2009; U.S. corn and grain production from USDA, *Production, Supply and Distribution*, electronic database, at www.fas.usda.gov/psdonline, updated 10 July 2009.

U.S. Corn Used for Ethanol, 1980-2009



Countries Overpumping Aquifers in 2009

Country	Population*
	Million
China	1,346
India	1,198
Iran	74
Israel	7
Jordan	6
Mexico	110
Morocco	32
Pakistan	181
Saudi Arabia	26
South Korea	48
Spain	45
Syria	22
Tunisia	10
United States	315
Yemen	24
<hr/>	
Total	3,443

* Note: Column does not add to total due to rounding.

Source: Compiled by Earth Policy Institute from U.N. Population Division, *World Population Prospects: The 2008 Revision Population Database*, electronic database, at esa.un.org/unpp, updated 11 March 2009.

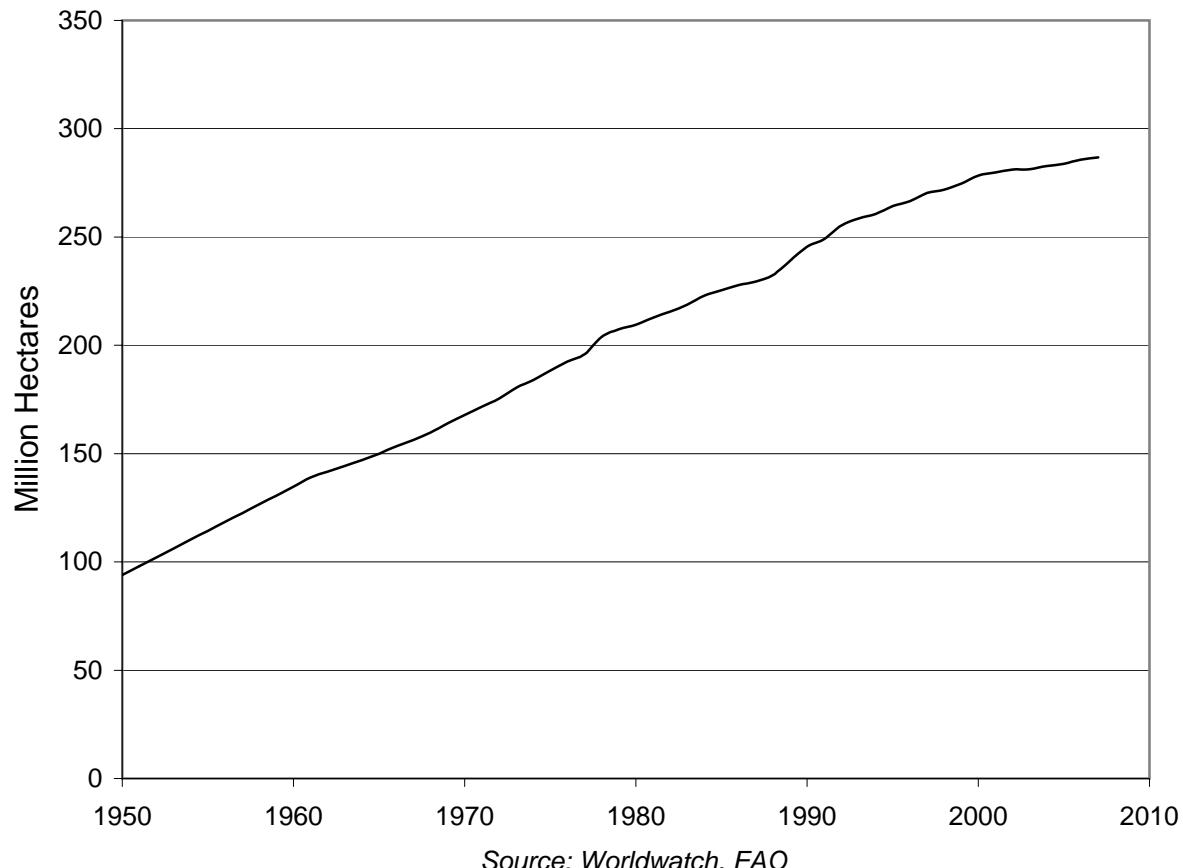
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World Irrigated Area and Irrigated Area Per Thousand People, 1950-2007

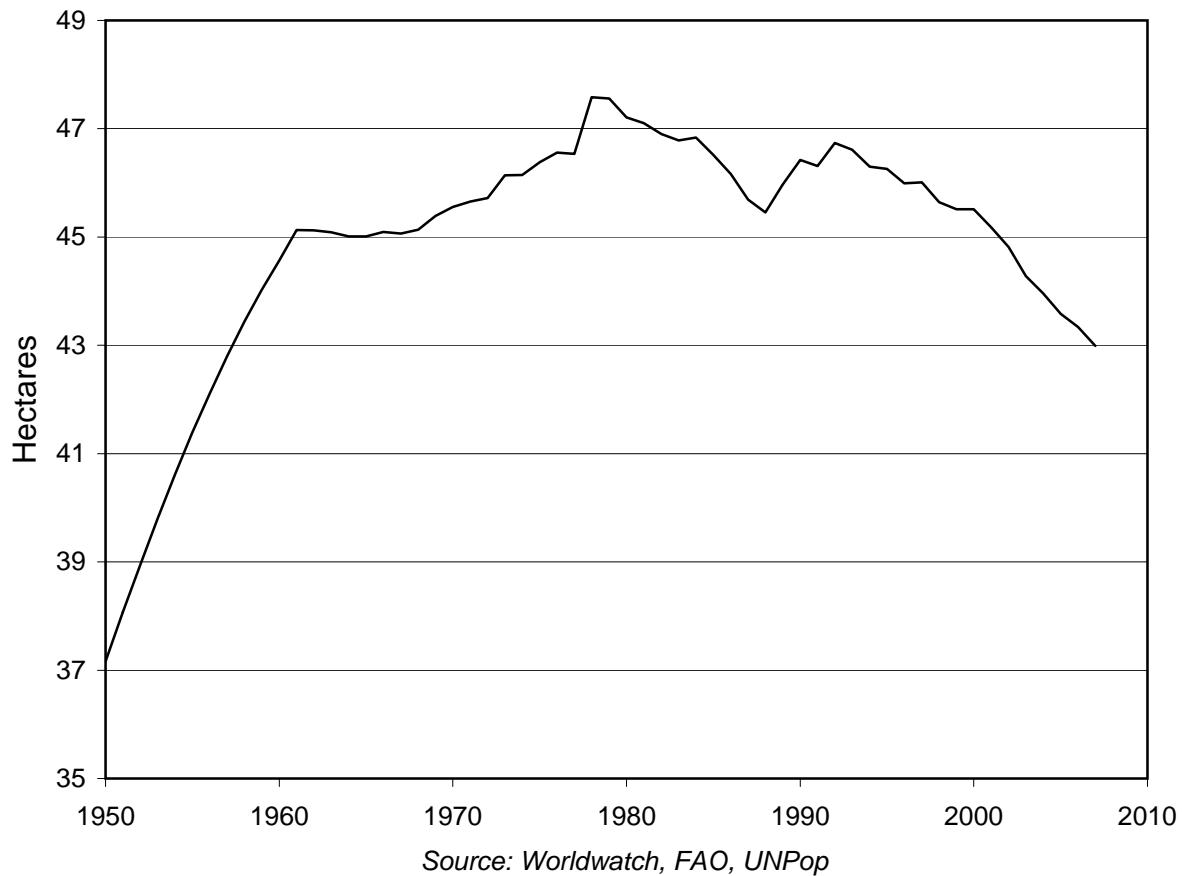
Year	Irrigated Area Per	
	Million Hectares	Hectares
1950	94	37.2
1951	98	38.1
1952	102	39.0
1953	106	39.8
1954	110	40.6
1955	114	41.4
1956	118	42.1
1957	123	42.8
1958	127	43.4
1959	131	44.0
1960	135	44.6
1961	139	45.1
1962	142	45.1
1963	144	45.1
1964	147	45.0
1965	150	45.0
1966	153	45.1
1967	156	45.1
1968	160	45.1
1969	164	45.4
1970	168	45.6
1971	172	45.7
1972	175	45.7
1973	180	46.1
1974	184	46.1
1975	188	46.4
1976	193	46.6
1977	196	46.5
1978	204	47.6
1979	207	47.6
1980	209	47.2
1981	213	47.1
1982	216	46.9
1983	219	46.8
1984	223	46.8
1985	225	46.5
1986	228	46.2
1987	229	45.7
1988	232	45.5
1989	239	46.0
1990	246	46.4
1991	249	46.3
1992	255	46.7
1993	259	46.6
1994	261	46.3
1995	264	46.3
1996	267	46.0
1997	270	46.0
1998	272	45.6
1999	275	45.5
2000	278	45.5
2001	280	45.2
2002	281	44.8
2003	281	44.3
2004	283	44.0
2005	284	43.6
2006	286	43.3
2007	287	43.0

Source: 1950-60 data compiled by Lester R. Brown for "Eradicating Hunger: A Growing Challenge," in Worldwatch Institute, *State of the World 2001* (New York: W.W. Norton and Company, 2001), pp. 52-53; 1961-2007 data from U.N. Food and Agriculture Organization, *ResourceSTAT*, electronic database at <http://faostat.fao.org/site/405/default.aspx>, updated April 2009; population from U.N. Population Division, *World Population Prospects: The 2008 Revision Population Database*, at esa.un.org/unpp, updated 11 March 2009.

World Irrigated Area, 1950-2007



World Irrigated Area Per Thousand People, 1950-2007

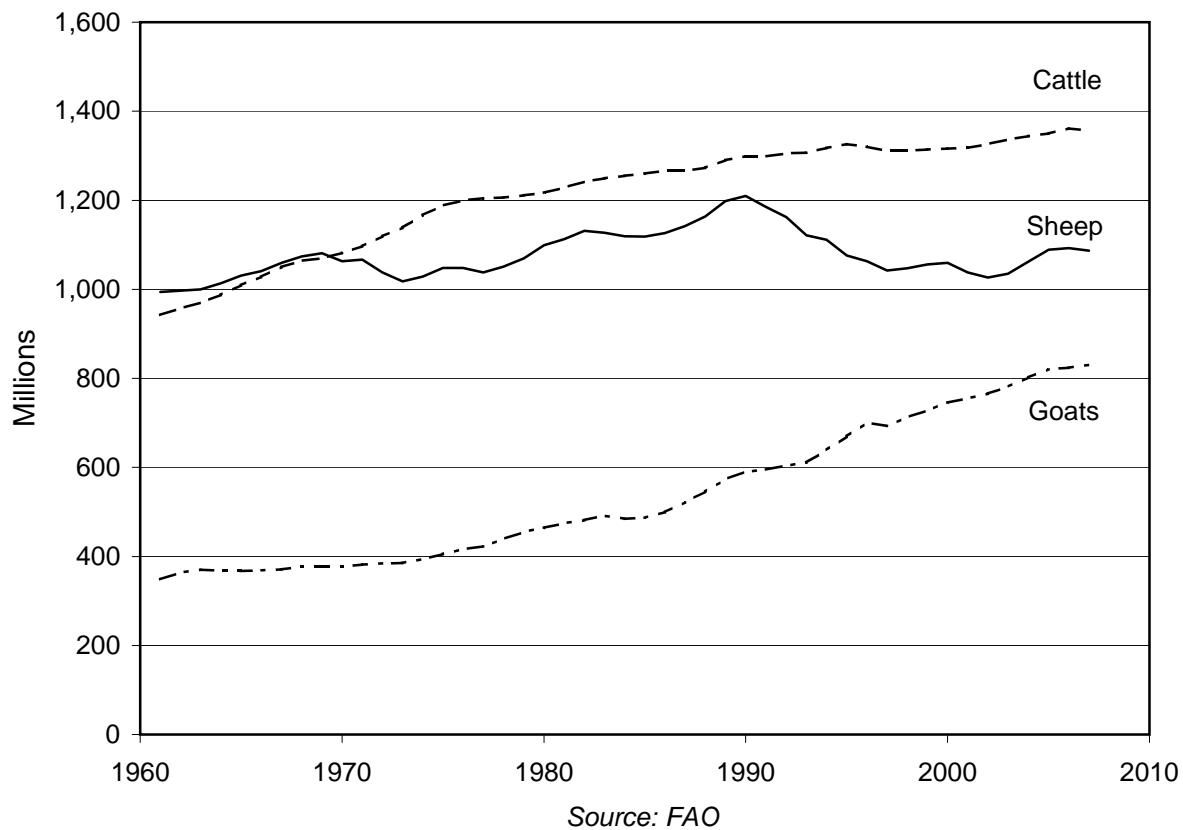


World Population of Cattle, Sheep, and Goats, 1961-2007

Year	Cattle	Sheep	Goats	Total
Million Individuals				
1961	942	994	349	2,285
1962	957	997	364	2,318
1963	970	1,000	370	2,340
1964	988	1,013	368	2,369
1965	1,009	1,031	367	2,407
1966	1,028	1,041	369	2,437
1967	1,050	1,059	371	2,479
1968	1,065	1,074	377	2,516
1969	1,070	1,081	378	2,528
1970	1,082	1,063	378	2,523
1971	1,097	1,066	382	2,545
1972	1,119	1,038	385	2,542
1973	1,139	1,018	385	2,541
1974	1,167	1,029	394	2,590
1975	1,188	1,048	405	2,641
1976	1,200	1,048	416	2,664
1977	1,205	1,038	422	2,665
1978	1,206	1,051	439	2,696
1979	1,211	1,069	455	2,735
1980	1,217	1,099	464	2,780
1981	1,229	1,113	474	2,816
1982	1,242	1,132	482	2,856
1983	1,249	1,127	491	2,868
1984	1,255	1,119	484	2,859
1985	1,260	1,119	486	2,865
1986	1,267	1,127	499	2,892
1987	1,267	1,142	522	2,931
1988	1,273	1,164	545	2,982
1989	1,290	1,198	574	3,062
1990	1,299	1,210	590	3,098
1991	1,299	1,185	595	3,080
1992	1,305	1,162	603	3,071
1993	1,306	1,121	611	3,039
1994	1,317	1,112	639	3,068
1995	1,326	1,076	670	3,073
1996	1,321	1,063	701	3,084
1997	1,311	1,042	693	3,046
1998	1,311	1,047	712	3,070
1999	1,314	1,056	728	3,099
2000	1,316	1,060	745	3,121
2001	1,317	1,038	755	3,110
2002	1,326	1,027	765	3,118
2003	1,336	1,035	782	3,153
2004	1,344	1,062	802	3,208
2005	1,350	1,089	821	3,260
2006	1,362	1,092	824	3,278
2007	1,357	1,087	830	3,274

Source: Compiled by Earth Policy Institute from U.N. Food and Agriculture Organization, *ProdSTAT*, electronic database, at <http://faostat.fao.org/site/573/default.aspx>, updated June 2009.

World Population of Cattle, Sheep, and Goats, 1961-2007



Source: FAO

World Livestock Population, 1961-2007



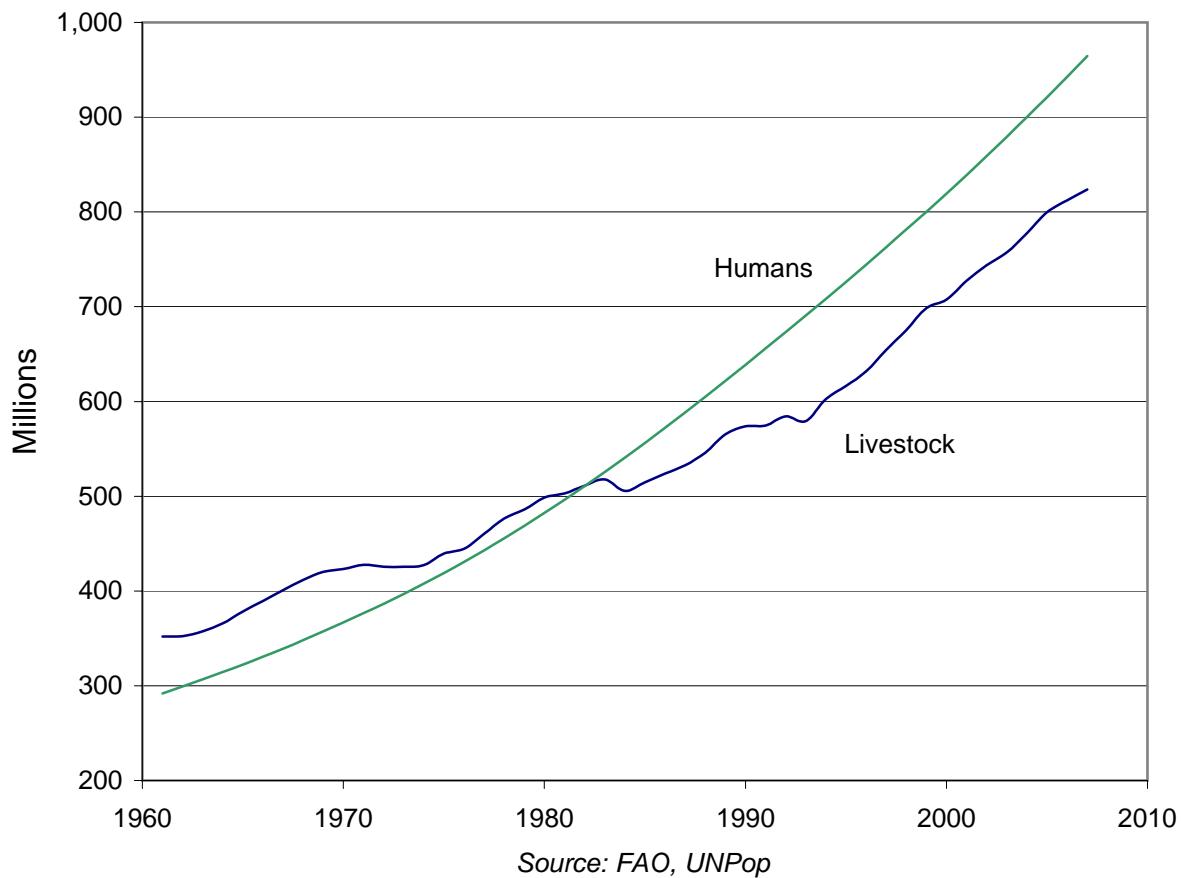
Livestock and Human Populations in Africa, 1961-2007

Year	Livestock*	Humans Million Individuals
1961	352	292
1962	352	299
1963	358	307
1964	366	314
1965	378	322
1966	390	331
1967	401	339
1968	412	348
1969	420	357
1970	423	367
1971	428	376
1972	426	386
1973	425	397
1974	427	408
1975	440	419
1976	444	431
1977	461	443
1978	476	455
1979	486	469
1980	498	482
1981	503	496
1982	511	511
1983	518	525
1984	506	541
1985	515	556
1986	524	572
1987	533	588
1988	546	605
1989	565	622
1990	574	639
1991	574	656
1992	584	673
1993	579	691
1994	603	708
1995	616	726
1996	632	744
1997	654	763
1998	675	781
1999	698	800
2000	708	819
2001	727	839
2002	744	859
2003	757	879
2004	778	900
2005	800	921
2006	812	943
2007	824	965

* Note: Livestock includes cattle, sheep, and goats.

Source: Compiled by Earth Policy Institute from U.N. Food and Agriculture Organization, *ProdSTAT*, electronic database, at <http://faostat.fao.org/site/573/default.aspx>, updated June 2009; population from U.N. Population Division, *World Population Prospects: The 2008 Revision Population Database*, electronic database, at <http://esa.un.org/unpp>, updated 11 March 2009.

Livestock and Human Populations in Africa, 1961-2007



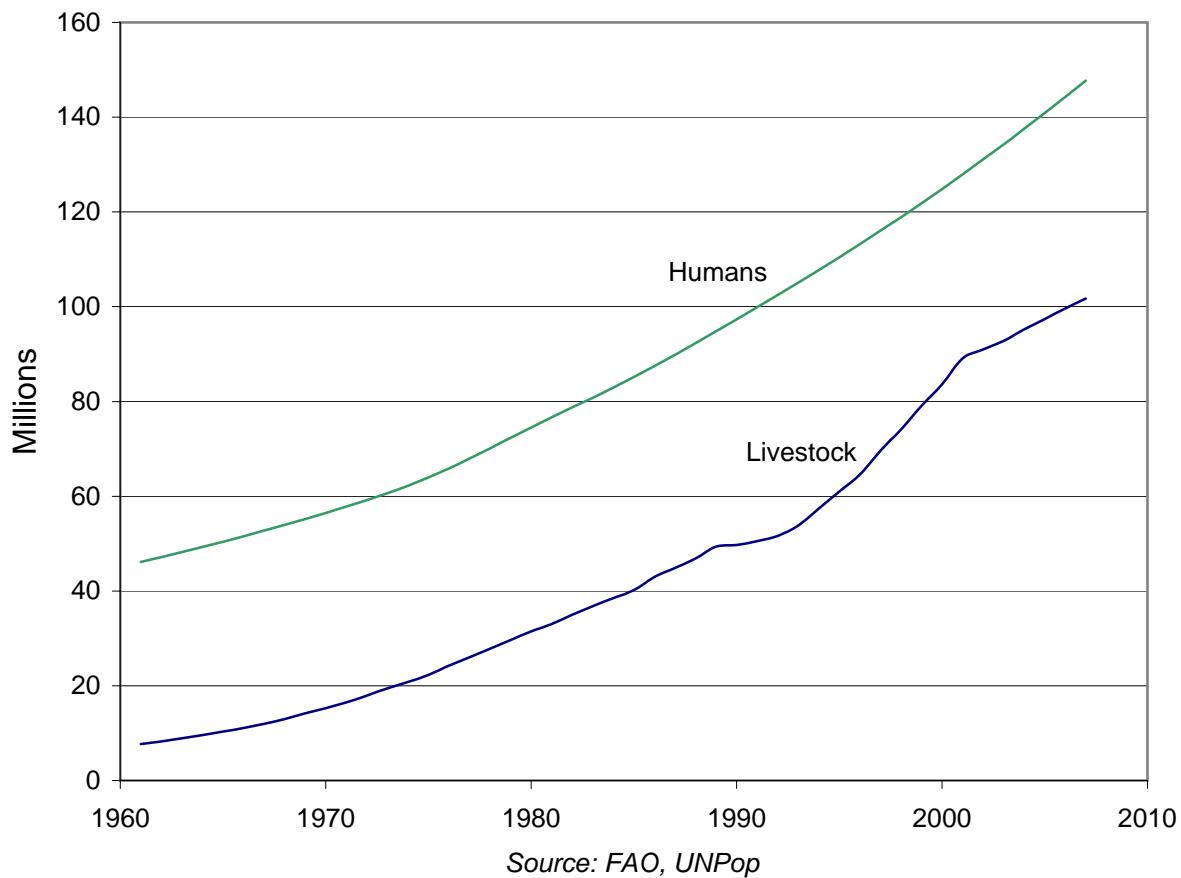
Livestock and Human Populations in Nigeria, 1961-2007

Year	Livestock*	Humans
	Million Individuals	
1961	8	46
1962	8	47
1963	9	48
1964	10	49
1965	10	50
1966	11	52
1967	12	53
1968	13	54
1969	14	55
1970	15	56
1971	16	58
1972	18	59
1973	19	61
1974	21	62
1975	22	64
1976	24	66
1977	26	68
1978	28	70
1979	30	72
1980	31	75
1981	33	77
1982	35	79
1983	37	81
1984	38	83
1985	40	85
1986	43	87
1987	45	90
1988	47	92
1989	49	95
1990	50	97
1991	51	100
1992	52	102
1993	54	105
1994	57	108
1995	61	110
1996	65	113
1997	70	116
1998	74	119
1999	79	122
2000	84	125
2001	89	128
2002	91	131
2003	93	134
2004	95	138
2005	97	141
2006	100	144
2007	102	148

* Note: Livestock includes cattle, sheep, and goats.

Source: Compiled by Earth Policy Institute from U.N. Food and Agriculture Organization, *ProdSTAT*, electronic database, at <http://faostat.fao.org/site/573/default.aspx>, updated June 2009; population from U.N. Population Division, *World Population Prospects: The 2008 Revision Population Database*, electronic database, at <http://esa.un.org/unpp>, updated 11 March 2009.

Livestock and Human Populations in Nigeria, 1961-2007



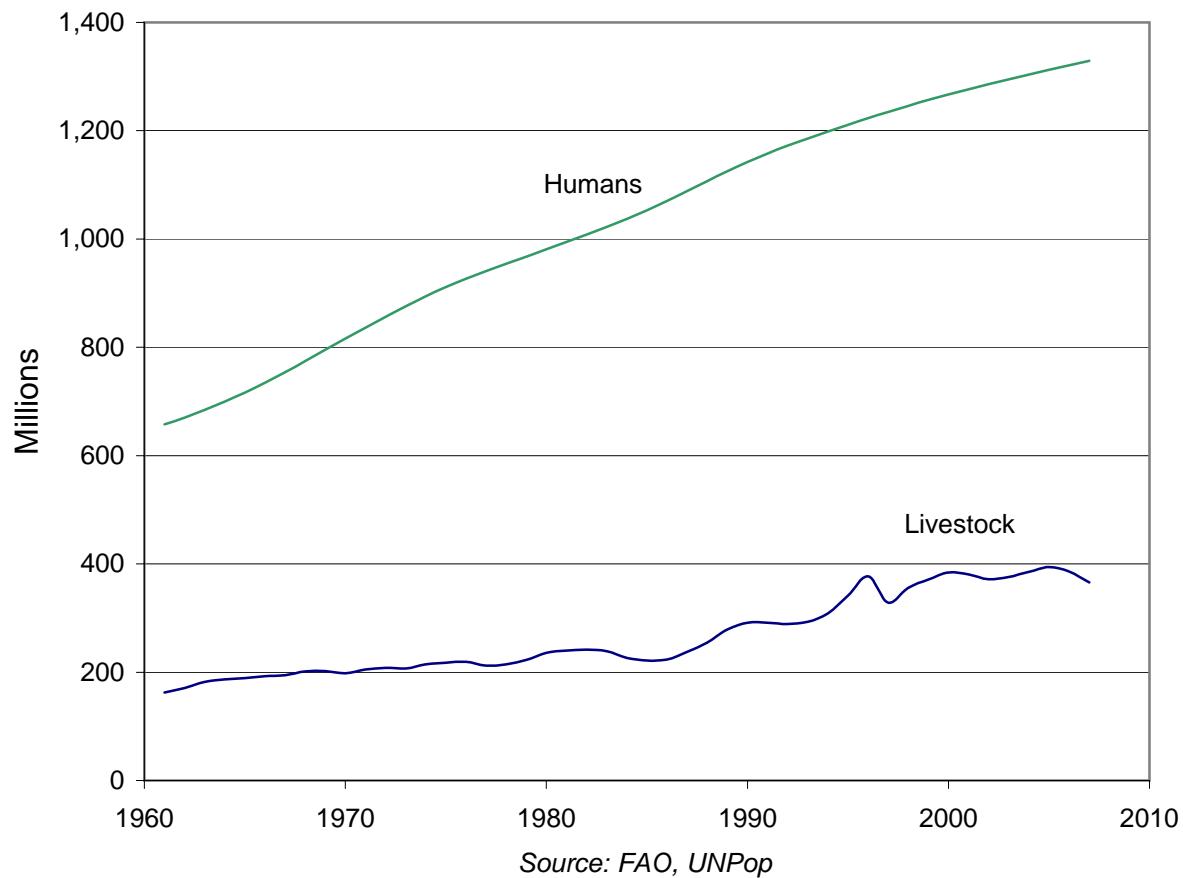
Livestock and Human Populations in China, 1961-2007

Year	Livestock*	Humans
	Million Individuals	
1961	162	658
1962	171	670
1963	182	684
1964	187	700
1965	189	716
1966	193	735
1967	194	754
1968	201	775
1969	202	795
1970	198	816
1971	205	836
1972	208	856
1973	207	876
1974	214	894
1975	218	911
1976	219	927
1977	212	941
1978	214	955
1979	223	968
1980	236	981
1981	240	994
1982	242	1,008
1983	239	1,022
1984	226	1,037
1985	221	1,053
1986	223	1,070
1987	237	1,089
1988	255	1,107
1989	279	1,125
1990	291	1,142
1991	292	1,158
1992	289	1,172
1993	293	1,186
1994	309	1,199
1995	341	1,211
1996	377	1,223
1997	328	1,235
1998	356	1,246
1999	371	1,257
2000	384	1,267
2001	381	1,277
2002	372	1,286
2003	376	1,295
2004	385	1,304
2005	394	1,312
2006	386	1,321
2007	366	1,329

* Note: Livestock includes cattle, sheep, and goats.

Source: Compiled by Earth Policy Institute from U.N. Food and Agriculture Organization, *ProdSTAT*, electronic database, at <http://faostat.fao.org/site/573/default.aspx>, updated June 2009; population from U.N. Population Division, *World Population Prospects: The 2008 Revision Population Database*, electronic database, at <http://esa.un.org/unpp>, updated 11 March 2009.

Livestock and Human Populations in China, 1961-2007

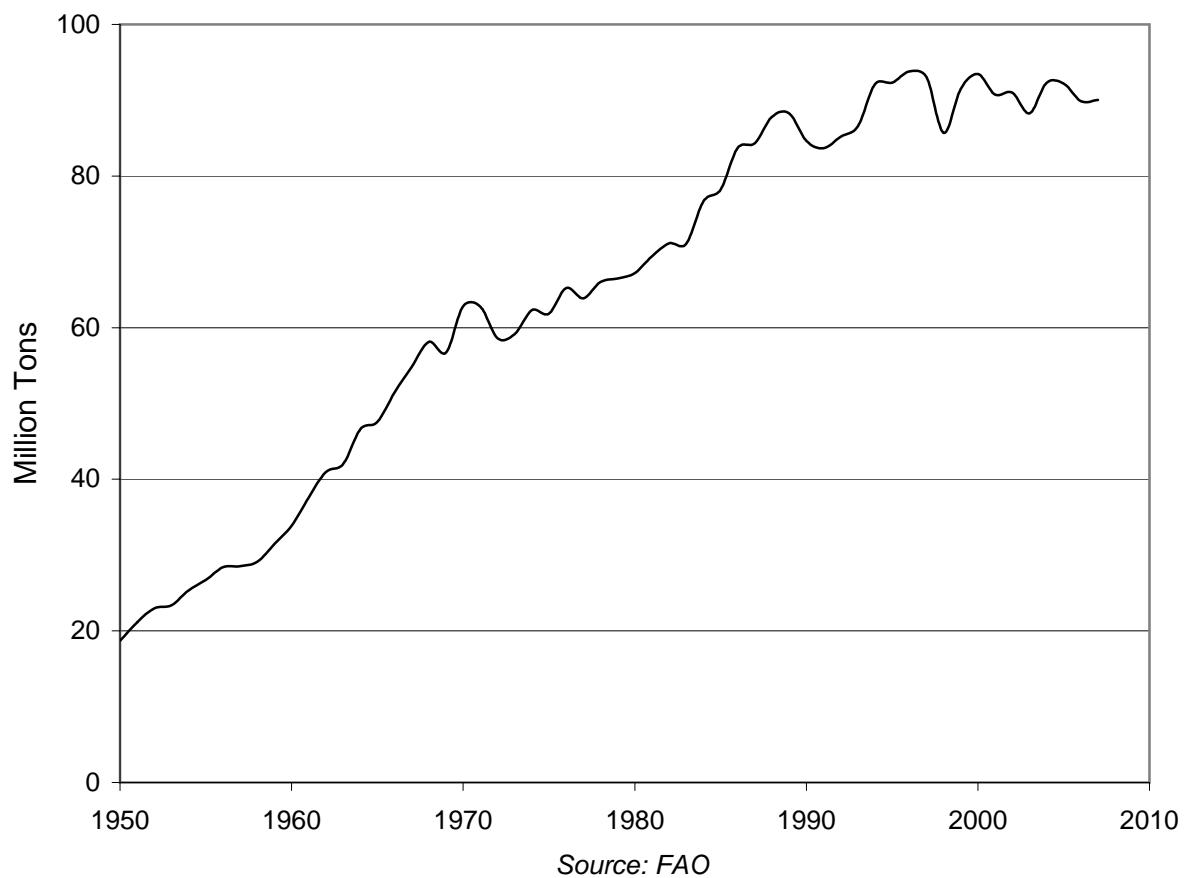


World Total and Per Person Wild Fish Harvest, 1950-2007

Year	Harvest Million Tons	Harvest Per Person Kilograms
1950	18.7	7.4
1951	21.2	8.2
1952	22.9	8.8
1953	23.4	8.8
1954	25.3	9.3
1955	26.7	9.7
1956	28.4	10.1
1957	28.5	10.0
1958	29.1	10.0
1959	31.5	10.6
1960	33.8	11.2
1961	37.6	12.2
1962	41.0	13.0
1963	42.0	13.1
1964	46.6	14.3
1965	47.6	14.3
1966	51.5	15.1
1967	54.8	15.8
1968	58.1	16.4
1969	56.7	15.7
1970	62.8	17.0
1971	62.8	16.7
1972	58.6	15.3
1973	59.1	15.1
1974	62.3	15.6
1975	61.8	15.2
1976	65.2	15.8
1977	63.9	15.2
1978	66.0	15.4
1979	66.5	15.2
1980	67.2	15.1
1981	69.4	15.4
1982	71.1	15.5
1983	71.1	15.2
1984	76.7	16.1
1985	78.2	16.1
1986	83.7	17.0
1987	84.3	16.8
1988	87.8	17.2
1989	88.3	17.0
1990	84.7	16.0
1991	83.6	15.6
1992	85.2	15.6
1993	86.6	15.6
1994	92.1	16.4
1995	92.3	16.2
1996	93.8	16.2
1997	93.1	15.8
1998	85.7	14.4
1999	91.5	15.2
2000	93.5	15.3
2001	90.8	14.7
2002	91.0	14.5
2003	88.3	13.9
2004	92.3	14.3
2005	92.2	14.2
2006	89.9	13.6
2007	90.1	13.5

Source: Compiled by Earth Policy Institute from U.N. Food and Agriculture Organization, *FISHSTAT Plus*, electronic database, at www.fao.org/fishery/statistics/software/fishstat, updated February 2009; U.N. Population Division, *World Population Prospects: The 2008 Revision Population Database*, electronic database, at esa.un.org/unpp, updated 11 March 2009.

World Total Wild Fish Harvest, 1950-2007



World Wild Fish Harvest Per Person, 1950-2007

