Making the Link

Population Health Environment

The number of people on Earth, where they live, and how they live all affect the condition of the environment. People can alter the environment through their use of natural resources and the production of wastes. Changes in environmental conditions, in turn, can affect human health and well-being. Human demographic dynamics, such as the size, growth, distribution, age composition, and migration of populations, are among the many factors that can lead to environmental change. Consumption patterns, development choices, wealth and land distribution, government policies, and technology can mediate or exacerbate the effects of demographics on the environment. The precise impact of a given change depends on the interplay among all these factors, but it is clear that demographic change can affect the environment.

This book edition of the *Making the Link: Population, Health, Environment* wallchart provides information and data on critical linkages between human beings and the environment. The Population Reference Bureau's Population, Health, and Environment (PHE) Program promotes a better understanding of such linkages by examining their causes, their consequences, and how they can be addressed. PHE's logo of a person cradling Earth represents finding a thoughtful balance between human well-being and a healthy planet. For more information on the program or to order the wallchart, please visit the Population Reference Bureau's website (www.prb.org) or write to us at PHE@prb.org.

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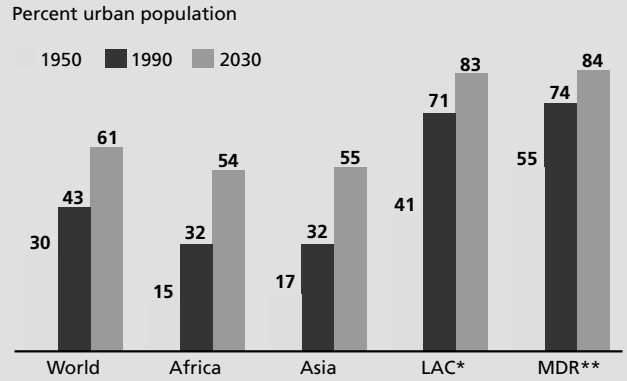
Urbanization has both positive and negative effects on the environment

Almost 3 billion people worldwide live in urban areas, with more people joining them every day. People may choose to move because of a variety of "pull" and "push" factors: They may move to urban areas to take advantage of economic opportunities offered in cities, or because of degraded environments in rural areas. Human pressure on natural habitats in rural areas is often reduced as people move from rural areas to cities. Urbanization can improve living standards, since urban residents tend to have higher incomes, longer life expectancy, and improved access to services. Population growth may slow, because urban women tend to have fewer children than rural women. But cities also produce concentrated amounts of solid waste, sewage, and air pollution, as well as demands for energy, food, and other resources. In many rapidly growing cities, supplies of clean water, electricity, housing, roads, and sewage treatment facilities cannot keep up with population increases. Such rapid growth can hinder the development of adequate infrastructure and regulatory mechanisms for coping with these side effects of growth,

By the year 2030, more than 60 percent of the world's population will live in urban areas



Source: United Nations, *World Urbanization Prospects: The 2000 Revision*.
*LAC=Latin America and the Caribbean **MDR=More developed regions

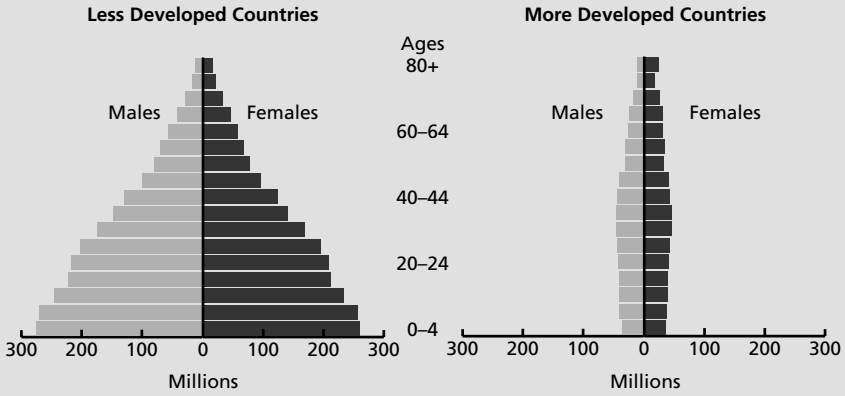
By 2030, more than 60 percent of the world's population will live in urban areas, with over 83 percent of people in LAC and MDR countries living in cities. The percentage of people living in urban areas in Asia and Africa will have more than tripled since 1950.

Demands on natural resources will continue to grow as young people establish their families

There have never been so many people below age 20, particularly in less developed regions. As these young people leave their parents' homes in search of new opportunities, set up their households, and begin having children, levels of migration, urbanization, consumption, and population growth are likely to increase.

One-third of the world's population in less developed countries is under age 15

There will be continued population growth and demand on natural resources as the over 2 billion young people in the world become the world's newest set of parents.



Source: United Nations, *The Sex and Age Distribution of the World Populations: The 2000 Revision* (medium scenario).

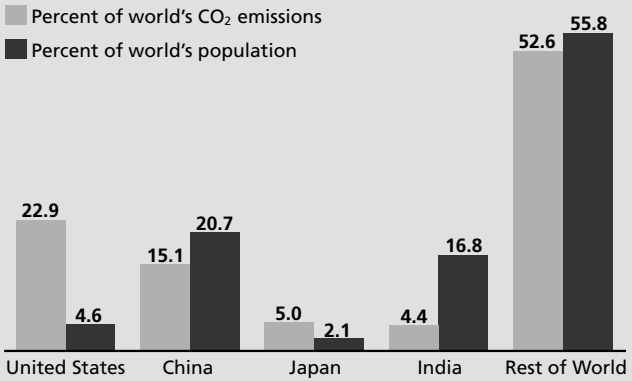
Population, economic, and political factors affect consumption levels and environmental impact

The world's richest countries, home to 20 percent of the world's population, account for 86 percent of total private consumption. The poorest 20 percent of the world's people account for less than 2 percent of private consumption. Environmental degradation in less developed countries is more often the result of poor people struggling to acquire basic essentials, such as food, water, shelter, and fuel. In more developed countries, environmental stress, such as pollution, is usually caused by high consumption levels and greater industrial activity. In highly developed countries, however, certain environmental pressures may subside as production efficiencies and the ability to enforce environmental regulations improve. Environmental pressures may also change due to structural shifts, such as a move from an industrial economy to a service-based economy or as pollution-causing factories are moved to other countries.

Increasing numbers of people and more energy-intensive economic activity could increase carbon dioxide emissions

Rising affluence, increasing popultion, and continued reliance on fossil fuels may result in increased levels of greenhouse gases, including carbon dioxide, that have been implicated in global warming. Global warming can have serious impacts; for example, as the polar caps melt, rising sea levels could threaten human populations in low-lying coastal areas. Shifting climate patterns may also accelerate the extinction of plants and animals, and spread tropical diseases, such as malaria. Recent developments in alternative energy sources, pollution-control technologies, fuel-cell technology, and international agreements may hold promise for reducing future carbon dioxide emissions.

Four countries account for almost half of global CO_2 emissions



Source: Carbon Dioxide Information Analysis Center, U.S. Department of Energy, as cited by the World Bank, *World Development Report 2001*.

In the late 1990s, the United States, home to only about 5 percent of the world's population, was responsible for roughly one-fourth of global carbon dioxide emissions. Less developed countries, however, are releasing a growing percentage of global carbon dioxide emissions.

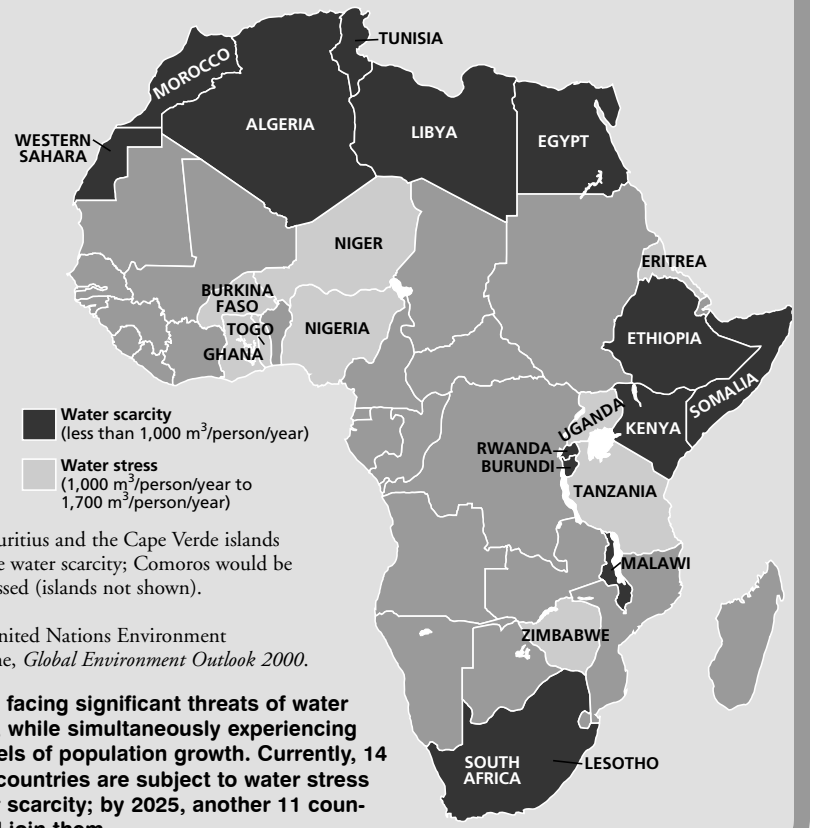
Land-use change often creates threats to human and ecological health

Meeting the needs of a growing population frequently requires some form of land-use change, such as clearing forest land in order to expand food production. These changes often have environmental repercussions; deforestation, for example, can exacerbate the frequency and severity of floods, and contributes to species decline due to habitat loss. Deteriorating environmental conditions associated with expanding agriculture or deforestation can pose threats to human health. For example, deteriorating water quality can contribute to the spread of communicable diseases. Similarly, reliance on chemical fertilizers to improve agricultural production can degrade soil, and improper handling of such compounds can cause cancer and other health problems in humans.

Declining availability of fresh water threatens human well-being and environmental quality

Water is vital for all living organisms and ecosystems, and it sustains humans' health, food production, and industrial activities. Water helps maintain a balance in Earth's systems by providing nutrients for plants and animals and by cooling and cleansing the environment. Freshwater availability can become an issue when water is scarce or when population increases outpace the available water resources. Countries are considered "water scarce" when their renewable water resources drop to below 1,000 cubic meters per person per year; anything below this level is a severe constraint on human nutritional requirements. Ultimately, water shortages pose a threat to human health and environmental quality.

Twenty-five African countries will face water stress by 2025



Note: Mauritius and the Cape Verde islands would face water scarcity; Comoros would be water-stressed (islands not shown).

Source: United Nations Environment Programme, *Global Environment Outlook 2000*.

Africa is facing significant threats of water scarcity, while simultaneously experiencing high levels of population growth. Currently, 14 African countries are subject to water stress or water scarcity; by 2025, another 11 countries will join them.

	DEMOGRAPHIC INDICATORS							HEALTH AND ENVIRONMENTAL INDICATORS									
	Population (millions)		Total Fertility Rate	% of Population Under Age 15	Life Expectancy at Birth, Both Sexes	% of Population Living in Urban Areas	GNI PPP per Capita	CO_2 Emissions per Capita, 1998 (metric tons)	Number of Vehicles per 1,000 People, 2000	Commercial Energy Use per Capita, 1999 (kg oil equivalent)	% of Population Using Improved Drinking Water Sources, 1999		% of Population Using Adequate Sanitation, 1999		Change in Forest Area 1990-2000 (1,000 hectares)	Number of Threatened and Endangered Species	
	Mid-2002	Mid-2025									Total	Rural	Total	Rural		Animals	Plants
WORLD	**6,215**	**7,860**	**2.8**	**30**	**67**	**47**	**7,130**	**3.9**	**176**	**1,671**	**81**	**71**	**57**	**36**	**-93,974**	**—**	**—**
AFRICA	**840**	**1,281**	**5.2**	**43**	**53**	**33**	**1,960**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**-52,636**	**—**	**—**
Algeria	31.4	43.0	2.8	35	70	49	5,040	3.6	53	944	94	88	73	47	266	32	2
Angola	12.7	28.2	6.8	48	45	32	1,180	0.5	20	595	38	40	44	30	-1,242	43	19
Benin	6.6	12.0	5.6	46	54	39	980	0.1	52	323	63	55	23	6	-699	10	11
Burkina Faso	12.6	21.6	6.8	49	47	15	970	0.1	16	—	—	—	29	16	-152	10	2
Burundi	6.7	12.4	6.8	48	41	8	580	0	—	—	—	—	—	—	-147	15	2
Cameroon	16.2	24.7	4.9	43	55	48	1,590	0.1	12	419	62	42	92	85	-2,218	85	155
Chad	9.0	18.2	6.6	48	51	21	870	0	5	—	27	26	29	13	-817	24	2
Congo	3.2	6.3	6.3	46	51	41	570	0.6	20	245	51	17	—	—	-175	18	33
Congo, Dem. Rep. of	55.2	106.0	7.0	48	49	29	680	0.1	—	293	45	26	20	6	-5,324	116	55
Côte d'Ivoire	16.8	25.6	5.2	47	45	46	1,500	0.9	32	388	77	65	—	—	-2,649	33	101
Egypt	71.2	96.1	3.5	36	66	43	3,670	1.7	37	709	95	94	94	91	20	26	2
Eritrea	4.5	8.3	5.9	43	56	16	960	0	2	—	46	42	13	1	-54	25	3
Ethiopia	67.7	117.6	5.9	44	52	15	660	0	2	290	24	13	15	6	-403	55	22
Ghana	20.2	26.5	4.3	43	58	37	1,910	0.2	8	377	64	49	63	64	-1,200	23	115
Guinea	8.4	14.1	5.5	44	48	26	1,930	0.2	5	—	48	36	58	41	-347	26	21
Kenya	31.1	33.3	4.4	44	48	20	1,010	0.3	14	499	49	31	86	81	-931	113	98
Madagascar	16.9	30.8	5.8	45	55	22	820	0.1	8	—	47	31	42	30	-1,174	140	162
Malawi	10.9	12.8	6.5	46	38	20	600	0.1	6	—	57	44	77	70	-707	27	14
Mali	11.3	21.6	6.8	47	47	26	780	0	5	—	65	61	69	58	-993	19	6
Morocco	29.7	40.5	3.1	32	69	55	3,450	1.2	53	352	82	58	75	42	-12	34	2
Mozambique	19.6	20.6	5.6	45	38	28	800	0.1	1	404	60	43	43	26	-637	—	—
Niger	11.6	25.7	8.0	50	45	17	740	0.1	6	—	59	56	20	5	-617	15	2
Nigeria	129.9	204.5	5.8	44	52	36	800	0.6	28	705	57	39	63	45	-3,984	39	119
Rwanda	7.4	8.0	5.8	44	39	5	930	0.1	4	—	41	40	8	8	-150	19	3
Senegal	9.9	16.5	5.2	44	53	43	1,480	0.4	14	318	78	65	70	48	-450	22	7
Sierra Leone	5.6	10.6	6.5	44	39	37	480	0.1	3	—	28	31	28	31	-361	28	43
South Africa	43.6	35.1	2.9	34	51	54	9,160	8.3	147	2,597	86	80	86	73	-80	230	45
Sudan	32.6	49.6	4.9	40	56	27	1,520	0.1	12	503	75	69	62	48	-9,589	33	17
Tanzania	37.2	59.8	5.6	45	52	22	520	0.1	5	457	54	42	90	86	-913	143	236
Tunisia	9.8	11.6	2.1	30	72	63	6,070	2.4	64	811	—	—	—	—	11	24	0
Uganda	24.7	48.0	6.9	51	43	16	1,210	0.1	8	—	50	46	75	72	-913	69	33
Zambia	10.0	14.3	5.7	48	37	38	750	0.2	26	626	64	48	78	64	-8,509	29	8
Zimbabwe	12.3	10.3	4.0	44	38	32	2,550	1.2	64	821	85	77	68	51	-3,199	24	14

	DEMOGRAPHIC INDICATORS							HEALTH AND ENVIRONMENTAL INDICATORS									
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	Mid-2002	Mid-2025									Total	Rural	Total	Rural		Animals	Plants
NORTHERN AMERICA	**319**	**382**	**2.1**	**21**	**77**	**75**	**33,410**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**3,880**	**—**	**—**
Canada	31.3	36.0	1.5	19	79	78	27,170	15.4	592	7,929	100	99	100	99	0	51	1
United States	287.5	346.0	2.1	21	77	75	34,100	19.8	774	8,159	100	100	100	100	3,880	829	168
LATIN AMERICA & THE CARIBBEAN	**531**	**697**	**2.7**	**32**	**71**	**75**	**6,860**	**2.6**	**158**	**1,171**	**84**	**63**	**76**	**47**	**-46,691**	**—**	**—**
Argentina	36.5	47.2	2.6	28	74	90	12,050	3.8	181	1,727	79	30	85	48	-2,851	94	41
Belize	0.3	0.4	3.7	41	72	49	5,240	—	—	—	76	69	42	21	-356	15	28
Bolivia	8.8	13.2	4.1	40	63	64	2,360	1.5	57	562	79	55	66	38	-1,611	54	70
Brazil	173.8	219.0	2.2	30	69	81	7,300	1.8	79	1,068	83	58	72	32	-23,093	270	338
Colombia	43.8	59.7	2.6	33	71	71	6,060	1.7	63	676	91	73	85	51	-1,905	132	213
Costa Rica	3.9	5.2	2.5	32	77	45	7,980	1.4	155	818	98	98	96	95	-158	44	109
Dominican Republic	8.8	12.1	3.1	35	69	61	5,710	2.5	47	904	79	70	71	64	0	33	29
Ecuador	13.0	18.5	3.3	37	71	61	2,910	2.2	48	705	71	51	59	37	-1,372	127	197
El Salvador	6.6	9.3	3.5	36	70	58	4,410	1.0	66	651	74	61	83	78	-72	8	23
Guatemala	12.1	19.8	4.6	44	66	39	3,770	0.9	69	548	92	88	85	76	-537	29	77
Guyana	0.8	0.7	2.5	32	63	36	3,670	—	—	—	94	91	87	81	-486	18	23
Haiti	7.1	9.6	4.7	43	49	35	1,470	0.2	7	265	46	45	28	16	-70	28	27
Honduras	6.7	9.6	4.4	43	66	46	2,400	0.8	77	522	90	82	77	57	-589	23	108
Jamaica	2.6	3.3	2.4	31	75	50	3,440	4.3	50	1,597	71	59	84	66	-54	34	206
Mexico	101.7	131.7	2.9	33	75	74	8,790	3.9	151	1,543	86	63	73	32	-6,306	257	161
Nicaragua	5.4	8.6	4.1	43	68	57	2,080	0.7	12	539	79	59	84	68	-1,172	21	39
Panama	2.9	3.8	2.6	32	74	62	5,680	2.1	116	835	87	86	94	87	-519	48	193
Paraguay	6.0	10.1	4.2	39	71	54	4,450	0.9	24	773	79	58	95	95	-1,230	37	10
Peru	26.7	35.7	2.9	34	69	72	4,660	1.1	43	519	77	51	76	40	-2,688	127	269
Saint Lucia	0.2	0.2	2.0	32	71	30	5,400	—	—	—	98	—	—	—	-5	12	6
Suriname	0.4	0.5	2.8	33	71	69	3,480	—	—	—	95	96	83	34	0	18	27
Trinidad and Tobago	1.3	1.4	1.7	26	71	72	8,220	17.4	115	6,205	86	—	88	—	-22	7	1
Venezuela	25.1	34.8	2.8	34	73	87	5,740	6.7	88	2,253	84	58	74	69	-2,175	67	67

	DEMOGRAPHIC INDICATORS							HEALTH AND ENVIRONMENTAL INDICATORS									
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	Mid-2002	Mid-2025									Total	Rural	Total	Rural		Animals	Plants
ASIA	**3,766**	**4,742**	**2.6**	**30**	**67**	**38**	**4,270**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**-3,655**	**—**	**—**
Afghanistan	27.8	45.9	6.0	43	45	22	—	0	—	—	13	11	12	8	0	27	1
Bangladesh	133.6	177.8	3.3	40	59	23	1,590	0.2	2	139	97	97	53	44	165	65	12
Cambodia	12.3	18.4	4.0	43	56	16	1,440	0.1	47	—	30	25	18	10	-561	57	29
China	1,280.7	1,454.7	1.8	23	71	38	3,920	2.5	16	868	75	66	38	24	18,063	218	167
India	1,049.5	1,363.0	3.2	36	63	28	2,340	1.1	35	482	88	86	31	14	381	215	244
Indonesia	217.0	281.9	2.6	31	68	39	2,830	1.1	87	658	76	65	66	52	-13,124	379	384
Iran	65.6	84.7	2.5	33	69	66	5,910	4.7	84	1,651	95	89	81	74	0	56	1
Iraq	23.6	41.2	5.4	47	58	68	—	3.7	51	1,263	85	48	79	31	0	27	0
Israel	6.6	9.3	2.9	28	78	91	19,330	10.1	282	3,029	—	—	—	—	50	40	0
Japan	127.4	121.1	1.3	14	81	78	27,080	9.0	675	4,070	—	—	—	—	34	148	11
Jordan	5.3	8.7	3.6	40	70	79	3,950	3.0	68	1,028	96	84	99	98	0	20	0
Kazakhstan	14.8	14.7	1.8	29	66	56	5,490	8.2	96	2,374	91	82	99	98	2,390	47	0
Korea, North	23.2	25.7	2.1	27	64	59	—	10.3	—	2,658	100	100	99	100	0	33	3
Korea, South	48.4	50.5	1.5	22	76	79	17,300	7.8	297	3,871	92	71	63	4	-51	39	0
Kyrgyzstan	5.0	6.5	2.4	35	69	35	2,540	1.3	39	504	77	66	100	100	228	16	0
Laos	5.5	8.6	4.9	43	54	17	1,540	0.1	53	—	90	100	46	34	-527	65	18
Malaysia	24.4	35.6	3.2	33	73	57	8,330	5.4	424	1,878	95	90	98	98	-2,369	124	681
Myanmar	49.0	60.2	3.1	33	56	27	—	0.2	2	273	68	60	46	39	-5,169	94	37
Nepal	23.9	36.1	4.1	41	58	11	1,370	0.1	—	358	81	80	27	20	-783	59	6
Pakistan	143.5	242.1	4.8	42	63	33	1,860	0.7	23	444	88	84	61	42	-394	45	2
Philippines	80.0	115.5	3.5	37	68	47	4,220	1.0	45	549	87	80	83	71	-887	194	193
Saudi Arabia	24.0	40.9	5.7	43	72	83	11,390	14.4	157	4,204	95	64	100	100	0	25	3
Sri Lanka	18.9	22.1	2.0	27	72	30	3,460	0.4	74	406	83	80	83	80	-348	53	280
Syria	17.5	27.1	4.1	41	70	50	3,340	3.3	30	1,143	80	64	90	81	0	18	0
Thailand	62.6	72.1	1.8	24	72	31	6,320	3.2	280	1,169	80	77	96	96	-1,124	109	78
Turkey	67.3	85.0	2.5	30	69	66	7,030	3.2	100	1,093	83	84	91	70	220	78	3
Turkmenistan	5.6	7.2	2.2	38	67	44	3,800	5.7	—	2,677	58	31	100	100	0	32	0
Uzbekistan	25.4	37.2	2.7	38	70	38	2,360	4.5	—	2,024	85	78	100	100	46	25	0
Vietnam	79.7	104.1	2.3	31	68	24	2,000	0.6	45	454	56	50	73	70	516	103	126
Yemen	18.6	39.6	7.2	48	59	26	770	0.9	34	184	69	64	45	31	-92	20	52

	DEMOGRAPHIC INDICATORS							HEALTH AND ENVIRONMENTAL INDICATORS									
	Population (millions)		Total Fertility Rate	% of Population Under Age 15	Life Expectancy at Birth, Both Sexes	% of Population Living in Urban Areas	GNI PPP per Capita	CO_2 Emissions per Capita, 1998 (metric tons)	Number of Vehicles per 1,000 People, 2000	Commercial Energy Use per Capita, 1999 (kg oil equivalent)	% of Population Using Improved Drinking Water Sources, 1999		% of Population Using Adequate Sanitation, 1999		Change in Forest Area 1990-2000 (1,000 hectares)	Number of Threatened and Endangered Species	
	Mid-2002	Mid-2025									Total	Rural	Total	Rural		Animals	Plants
EUROPE	**727**	**718**	**1.4**	**17**	**74**	**73**	**16,140**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**8,776**	**—**	**—**
Belarus	9.9	9.4	1.3	18	69	70	7,550	6.0	188	2,381	100	100	—	—	2,562	14	6
Bulgaria	7.8	6.6	1.3	16	72	69	5,560	5.7	329	2,218	100	100	100	100	204	46	0
Czech Republic	10.3	10.3	1.1	16	75	77	13,780	11.5	441	3,754	—	—	—	—	5	37	3
Denmark	5.4	5.9	1.7	19	77	85	27,250	10.1	423	3,773	100	100	—	—	10	17	3
Finland	5.2	5.3	1.7	18	78	61	24,570	10.3	497	6,461	100	100	100	100	80	18	1
France	59.5	64.2	1.9	19	79	74	24,420	6.3	564	4,351	—	—	—	—	616	97	2
Germany	82.4	78.1	1.3	16	78	86	24,920	10.1	565	4,108	—	—	—	—	0	55	12
Hungary	10.1	9.2	1.3	17	72	64	11,990	5.8	286	2,512	99	98	99	98	72	52	1
Ireland	3.8	4.5	1.9	21	77	58	25,520	10.3	311	3,726	—	—	—	—	170	8	1
Italy	58.1	57.5	1.3	14	80	90	23,470	7.2	657	2,932	—	—	—	—	295	92	3
Netherlands	16.1	17.7	1.7	19	78	62	25,850	10.4	452	4,686	100	100	100	100	10	23	0
Norway	4.5	5.0	1.8	20	79	74	29,630	7.6	559	5,965	100	100	—	—	310	21	2
Romania	22.4	20.6	1.2	18	71	55	6,360	4.1	168	1,622	58	16	53	10	147	58	1
Russia	143.5	129.1	1.3	18	65	73	8,010	9.8	153	4,121	99	96	—	—	1,353	132	4
Spain	40.5	43.5	1.2	15	79	64	19,260	6.3	506	3,005	—	—	—	—	860	86	14
Switzerland	7.3	7.6	1.4	17	80	68	30,450	5.9	630	3,738	100	100	100	100	43	41	2
Ukraine	48.7	45.1	1.1	17	68	68	3,700	7.0	142	2,973	—	—	—	—	310	54	1
United Kingdom	60.2	64.8	1.6	19	78	90	23,550	9.2	430	3,871	100	100	100	100	170	26	13
OCEANIA	**32**	**40**	**2.5**	**25**	**75**	**69**	**18,770**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**-3,648**	**—**	**—**
Australia	19.7	23.2	1.7	20	80	85	24,970	17.7	617	5,690	100	100	100	100	-2,820	484	38
Fiji	0.9	1.0	3.3	35	67	46	4,480	—	—	—	47	51	43	12	-17	26	65
New Zealand	3.9	4.6	2.0	23	78	77	18,530	7.9	552	4,770	—	—	—	—	390	90	21
Papua-New Guinea	5.0	8.0	4.8	39	57	15	2,180	0.5	26	—	42	32	82	80	-1,129	123	142
Solomon Islands	0.5	0.9	5.7	43	67	13	1,710	—	—	—	71	65	34	18	-44	54	16
Vanuatu	0.2	0.4	5.3	42	67	21	2,960	—	—	—	88	94	100	100	6	13	9
Western Samoa	0.2	0.2	4.5	41	68	21	5,050	—	—	—	99	100	99	100	-25	12	2

Indicators and Definitions

Population (mid-2002)
Estimates are based on a recent census, official national data, or UN and U.S. Census Bureau projections. The effects of refugee movements, large numbers of foreign workers, and population shifts due to contemporary political events are taken into account to the extent possible (Population Reference Bureau, *2002 World Population Data Sheet,* forthcoming).

Projected Population (2025)
Projected populations based upon reasonable assumptions on the future course of fertility, mortality, and migration. Projections are based upon official country projections, series issued by the UN or the U.S. Census Bureau, or PRB projections (Population Reference Bureau, *2002 World Population Data Sheet,* forthcoming).

Total Fertility Rate (TFR)
The average number of children a woman would have, assuming that current age-specific birth rates remain constant throughout her child-bearing years (usually considered to be ages 15 to 49) (Population Reference Bureau, *2002 World Population Data Sheet,* forthcoming).

Percent of Population Under Age 15
The percentage of the total population under age 15. People under age 15 make up the younger part of the "dependent population"; adults over age 64 make up the rest (Population Reference Bureau, *2002 World Population Data Sheet,* forthcoming).

Life Expectancy at Birth
The average number of years a newborn infant born in mid-2001 can expect to live under current mortality levels (Population Reference Bureau, *2002 World Population Data Sheet,* forthcoming).

Percent of Population Living in Urban Areas
The percentage of the total population living in areas classified as urban by that country. Typically, the population living in towns of 2,000 or more or in national, provincial, or district capitals is classified "urban" (Population Reference Bureau, *2002 World Population Data Sheet,* forthcoming).

GNI PPP per Capita
Gross national income in purchasing power parity (PPP), divided by midyear population. GNI PPP refers to gross national income converted to "international" dollars using a purchasing power parity conversion factor. International dollars indicate the amount of goods and services a given amount of money could buy in the United States (World Bank, *World Development Indicators 2002*).

CO_2 Emissions per Capita
Emissions measured in metric tons and divided by total population. Carbon dioxide (CO_2) is released into the atmosphere when solid waste, fuels, oil, natural gas, coal, wood, and wood products are burned, and during the manufacture of cement (Carbon Dioxide Information Analysis Center, as cited by the World Bank, *World Development Indicators 2001 and 2002*).

Number of Vehicles per 1,000 People
Includes cars, mopeds, motorcycles, buses, and freight vehicles. Population figures refer to the midyear population in the year for which data are available (World Bank, *World Development Indicators 2001 and 2002*).

Commercial Energy Use per Capita
Energy use is presented in a common unit of kilogram of oil equivalent per person. In addition to solid, liquid, and gaseous fuels and nuclear electricity, the total also includes hydropower; geothermal and solar power; combustible renewables; and energy from waste. Use per capita shows the amount of energy consumed within the country equal to domestic production (plus imports and minus exports) per person (International Energy Agency, as cited by the World Bank, *World Development Indicators 2002*).

Percent of Population Using Improved Water Sources
Refers to sources of water that have been intentionally upgraded for human consumption. Data are based on household surveys rather than government data (World Health Organization et al., *Global Water Supply and Sanitation Assessment: 2000 Report*).

Percent of Population Using Adequate Sanitation Facilities
Includes pour-flush latrines and connections to a public sewer. Data based on household surveys rather than government data (World Health Organization et al., *Global Water Supply and Sanitation Assessment: 2000 Report*).

Change in Forest Cover, 1990–2000
Change in number of hectares of forest cover between 1990 and 2000, according to data from the Food and Agriculture Organization's (FAO) Forest Resources Assessment 2000 project. Data for 1990 have been adjusted by FAO to be comparable to 2000 data, and account for changes in definitions and estimation techniques. Forest cover includes natural forest and forest plantations (FAO, *State of the World's Forests 2001*).

Number of Threatened and Endangered Species
Includes species that are critically endangered, endangered, or vulnerable. "Animals" includes mammals, birds, reptiles, amphibians, fish, mollusks, and other invertebrates (for specific definitions and listing criteria, see www.redlist.org/info/categories_criteria.html).

Suggested Sources for Additional Information

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Orians, Carlyn E., and Marina Skumanich. *The Population-Environment Connection: What Does It Mean for Environmental Policy?* Seattle: Battelle Seattle Research Center, 1995.

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