

Resource Consumption 2005



Sources: Food and Agriculture Organization of the United Nations (FAO), International Coffee Organization (ICO), International Energy Agency (IEA), Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Bank.

	Passenger Cars Per 1000 Persons		Total Annual Energy Consumption Per Capita (kgoe) (a)		Annual Gasoline & Diesel Consumption Per Capita (liters per person)		Annual Electricity Consumption Per Capita (kgoe) (a)		Annual Per Capita Consumption (kg per person)								
	1990	2000	1990	2000	1990	2001	1990	2001	Meat		Fish and Fishery Products		Paper and Paperboard		Coffee		
	1990	2000	1990	2000	1990	2001	1990	2001	1992	2002	1992	2002	1992	2002	1993	2003	
World	91	..	1,634	1,640	171	174	179	200	34	40	13	16	45	52	..	..
Asia (excl. Middle East)	17	..	734	892	32	47	59	93	19	28	14	19	22	29	..	..
Armenia	1	..	..	731	..	78	..	87	20	28	1	1	0	3	..	..
Azerbaijan	36	41	..	1,435	..	62	..	181	18	16	4	1	0	19	..	..
Bangladesh	0	..	118	135	1	2	4	9	3	3	8	11	1	1	..	..
Bhutan	..	..	..	..	..	..	..	..	4	3	..	..	0	0	..	..
Cambodia	0	..	..	..	..	..	..	..	14	14	8	28	0	2	..	..
China (b)	1	7	753	896	19	33	44	92	30	52	13	26	19	34	..	..
Georgia	89	55	..	646	..	64	..	104	24	26	7	1	0	1	..	..
India	2	6	429	515	5	9	24	35	5	5	4	5	3	4	0.1	0.1	
Indonesia	7	..	510	690	33	61	15	36	8	8	16	21	10	23	0.6	0.5	
Japan	283	413	3,534	4,127	343	447	568	696	40	44	67	66	228	250	2.8	3.2	
Kazakhstan	50	67	..	2,468	..	159	..	285	74	45	4	4	0	5	..	..
Korea, Dem People's Rep	..	..	1,647	887	45	12	108	65	13	11	34	8	4	5	..	..
Korea, Rep	48	171	2,160	4,082	83	201	204	482	34	48	48	59	124	172	..	..
Kyrgyzstan	44	..	..	497	..	39	..	124	51	39	0	1	0	6	..	..
Lao People's Dem Rep	6	..	..	..	..	..	..	..	12	15	7	15	0	1	..	..
Malaysia	101	..	1,258	2,151	199	351	99	243	48	51	53	57	79	75	..	..
Mongolia	6	18	..	..	..	..	..	..	105	109	0	0	1	2	..	..
Myanmar	..	..	264	264	4	8	4	8	6	11	15	19	1	2	..	..
Nepal	..	..	312	347	1	3	3	6	10	10	1	1	1	1	..	..
Pakistan	4	..	392	444	10	9	24	33	13	12	2	2	4	9	..	..
Philippines	7	10	463	560	32	43	31	44	18	31	36	29	13	19	0.7	0.7	
Singapore	89	..	4,429	6,123	192	210	428	660	79	71	..	..	185	149	..	..
Sri Lanka	7	..	328	435	14	18	14	25	4	7	18	22	7	4	0.1	0.1	
Tajikistan	0	..	..	478	..	181	..	187	15	9	0	0	0	0	..	..
Thailand	14	..	795	1,184	61	101	62	134	30	28	27	31	29	31	0.3	0.5	
Turkmenistan	..	..	..	2,991	..	172	..	120	..	..	9	3	0	0	..	..
Uzbekistan	..	..	..	2,013	..	78	..	154	25	21	1	0	0	1	..	..
Viet Nam	..	..	374	473	13	23	9	29	17	29	12	18	2	7	0.2	0.4
Europe	..	..	..	3,546	..	286	..	481	77	74	19	21	99	125	..	..
Albania	2	33	809	541	24	43	45	97	21	38	1	4	13	6	..	..
Austria	387	..	3,240	3,551	419	318	521	638	109	94	13	15	178	236	9.8	5.6	
Belarus	59	145	..	2,425	..	108	..	258	80	59	1	14	26	31	..	..
Belgium	385	457	4,885	5,786	354	275	549	711	..	86	..	..	0	247	..	..
Bosnia and Herzegovina	101	..	..	1,096	..	76	..	161	19	21	1	4	0	3	..	..
Bulgaria	146	234	3,306	2,319	206	91	409	331	66	69	3	3	17	35	..	..
Croatia	..	247	..	1,741	..	214	..	253	35	50	2	12	20	111	..	..
Czech Rep	228	335	4,599	3,932	146	240	477	507	..	77	..	14	..	94	..	..
Denmark	320	359	3,426	3,645	389	461	511	558	121	146	27	24	225	243	10.3	8.1	
Estonia	154	339	..	3,309	..	295	..	410	65	67	46	21	27	75	..	..
Finland	386	..	5,851	6,373	511	451	1,074	1,349	60	67	35	33	286	322	13.1	11.4	
France	405	477	4,003	4,341	415	297	515	636	99	101	30	31	158	183	5.6	5.3	
Germany	386	..	4,485	4,174	506	436	571	589	88	82	15	15	198	219	8.0	6.6	
Greece	171	..	2,183	2,552	302	394	273	403	77	79	22	23	68	85	0.9	5.5	
Hungary	188	..	2,746	2,490	223	181	295	295	102	101	4	5	43	62	..	..
Iceland	470	561	8,518	11,504	678	653	1,388	2,317	66	85	94	91	20	112	..	..
Ireland	227	349	3,009	3,753	326	519	325	509	102	106	18	18	101	99	1.8	2.3	
Italy	476	..	2,690	2,984	298	368	356	457	87	90	23	26	137	204	5.2	5.8	
Latvia	106	235	..	1,519	..	191	..	189	92	46	31	11	17	43	..	..
Lithuania	133	317	..	2,045	..	138	..	231	96	50	27	60	13	38	..	..
Macedonia, FYR	121	..	..	1,339	..	83	..	241	23	35	3	4	0	26	..	..
Moldova, Rep	48	..	..	670	..	17	..	81	47	23	1	7	1	4	..	..
Netherlands	368	..	4,447	4,748	298	334	449	573	87	89	13	24	210	239	9.4	6.9	
Norway	380	411	5,068	5,766	540	477	2,008	2,201	52	62	45	55	146	156	9.6	9.0	
Poland	138	259	2,620	2,329	103	154	281	277	78	78	9	13	27	67	..	..
Portugal	162	..	1,733	2,457	179	257	220	356	72	91	58	59	97	116	3.8	4.4	
Romania	56	139	2,689	1,615	116	91	251	176	62	55	3	3	15	17	..	..
Russian Federation	..	132	..	4,217	..	222	..	457	61	51	19	19	37	28	..	..
Serbia and Montenegro	133	..	..	1,365	..	124	..	247	92	78	2	2	43	30	..	..
Slovakia	163	236	4,076	3,240	103	146	445	430	..	67	..	7	..	140	..	..
Slovenia	289	426	..	3,287	..	519	..	516	54	88	4	8	163	141	..	..
Spain	309	..	2,321	3,050	268	268	304	473	96	119	38	47	123	170	4.0	4.1	
Sweden	426	450	5,452	5,364	630	578	1,361	1,378	61	76	30	34	243	275	11.1	8.0	
Switzerland	449	493	3,674	3,692	701	676	645	690	78	73	16	20	204	213	7.6	7.5	
Ukraine	63	104	..	2,807	..	109	..	238	63	32	10	15	13	17	..	..
United Kingdom	341	..	3,738	3,939	554	460	458	531	75	80	21	23	172	207	2.7	2.2	
Middle East & N. Africa	..	..	1,163	1,514	134	157	99	159	22	26	6	7	12	16	..	..
Afghanistan	0	0
Algeria	..	..	956	961	113	78	47	62	19	18	4	3	8	7	..	..
Egypt	21	..	574	685	50	45	61	96	16	23	8	15	11	13	..	..
Iran, Islamic Rep	25	..	1,213	1,847	135	235	84	145	22	23	5	5	8	8	..	..
Iraq	1	..	1,202	1,190	209	182	108	126	..	..	..	..	1	2	..	..
Israel	174	233	2,683	3,343	425	410	359	555	61	97	24	22	119	105	..	..
Jordan	..	..	1,075	1,031	155	155	90	118	33	30	4	5	26	25	..	..
Kuwait	..	..	3,926	9,299	475	1,047	697	1,360	43	60	9	9	25	23	..	..
Lebanon	300	..	851	1,454	286	431	33	157	46	63	4	12	30	45	..	..
Libyan Arab Jamahiriya	..	..	2,680	3,139	313	487	335	341	31	29	9	7	4	3	..	..
Morocco	28	..	274	353	20	18	32	49	18	21	9	9	8	8	..	..
Oman	83	..	2,473	3,386	335	386	209	279	37	50	..	..	6	20	..	..
Saudi Arabia	98	..	3,675	4,755	520												

Resource Consumption 2005

	Passenger Cars		Total Annual Energy Consumption		Annual Gasoline & Diesel Consumption		Annual Electricity Consumption		Annual Per Capita Consumption (kg per person)							
	Per 1000 Persons		Per Capita (kgoe) (a)		Per Capita (liters per person)		Per Capita (kgoe) (a)		Meat		Fish and Fishery Products		Paper and Paperboard		Coffee	
	1990	2000	1990	2000	1990	2001	1990	2001	1992	2002	1992	2002	1992	2002	1993	2003
Sub-Saharan Africa	..	..	..	..	..	..	..	..	14	13	8	7	4	4	..	..
Angola	14	..	672	652	18	14	6	9	16	19	12	17	0	0	0.1	0.1
Benin	2	..	361	317	4	45	3	6	12	16	9	8	0	1	..	..
Botswana	10	..	..	..	..	..	..	..	33	27	7	5	0	6	..	..
Burkina Faso	2	..	..	..	..	..	..	..	11	11	2	2	0	1	..	..
Burundi	..	..	..	..	..	..	..	..	5	4	4	1	0	0	0.0	0.0
Cameroon	6	..	431	420	24	23	17	15	15	14	12	14	2	2	0.5	0.3
Central African Rep	1	..	..	..	..	..	..	..	22	28	5	4	0	0	0.5	0.1
Chad	1	..	..	..	..	..	..	..	17	14	6	7	0	0	..	..
Congo	12	..	423	260	24	13	16	11	26	13	30	20	0	1	0.1	0.0
Congo, Dem Rep	..	..	319	302	6	4	11	7	6	5	7	6	0	0	0.3	0.2
Côte d'Ivoire	15	..	353	418	18	10	14	17	13	11	16	15	3	4	0.2	1.1
Equatorial Guinea	3	..	..	..	..	..	..	..	..	..	..	..	0	0	..	..
Eritrea (c)	1	..	..	194	..	6	..	4	..	..	..	2	..	0	..	..
Ethiopia (c)	1	1	310	286	2	2	2	2	12	8	0	0	0	0	1.4	1.6
Gabon	19	..	1,350	1,276	55	48	80	78	53	46	38	42	3	4	0.0	0.0
Gambia	6	..	..	..	..	..	..	..	7	5	16	25	0	0	..	..
Ghana	..	..	349	403	27	33	26	30	11	10	27	29	1	2	0.1	0.0
Guinea	2	..	..	..	..	..	..	..	5	7	11	12	0	0	0.3	0.4
Guinea-Bissau	4	..	..	..	..	..	..	..	15	13	5	1	0	0	..	..
Kenya	10	8	529	507	21	16	10	10	16	14	5	4	7	4	0.1	0.1
Lesotho	3	..	..	..	..	..	..	..	19	15	0	0	..	..	..	..
Liberia	7	..	..	..	..	..	..	..	11	8	6	5	0	0	0.1	0.1
Madagascar	4	..	..	..	..	..	..	..	20	18	8	8	1	1	1.7	1.1
Malawi	2	..	..	..	..	..	..	..	5	5	7	4	0	0	0.0	0.0
Mali	2	..	..	..	..	..	..	..	18	19	7	8	0	0	..	..
Mauritania	7	..	..	..	..	..	..	..	29	30	11	10	0	1	..	..
Mozambique	3	..	535	402	4	4	3	23	6	6	2	2	0	0	..	..
Namibia	39	38	..	544	..	169	..	115	26	34	11	14	0	8	..	..
Niger	5	..	..	..	..	..	..	..	13	11	0	1	0	0	..	..
Nigeria	..	..	824	794	40	59	7	7	8	9	7	7	1	2	0.0	0.0
Rwanda	1	..	..	..	..	..	..	..	5	4	1	1	0	0	0.0	0.0
Senegal	8	..	305	329	14	13	9	12	17	18	33	28	1	3	..	..
Sierra Leone	7	..	..	..	..	..	..	..	5	6	16	15	0	..	0.1	0.1
Somalia	1	..	..	..	..	..	..	..	..	..	..	..	0	0	..	..
South Africa	97	..	2,476	2,474	220	212	381	391	41	39	9	8	45	41	..	..
Sudan	8	..	426	505	11	14	4	6	18	21	1	2	0	0	..	..
Tanzania, United Rep	1	..	376	386	5	5	4	5	10	10	12	7	1	1	0.0	0.0
Togo	16	..	290	335	28	26	9	9	8	9	11	10	0	1	0.0	0.0
Uganda	1	..	..	..	..	..	..	..	12	12	14	7	0	0	0.2	0.4
Zambia	8	..	667	599	15	15	68	51	12	12	9	7	1	1	0.0	0.0
Zimbabwe	..	..	868	808	28	29	77	70	12	15	2	1	10	9	0.0	0.0
North America	563	..	7,539	8,090	1,500	1,582	1,043	1,154	115	123	21	22	291	305	4.0	4.1
Canada	468	..	7,548	8,156	1,165	1,189	1,389	1,443	97	108	23	26	188	281	..	..
United States	573	..	7,538	8,083	1,536	1,624	1,006	1,122	117	125	21	21	303	308	4.0	4.1
C. America & Caribbean	..	..	1,233	1,260	214	211	88	121	34	47	9	10	30	41	1.3	1.2
Belize	36	..	..	..	..	..	..	..	60	75	9	14	7	2	..	..
Costa Rica	55	..	658	835	81	183	94	137	43	40	5	6	125	79	6.8	3.0
Cuba	..	..	1,555	1,179	124	42	104	99	23	32	12	12	6	8	1.1	1.2
Dominican Rep	21	..	586	934	98	164	34	77	33	38	9	15	13	36	2.6	2.3
El Salvador	17	..	496	658	42	71	32	50	14	21	3	5	20	27	2.5	1.4
Guatemala	..	..	512	626	46	88	20	31	15	24	1	2	16	24	2.0	1.5
Haiti	..	..	229	255	11	16	5	3	9	15	4	3	0	1	2.7	2.5
Honduras	..	..	496	466	31	55	27	45	16	25	1	1	18	27	2.6	1.7
Jamaica	..	..	1,242	1,519	129	234	76	202	46	57	19	24	20	16	0.2	0.2
Mexico	82	107	1,490	1,522	307	292	113	156	41	59	11	11	38	55	0.7	0.9
Nicaragua	10	12	554	541	29	39	27	29	14	15	2	5	4	3	1.6	2.1
Panama	60	..	618	874	113	166	74	117	44	55	20	11	44	14	1.6	1.3
Trinidad and Tobago	..	..	4,770	6,499	369	324	232	342	31	58	14	15	35	57	0.5	0.6
South America	..	..	965	1,120	120	127	111	141	57	70	8	9	27	35	..	..
Argentina	134	..	1,385	1,658	167	96	112	183	103	98	7	10	40	39	..	..
Bolivia	25	..	416	593	69	61	24	35	39	50	1	3	3	5	0.3	0.4
Brazil	..	..	894	1,070	61	94	126	154	62	82	5	6	26	42	3.5	4.6
Chile	52	87	1,040	1,589	136	183	108	228	44	66	35	13	40	70	..	..
Colombia	..	..	715	680	162	114	70	67	32	34	3	5	23	24	2.3	1.9
Ecuador	31	..	590	659	156	142	41	56	27	45	6	5	40	15	1.9	0.7
Guyana	..	..	..	..	..	..	..	..	23	32	49	52	3	9	..	..
Paraguay	..	..	732	718	38	40	43	72	79	70	4	5	10	10	0.3	0.2
Peru	..	..	458	483	63	41	48	61	26	35	17	21	10	11	0.5	0.3
Suriname	90	43	..	..	..	..	..	..	..	..	14	21	6	5	..	..
Uruguay	122	..	725	921	88	95	107	167	108	99	5	8	34	21	..	..
Venezuela	..	..	2,252	2,335	487	528	214	235	43	57	13	18	38	27	2.5	1.6
Oceania	..	..	..	..	..	..	..	..	..	..	..	..	114	131	..	..
Australia	450	..	5,183	5,732	991	871	722	887	..	..	20	22	145	169	..	..
Fiji	..	..	..	..	..	..	..	..	45	39	28	33	6	115	0.2	0.6
New Zealand	436	578	4,171	4,769	703	727	721	759	120	142	21	26	173	190	..	..
Papua New Guinea	..	..	..	..	..	..	..	..	80	73	..	..	1	3	0.0	0.0
Solomon Islands	..	..	..	..	..	..	..	..	..	..	43	39	0	0	..	..
Developed	344	..	..	4,590	..	613	..	652	79	80	23	24	150	172	..	..
Developing	..	..	693	833	42	54	46	77	21	29	10	14	13	20	..	..

a. Kgoe is kilograms of oil equivalent. b. Data for China include Taiwan. c. Data for Ethiopia before 1993 include Eritrea.

VARIABLE DEFINITIONS AND METHODOLOGY

Passenger cars per 1000 people refers to road motor vehicles, other than two-wheelers, intended for the transport of passengers and designed to seat no more than nine people. Data are compiled by the World Bank from the International Road Federation (IRF) through questionnaires sent to national organizations, primarily national road associations. When national road associations lack data or do not respond to questionnaires, other agencies are contacted, including road directorates, ministries of transport or public works, and central statistical offices.

Total energy consumption per capita, annual gasoline and diesel consumption per capita and annual electricity consumption per capita are calculated by WRI using data on energy consumption from the International Energy Agency (IEA) and population data from the United Nations Population Division. IEA uses an energy balance methodology based on the calorific content of energy commodities. All commodities are reported in metric tons of oil equivalent (toe) or kilograms of oil equivalent (kgoe), which are equivalent to the amount of energy in one ton or one kilogram of crude oil, respectively. One toe is also equal to 10×10^6 kilocalories, 41,868 gigajoules or 11,630 kilowatt hours. Although differences in quality of commodities may result in different energy contents, IEA has applied uniform conversion factors supplied by national administrations.

The IEA has used the following conventions in accounting for primary energy such as nuclear, solar, geothermal, hydro, wind, etc.: 1) The first form of energy production with multiple practical uses is reported. This means that heat is in the form reported for geothermal heat and electrical production, nuclear heat and electrical production and solar heat production. Electricity is the form reported for hydro, wind, wave and photovoltaic solar electricity production. 2) The physical energy content of the energy source is reported as energy production. For nuclear fuels, this is the heat energy produced in a nuclear reactor, for hydropower, it is the amount of energy in the electricity produced. Please refer to the original source for further information on the variables and collection methodologies.

Total energy consumption per capita shows the total primary energy consumption, including losses through transportation, friction, heat loss and other inefficiencies, divided by the total population. Total energy consumption is equal to indigenous production plus imports minus exports plus stock changes minus international marine bunkers.

Annual motor gas and diesel consumption per capita refers to the per capita consumption of motor gasoline and diesel combined. *Motor gasoline* is a light hydrocarbon oil for use in internal combustion engines such as motor vehicles, excluding aircraft. It is distilled between 35°C and 215°C and is used as a fuel for land based spark ignition engines. Motor gasoline may include additives, oxygenates and octane enhancers, including lead compounds such as TEL (tetraethyl lead) and TML (tetramethyl lead). *Diesel oil* includes heavy gas oils distilled between 180°C and 380°C. Several grades are available depending on uses: diesel oil for diesel compression ignition (cars, trucks, marine, etc.), light heating oil for industrial and commercial uses, and other gas oil including heavy gas oils which distil between 380°C and 540°C and which are used as petrochemical feedstocks. The data in this variable only considers the fuels used in road vehicles (including military) as well as agricultural and industrial highway use. It excludes motor gasoline used in stationary engines.

Electricity consumption per capita measures the amount of electricity used by the end user, excluding losses due to transportation, friction, heat loss or other inefficiencies, divided by the total population. The data in this table was converted from tons of oil equivalent (toe) to kilograms of oil equivalent (koe).

Figures for **annual meat consumption per capita, annual fish consumption per capita and annual paper consumption per capita** are calculated by WRI using production and trade data from the Food and Agriculture Organization (FAO) and population data from the United Nations Population Division. Total

Technical Notes

consumption figures are calculated using a trade balance approach, where consumption equals production plus net imports. Where imports are less than exports, consumption will be lower than production.

FAO collects production and trade information used to calculate consumption primarily through national surveys. In cases where countries do not respond to national surveys, FAO uses regional data and other statistical sources to make the best estimates.

Annual meat consumption per capita, given in kilograms per person, refers to the average meat consumption per person per year. Meat consumption includes meat from animals slaughtered in countries, irrespective of their origin, and comprises horsemeat, poultry, and meat from all other domestic or wild animals such as camels, rabbits, reindeer, and game animals.

Annual fish consumption per capita, expressed in kilograms per person, refers to the total food supply of fish and fishery products available to human consumption divided by the total population. Total food supply is calculated on a live weight basis, which means that total consumption assumes that all parts of the fish are consumed, including bones and organs.

Annual paper consumption per capita refers to the average amount of paper and paperboard used per person, expressed in kilograms per person. Paper and paperboard include newsprint, printing and writing paper, packaging paper, household and sanitary paper, and other paper products.

Annual coffee consumption per capita shows coffee consumption data in terms of kilograms of raw coffee beans per person. It is collected by the International Coffee Organization (ICO) through reports from ICO member countries.

FREQUENCY OF UPDATE BY DATA PROVIDERS

Data on **passenger cars per 1000 people** is published by World Bank in the World Development Indicators each April. As of October 2004, data were available annually from 1990 to 2001, with some data available for years prior to 1990.

Total energy consumption per capita, annual motor gas consumption per capita and electricity consumption per capita is updated annually by the International Energy Agency (IEA). IEA provides for OECD countries from 1960 to 2001 and non-OECD countries from 1971 to 2001.

Data on annual meat consumption per capita, annual fish consumption per capita and annual paper consumption per capita is updated annually by FAO and is available for most countries from 1961 to 2002. Population data used in these per capita calculations is updated by the United Nations Population Division every two years.

Coffee consumption data is provided by the International Coffee Organization (ICO) annually. Data is available from 1984 to 2003.

DATA RELIABILITY AND CAUTIONARY NOTES:

Passenger cars per 1000 people data may differ across countries because of differences in definitions. In addition, the data does not capture the quality or age of vehicles or the conditions of roads.

Data on **total energy consumption per capita, annual motor gas consumption per capita and electricity consumption per capita data** are primarily based on well-established and institutionalized accounting methodologies, and are therefore considered reliable.

The data, as received from the provider, do not distinguish between no data and zero values. WRI has

Technical Notes

distinguished between the two where possible, but some values represented as zero should probably be indicated as 'no data' and vice versa.

Caution should be exercised if considering using the data to extrapolate into the future. Energy usage is variable from year to year due to short-term factors such as the weather and the economy that significantly impact any one year's consumption.

Data on **meat, fish and paper production and trade (used in consumption calculations)** reported to FAO is governed by established accounting practices and is therefore generally considered to be reliable. However, reporting countries vary in the quality of data they have available to report.

Annual coffee consumption data is a result of reports from member countries of the International Coffee Organization. Their reliability depends on the methodology used in each country which may vary considerably. Data on re-exports are not included, so in countries where a large percentage of imported coffee is re-exported, data will be overestimations of the actual amount of coffee consumed.

SOURCES

Passenger Cars Per 1000 People: Development Data Group, The World Bank. 2004. *World Development Indicators 2004 online* (see http://publications.worldbank.org/ecommerce/catalog/product?item_id=631625) Washington, D.C.: The World Bank.

Gasoline, Diesel fuel, Electricity, and Energy Consumption: International Energy Agency (IEA). 2003. *Energy Balances of OECD Countries (2003 Edition)* and *Energy Balances of non-OECD Countries (2003 Edition)*. Paris: Organization for Economic Cooperation and Development (OECD). Electronic database available online at: <http://data.iea.org/>.

Meat, Fish, and Paper Consumption: Food and Agriculture Organization of the United Nations (FAO). 2004. *FAOSTAT on-line statistical service*. Available on-line at <http://apps.fao.org>. Rome: FAO.

Coffee Consumption: International Coffee Organization (ICO). 2004. Available on-line at <http://www.ico.org>. London : ICO.

Population data for Per Capita Calculations: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. 2003. *World Population Prospects: The 2002 Revision. Dataset on CD-ROM*. New York: United Nations.