Water Resources and Fisheries Source: Food and Agriculture Organization of the United Nations



		ctual	٨٠	nnual Wat	or Withd	rowolo									Fish
	Renewable Water		Annual Water Withdrawals Per Withdrawals by					Inland	and Marine	Fisheries Produ	uction	Trade in Fish and			Protein as a Percent
	Resources (a) Per Capita		Total	Capita (m ³ per	Sector (percent), 2000 {b}		(thousand metric tons) {c} Capture Aquaculture				Fisheries Products (million \$US) {c}		Number of	of Animal Protein	
	Total	(m ³ per	(km ³)	person)	Agri-	Indus-	Dom-	1990-	2000-	1990-	2000-	2000-2	2002	Fishers	Supply
World	(km ³)	person) 8,549	2000 3,802.3	2000 633	culture 70	try 20	estic 10	1992 84,529.0	2002 93,650.8 d	1992 d 14,074.7 d	2002 I 37,694.7 d	Imports 60,312.2	Exports 56,520.1	2000 34,501,411	2002 15
Asia (excl. Middle East) Armenia		4,079 3,450	2,147.5 3.0	631 949	81 66	12 4	7 30	34,528.9	44,189.1 0.8	11,745.9 3.4	33,275.1 1.1	22,301.9 3.0	19,051.0 0.7	28,890,352 244	1
Azerbaijan	30	3,585	17.2	2,114	68	28	5	36.1	13.7	1.7	0.2	1.6	2.2	1,500	1
Bangladesh Bhutan	1,211 95	8,089 40,860	79.4 0.4	576 204	96 95	1 1	3 4	684.2 0.3	1,058.8 0.3	210.1 0.0	718.8 0.0	6.2 e	328.3 e 	1,320,480 450	52
Cambodia	476	32,876	4.1	311 494	98	1	2 7	106.3 7,449.7	372.9	7.2	14.3	3.2 1,927.0	27.9	73,425	57 19
China Georgia	2,830 63	2,206 12,481	630.3 3.6	685	68 59	26 21	20	66.9	16,690.0 2.2	7,206.8 1.4	26,132.7 0.1	1.4	4,029.1 0.3	12,233,128 1,900	1
India Indonesia	1,897 2,838	1,754 12,749	645.8 82.8	635 391	86 91	5 1	8 8	2,867.6 2,704.3	3,799.4 4,300.8	1,212.6 522.6	2,084.6 855.6	23.1 88.2	1,351.8 1,536.6	5,958,744 5,118,571	14 57
Japan	430	3,365	88.4	696	62	18	20	8,598.8	4,715.7	808.7	797.7	14,204.2	786.3	260,200	45
Kazakhstan Korea, Dem People's Rep	110 77	7,116 3,387	35.0 9.0	2,238 405	82 55	17 25	2 20	70.7 406.0	27.7 208.1	8.7 56.7	0.7 64.7	16.5 25.8	15.2 138.2	16,000 129,000	2 27
Korea, Rep Kyrgyzstan	70 21	1,454 3,952	18.6 10.1	397 2,048	48 94	16 3	36 3	2,321.9 0.3	1,828.6 0.1	364.9 0.9	294.9 0.1	1,619.9 1.4	1,195.9 0.0	176,928 154	40 1
Lao People's Dem Rep	334	57,638	3.0	567	90	6	4	18.6	31.2	10.4	50.6	2.0	0.1	15,000	40
Malaysia Mongolia	580 35	23,316 13,232	9.0 0.4	392 178	62 52	21 28	17 20	966.3 0.1	1,270.6 0.2	65.8 	158.4	335.9 0.4	359.6 0.1	100,666 0	38 0
Myanmar	1,046	20,870	33.2	699	98	1	1	731.6	1,183.1	14.0	113.8	1.4	210.4	610,000	46
Nepal Pakistan	210 223	8,171 1,415	10.2 169.4	433 1,187	96 96	1 2	3 2	5.5 504.0	17.1 604.7	10.1 11.8	16.2 13.8	0.3 0.3	0.0 136.7	50,000 272,273	4 3
Philippines Singapore	479 1	5,884 139	28.5	377	74 	9	17	1,875.4 10.6	1,961.2 3.8	391.8 2.1	423.9 4.9	89.0 509.8	396.4 380.0	990,872 364	39
Sri Lanka	50	2,602	12.6	678	95	2	2	185.9	290.9	5.5	9.3	73.2	106.3	146,188	51
Tajikistan Thailand	16 410	2,537 6,459	12.0 87.1	1,965 1,429	92 95	5 2	4 2	0.2 2,664.2	0.1 2,950.3	3.1 338.7	0.1 702.4	0.2 947.7	4,027.6	200 354,495	0 40
Turkmenistan Uzbekistan	25 50	5,004 1,904	24.6 58.3	5,308 2,342	98 93	1 2	2 5	38.4 5.8	12.6 3.2	2.2 21.7	0.0 4.8	0.2 1.8	0.3 0.1	611 4,800	3 0
Viet Nam	891	10,805	71.4	914	68	24	8	826.1	1,483.0	164.4	515.9	44.9	1,764.2	1,000,000	29
Europe Albania	42	10,655 13,056	400.3	581 551	33 62	52 11	15 27	19,025.1 5.3	15,773.3 3.5	1,470.1 2.1	2,064.1 0.5	23,051.7	19,356.0 7.0	855,333 1,590	12 2
Austria	78	9,569	2.1	261	1	64	35	0.5	0.4	3.1	2.5	177.6	11.9	2,300	4
Belarus Belgium	58 18	5,887 1,770	2.8	278	30	46	23	1.8 39.5	2.4 29.7	13.3 0.8	6.1 1.7	91.6 1,030.7	18.3 520.2	5,000 544	8
Bosnia and Herzegovina	38 21	8,958 2,721	10.5	1,296	19	 78	3	2.0	2.5 9.5	7.9	4.7 3.0	15.6 14.7	0.2 5.8	3,500 1,483	4 2
Bulgaria Croatia	106	23,890	10.5					26.7	20.3	7.9 6.8	8.4	62.4	62.5	65,151	9
Czech Rep Denmark	13 6	1,286 1,116	2.6 1.3	250 238	2 42	57 26	41 32	 1,726.9	4.8 1,495.5	 42.4	19.6 39.1	84.0 1,781.8	31.0 2,762.9	2,243 6,711	5 10
Estonia	13	9,794	0.2	120	5	39	56	266.6	106.6	1.0	0.3	45.7	112.0	13,346	13
Finland France	110 204	21,093 3,371	2.5 40.0	479 674	3 10	84 74	14 16	140.6 595.1	150.5 620.3	18.6 250.6	15.4 256.0	129.6 3,082.0	15.3 1,067.7	5,879 26,113	14 9
Germany Greece	154 74	1,866 6,764	47.1 7.8	572 712	20 81	68 3	12 16	259.7 141.2	213.8 94.2	78.6 14.1	56.4 93.6	2,343.5 319.2	1,098.0 221.3	4,358 19,847	6 11
Hungary	104	10,579	7.6	763	32	59	9	11.1	6.8	15.4	12.5	48.3	5.1	4,900	2
Iceland Ireland	170 52	582,192 13,003	0.2 1.1	543 296	0	66 77	34 23	1,375.8 232.9	2,031.0 305.0	2.7 27.2	3.9 58.3	65.2 121.5	1,309.5 407.7	6,100 8,478	29 6
Italy	191	3,336	44.4	771	45	37 33	18	391.4 341.4	295.4 126.1	161.4	205.3 0.4	2,719.2	392.7 93.0	48,770	11 7
Latvia Lithuania	35 25	15,507 7,276	0.3 0.3	124 76	12 7	15	55 78	330.3	126.1	1.9 4.5	1.9	43.5 78.5	93.0 57.4	6,571 4,700	27
Macedonia, FYR Moldova, Rep	6 12		2.3	 539	 33	 58	 9	0.2 0.9	0.2 0.4	1.0 5.1	1.3 1.3	6.7 7.3	0.1 0.2	8,472 40	3 8
Netherlands	91	5,608	7.9	500	34	60	6	415.5	492.7	68.9	62.3	1,241.8	1,522.5	3,743	11
Norway Poland	382 62	83,919 1,598	2.2 16.2	489 419	10 8	67 79	23 13	2,015.3 452.9	2,710.0 221.7	147.5 28.7	518.6 34.7	627.9 334.0	3,488.7 247.2	23,552 8,640	26 12
Portugal Romania	69 212	6,821 9,512	11.3 23.2	1,125 1,031	78 57	12 34	10 9	310.3 86.3	192.9 7.3	5.9 29.7	8.1 9.9	914.3 38.8	284.2 2.4	25,021 8,519	21 2
Russian Federation	4,507	9,512 31,653	23.2 76.7	527	18	63	19	6,481.5	3,611.6	156.4	88.5	333.9	1,437.9	316,300	13
Serbia and Montenegro Slovakia	209 50	 9,266						3.0	1.2 1.5	2.3	2.7 0.9	35.1 34.7	0.3 2.0	1,429 215	1 5
Slovenia	32	16,080	 25 6	074				3.9	1.8	0.9	1.2	28.7	6.0	231	4
Spain Sweden	112 174	2,711 19,581	35.6 3.0	874 335	68 9	19 54	13 37	1,086.7 265.2	1,006.9 315.1	199.2 8.1	296.2 5.7	3,640.0 748.4	1,777.8 522.7	75,434 2,783	18 14
Switzerland Ukraine	54 140	7,468 2,898	2.6 37.5	359 755	2 52	74 35	24 12	3.2 667.0	1.6 339.4	1.2 67.7	1.1 30.9	358.3 101.1	3.1 31.7	522 120,000	7 13
United Kingdom	147	2,474	9.5	163	3	75	22	788.0	726.2	55.9	167.3	2,249.4	1,305.9	17,847	10
Middle East & N. Africa Afghanistan	65	1,505 2,608	324.6 23.3	807 1,087	86 98	6	<u>8</u> 2	2,096.7 1.1	3,048.9	117.7	525.5	827.6	1,354.7	746,955 1,500	10
Algeria	14	443	6.1	201	65	13	22	88.5	127.0	0.2	0.4	11.9	5.0	26,151	6
Egypt Iran, Islamic Rep	58 138	794 1,970	68.7 72.9	1,013 1,097	78 91	14 2	8	272.6 267.7	412.7 348.4	62.5 23.1	353.1 60.0	147.1 30.9 f	1.6 48.1 f	250,000 138,965	23 7
Iraq Israel	75 2	2,917 255	42.7 2.0	1,839 338	92 63	5 7	31	18.1 6.7	16.8 5.2	2.7 14.0	1.7 21.2	0.1 135.9	0.0 7.5	12,000 1,535	7
Jordan	1	157	1.0	202	75	4	21	0.4	0.5	0.0	0.5	25.5	1.2	721	6
Kuwait Lebanon	0 4	8 1,189	0.4 1.4	198 394	52 67	3 1	45 33	4.8 1.6	5.9 3.8	0.0 0.1	0.3 0.5	16.7 48.3	3.6 0.2	670 9,825	6 8
Libyan Arab Jamahiriya	1 29	106 934	4.8 12.8	919 438	89 90	3	8	26.5 571.9	33.4 958.5	0.1	0.1	9.8 10.4	10.1 913.4	9,500	9
Morocco Oman	1	337	1.4	518	91	2	7	115.2	131.0	0.0	0.0	8.1	62.0	106,096 28,003	
Saudi Arabia Syrian Arab Rep	2 26	96 1,441	17.3 19.9	782 1,205	89 95	1 2	10 3	42.3 4.0	51.4 8.0	2.2 3.7	7.0 6.2	123.2 56.5	9.8 0.0	25,360 11,292	6 3
Tunisia	5	459	2.7	286	82	2	16	86.7	96.9	0.9	1.8	16.3	88.8	50,815	13
Turkey United Arab Emirates	229 0	3,171 49	37.5 2.3	550 818	74 68	11 9	15 23	394.5 94.2	532.6 105.2	7.6 0.0	69.1 0.0	37.1 98.3	93.7 52.9	33,614 15,543	11 12
Yemen	4	198	6.6	368	95	1	4	79.8	138.7			5.9	38.0	12,200	16

Water Resources and Fisheries

		ctual	Λ.	Annual Water Withdrawals											
	Renewable _ Water		A	nnuai wate Per		rawais hdrawais	s by	Inland	and Marine	Fisheries Produ	ıction	Trade in Fish and			Protein as a Percent
	Resources {a} Per Capita		Total	Capita (m ³ per	Sector (percent), 2000 {b}			(thousand metric tons) {c} Capture Aquaculture				Fisheries Products (million \$US) {c}		Number of	of Anima Protein
	Total	Total (m ³ per (k	(km ³)	person)	Agri-	Indus-	Dom-	1990-	2000-	1990-	2000-	2000		Fishers	Supply
ub-Saharan Africa	(km ³)	person) 6,322	2000 113.4	2000 173	culture 88	try 4	estic 9	1992 4,126.4	2002 5,159.6	1992 25.4	2002 63.1	Imports 812.1	Exports 1,862.1	2000 1.995.694	2002
ngola	184	13,070	0.3	28	61	16	22	121.3	250.6			17.5	22.4	30,364	3
enin	25	3,585	0.3	40	74	11	15 38	35.3	37.1	**	0.0	7.2	2.3	61,793	
otswana urkina Faso	14 13	8,022 933	0.1 0.8	81 66	43 88	19 0	11	1.0 7.2	0.1 8.5	0.0	0.0	6.9 1.4	0.0 0.1	2,620 8,300	
urundi	4	509	0.2	37	82	1	17	20.8	11.8	0.0	0.1	0.1	0.2	7,030	
ameroon	286	17,520	1.0	65	74	8	18	70.7	114.4	0.1	0.2	23.7	0.5	24,500	
entral African Rep had	144 43	36,912 4,857	0.0 0.2	6 30	4 80	19 1	77 19	13.2 70.0	15.0 84.0	0.2	0.1	0.3 0.3	0.2 0.0	5,410 300.000	
ongo	832	217,915	0.0	11	10	30	59	44.4	43.3	0.2	0.2	19.2	2.2	10,500	
ongo, Dem Rep	1,283	4.704	0.4	7	31	16	52	171.7	214.6	0.7	2.6	33.5	0.4	108,400	
ôte d'Ivoire quatorial Guinea	81 26	4,794 51,282	0.9 0.1	59 232	65 1	12 16	23 83	88.3 3.6	76.4 3.5	0.2	1.0	154.3 4.2	125.7 0.7	19,707 9,218	
ritrea	6	1,466	0.3	82	95	1	4		9.9			0.2	1.3	14,500	
thiopia	110 164	1,519 121,392	2.6 0.1	40 102	93 40	6 11	1 48	4.6 22.0	14.5 43.7	0.0 0.0	0.0 0.2	0.2 12.4	0.0 13.5	6,272 8,258	
abon ambia	8	5,472	0.0	24	67	11	22	21.5	36.4	0.0	0.2	0.7	2.8	2,000	
hana	53	2,489	0.5	27	48	15	37	393.9	423.6	0.4	5.7	100.4	74.8	230,000	
uinea	226	26,218	1.5	187	90	2	8	49.5	100.2	0.0	0.0	6.6	2.0	10,707	
uinea-Bissau enya	31 30	20,156 932	0.1 1.6	81 52	91 64	1 6	9 30	5.2 187.2	5.0 174.9	1.2	0.8	0.2 4.2	4.4 37.8	2,500 59,565	
esotho	3	1,678	0.1	30	19	41	40	0.0	0.0	0.0	0.0			60	
iberia	232	66,533	0.1	36	56	15	28	8.3	11.5	0.0	0.0	2.1	0.1	5,143	
1adagascar 1alawi	337 17	18,826 1,401	15.0 1.0	937 88	96 81	2 5	3 15	102.3 68.9	136.4 41.6	0.7 0.2	7.7 0.6	10.0 0.4	106.9 0.2	83,310 42,922	
Mali	100	7,458	6.9	582	99	0	13	69.3	103.3	0.0	0.5	1.8	0.4	70,000	
lauritania	11	3,826	1.7	642	88	3	9	66.6	81.5	. :	. :	1.0	99.0	7,944	
Iozambique Iamibia	216 18	11,266 8,921	0.6 0.3	36 142	87 63	2 5	11 33	32.5 374.6	34.8 587.4	0.0 0.0	0.2 0.1	7.6 16.5	98.9 334.6	20,000 2,700	
liger	34	2,710	2.2	204	95	1	4	3.0	20.2	0.0	0.1	0.6	2.4	7,983	
igeria	286	2,252	8.0	70	69	10	21	287.5	458.2	13.3	26.9	197.6	17.6	481,264	
wanda	5	613	0.1	10	39	14	48	3.2	6.9	0.1	0.4	0.1	::	5,690	
enegal ierra Leone	39 160	3,811 30,960	1.6 0.4	169 86	90 93	4	6 5	334.9 63.6	393.7 77.6	0.0 0.0	0.1 0.0	1.0 4.1	245.5 13.7	55,547 17,990	
omalia	14	1,309	3.3	378	100	ō	Ö	24.1	19.4	0.0	0.0	0.1	3.1	18,900	
outh Africa	50	1,106	15.3	348	73	10	17	574.4	720.0	4.3	4.1	56.1	291.1	10,500	
udan	65	1,879	37.3	1,187	97 93	1 1	3	33.2	56.3	0.2	1.2	0.6	0.3	27,700 92,529	
anzania, United Rep ogo	91 15	2,416 2,930	2.0 0.2	57 36	93 47	8	6 45	357.1 13.0	331.1 22.1	0.4 0.1	0.4 0.4	0.4 10.9	107.4 6.3	14,120	
lganda	66	2,472	0.3	13	39	15	45	241.6	220.7	0.1	2.7	0.1	54.8	57,862	
ambia	105	9,630	1.7	167	76	8	16	66.4	65.6	2.5	4.2	1.9	0.4	23,833	
imbabwe Iorth America	20	1,547 19,992	2.6 525.3	207 1,663	86 38	5 48	10 14	23.1 6,908.1	13.0 6,071.6	0.1 409.1	2.2 628.6	4.9	3.4 6,345.6	1,804 303,784	
anada	2,902	91,419	46.0	1,494	12	69	20	1,471.7	1,026.2	44.9	151.0	1,371.2	2,883.9	8,696	
Inited States	3,069	10,333	479.3	1,682	41	46	13	5,291.2	4,866.7	364.2	477.5	10,268.5	3,210.5	290,000	
. America & Caribbean		6,924	100.7	603	75	6	18	1,753.9	1,989.7	50.1	147.4	455.2	1,525.4	446,390	
elize osta Rica	19 112	71,111 26,447	0.1 2.7	519 681	0 53	89 17	11 29	2.3 16.8	30.4 34.4	0.2 1.6	4.2 12.7	2.3 25.0	18.6 129.9	1,872 6,510	
uba	38	3,365	8.2	732	69	12	19	147.0	46.6	9.8	27.0	36.4	86.2	11,865	
Oominican Rep	21	2,367	3.4	405	66	2	32	16.4	14.2	0.6	2.8	60.7	1.5	9,286	
I Salvador	25 111	3,815 8,788	1.3 2.0	205 176	59 80	16	25 6	10.6	21.0	0.4 1.0	0.5 5.7	9.2	26.4 25.4	24,534 17,275	
iuatemala Iaiti	111	8,788 1,663	1.0	176	80 94	13 1	5	5.1	28.6 5.0	1.0	5./	10.5 5.9	25.4 3.6	4,700	
londuras	96	13,513	0.9	133	81	11	8	16.5	12.8	4.4	12.4	13.0	72.8	21,000	
amaica	9 457	3,513	0.4	159	49	17	34	16.0	5.7	3.3	5.1	47.5	8.5	23,465	
lexico licaragua	457 197	4,357 35,142	78.2 1.3	791 256	77 83	5 3	17 14	1,297.3 5.2	1,388.6 24.8	24.6	67.9 5.8	165.1 6.6	659.1 72.6	262,401 14,502	
anama	148	46,579	8.0	279	28	5	66	155.2	260.2	3.7	3.1	14.6	304.8	13,062	
rinidad and Tobago	4	2,938	0.3	237	6	27	67	12.3	10.6	0.0	0.0	9.2	10.8	7,297	
outh America		47,044	164.4	474	68	12	19	15,272.4	16,314.5	198.1	868.6	568.9	5,231.8	784,051	
rgentina olivia	814 623	20,941 69,378	29.1 1.4	784 167	74 83	9	16 13	632.9 5.7	928.4 5.9	0.4 0.3	1.5 0.4	58.5 6.7	810.7 0.0	12,320 7,754	
razil	8,233	45,573	59.3	345	62	18	20	762.9	798.6	24.6	210.1	271.3	289.3	290,000	
hile	922	57,639	12.5	824	64	25	11	5,851.3	4,122.9	49.5	501.1	49.8	1,867.4	50,873	
olombia cuador	2,132 432	47,469 32,747	10.7 17.0	254 1,367	46 82	<u>4</u> 5	50 12	119.9 282.1	131.6 499.2	15.6 100.5	63.9 66.2	74.8 10.4	177.4 651.6	129,410 162,870	
uyana	241	32,747	17.0	2,163	82 97	1	2	39.6	499.2 50.1	0.1	0.6	2.4	55.9	6,571	
araguay	336	55,833	0.5	89	72	9	20	14.5	25.0	0.1	0.1	1.4	0.1	4,469	
eru	1,913	69,395	20.1	776 1 565	82 93	10 3	8 4	7,089.7	9,137.2 18.4	5.9 0.0	8.2 0.4	20.9	1,136.1 9.0	66,361	
uriname ruguay	122 139	277,904 40,419	0.7 3.1	1,565 941	93	1	2	8.3 120.1	109.0	0.0	0.4	3.5 13.9	104.0	3,628 4,023	
enezuela	1,233	47,122	8.4	345	47	7	45	335.2	430.1	1.3	16.0	55.4	130.4	44,302	
ceania		54,637	26.2	900	72	10	18	817.5	1,104.2	58.4	122.3	643.2	1,793.6	85,324	
ustralia :::	492	24,708	23.9	1,250	75	10	15	221.8	193.1	14.4	35.3	529.5	933.5	13,800	
iji Iew Zealand	29 327	33,707 83,760	0.1 2.1	85 558	78 42	11 9	11 49	29.1 394.8	43.6 556.9	0.0 42.9	1.7 83.0	21.5 55.4	38.1 671.6	8,985 1,928	
apua New Guinea	801	137,252	0.1	14	1	43	56	26.4	122.8	0.0	0.0	7.4	68.3	16,000	
olomon Islands	45	91,039						49.7	28.8	0.0	0.0	0.5	15.0	11,000	
Developed		11,514	1,221.2	956	46	40	14		27,917.4	2,806.4	3,641.1	49,698.5	28,159.2	1,467,401	

a. Although data were obtained from FAO in 2004, they are long-term averages originating from multiple sources and years. For more information, please consult the original source at http://www.fao.org/waicent/faoinfo/agricult/agl/aglw/aquastat/water_res/index.htm. b. Sectoral withdrawal data may not add up to 100 percent because of rounding. c. Figures are three-year averages for the range of years specified. d. World totals were calculated by WRI. e. Year ending 30 June. f. Year beginning 20-23 March.

Technical Notes

DEFINITIONS AND METHODOLOGY

Actual Renewable Water Resources, measured in cubic kilometers per year (km³/year), gives the maximum theoretical amount of water actually available for each country, although in reality a portion of this water may be inaccessible to humans. Actual renewable water resources are defined as the sum of internal renewable resources (IRWR) and external renewable resources (ERWR), taking into consideration the quantity of flow reserved to upstream and downstream countries through formal or informal agreements or treaties and possible reduction of external flow due to upstream water abstraction. IRWR include the average annual flow of rivers and the recharge of groundwater (aquifers) generated from endogenous precipitation—the precipitation occurring within a country's borders. ERWR represent the portion of the country's renewable water resources that is not generated within the country. ERWR include inflows from upstream countries (groundwater and surface water) and a portion of the water of border lakes or rivers.

Per Capita Actual Renewable Water Resources are measured in cubic meters per person per year (m³/person/year). Per capita actual water resources were calculated by WRI using population data from the United Nations Population Division for the year 2004.

Annual Water Withdrawals, measured in cubic kilometers per year, is the gross amount of water extracted from any source, either permanently or temporarily, for a given use. It can be either diverted towards distribution networks or directly used. It includes consumptive use, conveyance losses, and return flow. Total water withdrawal is the sum of estimated water use by the agricultural, domestic, and industrial sectors. It does not include precipitation.

Per Capita Annual Withdrawals were calculated by WRI using national population data from the UN Population Division for the year 2000.

Withdrawals by Sector, expressed as a percentage, refers to the proportion of water used for one of three purposes: agriculture, industry, or domestic uses. All water withdrawals are allocated to one of these three categories. Agricultural uses of water primarily include irrigation and, to a lesser extent, livestock. Industrial use measures consumption by self-supplied industries not connected to any distribution network for manufacturing, cooling machinery and equipment, producing energy, cleaning and washing manufactured goods, and as a solvent. Domestic uses include drinking water plus water withdrawn for homes, municipalities, commercial establishments, and public services (e.g., hospitals).

Freshwater resources data were provided by AQUASTAT, a global database of water statistics maintained by the Food and Agriculture Organization of the United Nations (FAO). AQUASTAT collects its information from a number of sources—national water resources and irrigation master plans; national yearbooks, statistics, and reports; and national or international surveys.

When possible, FAO cross-checks information between countries to improve assessments in countries where information is limited. When several sources give different or contradictory figures, preference is always given to information collected at national or sub-national level. This preference is based on the assumption that no regional information can be more accurate than studies carried out at the country level. Unless proven inaccurate, official rather than unofficial sources were used. In the case of shared water resources, a comparison between countries was made to ensure consistency at river-basin level.

Inland and Marine Fisheries Production, Capture data refer to the nominal catch of fish, crustaceans, molluscs, aquatic mammals, and other aquatic animals taken for commercial, industrial, recreational, and subsistence purposes from marine, brackish, and inland waters. The harvest from aquaculture and other kinds of farming are excluded. Statistics for aquatic plants are also excluded from country totals. Total capture production includes freshwater fish (carp, tilapias, etc.), diadromous fish (river eels, salmon, etc.), marine fish (flounders, cods, redfishes, tunas, mackerels, sharks, etc.) crustaceans (lobster, shrimp, etc.), and molluscs

(oyster, clams, squid, etc.). Data include all quantities caught and landed for both food and feed purposes but exclude catch discarded at sea.

Inland and Marine Fisheries Production, Aquaculture data refer to the harvest of fish, molluscs, crustaceans, and other aquatic animals cultivated in marine, inland, or brackish environments. Data do not include capture production. Statistics for aquatic plants are also excluded. Aquaculture is defined by FAO as "the farming of aquatic organisms, including fish, molluscs, crustaceans, and aquatic plants. Farming implies some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc. [It] also implies ownership of the stock being cultivated." Aquatic organisms that are exploitable by the public as a common property resource are not included in the aquaculture production.

Production of fish, crustaceans, and molluscs are expressed in live weight, the nominal weight of the aquatic organisms at the time of harvest. For a more detailed listing of the species mentioned above, refer to the original source at http://www.fao.org/waicent/faostat/agricult/fishitems-e-e.html.

Most fisheries statistics are collected by FAO from questionnaires sent to national fisheries agencies. When these data are missing or considered unreliable, FAO estimates fishery production based on regional fishery organizations, project documents, industry magazines, or statistical interpolations. Regional totals represent a sum of available data and may be incomplete.

Trade in Fish and Fisheries Products measures the value of all fisheries products, excluding non-edible shells and aquatic plants, entering (referred to as imports) or leaving (referred to as exports) a country's borders each year through trade. The totals reported here incorporate the same species as the FAO's *Yearbook of Fishery Statistics* (ftp://ftp.fao.org/fi/stat/summary/default.htm). The value of this trade is expressed in millions of U.S. dollars.

In accordance with internationally recommended practice, import statistics include fish caught by foreign fishing craft, whether or not processed on board, landed in domestic ports; export statistics include fish caught by domestic fishing craft, whether or not processed on board, landed in foreign ports. As such, land-bound countries can therefore export marine fish and fish products. Exports are generally on a free-on-board basis (i.e., not including insurance or freight costs). Regional totals are calculated by adding up imports or exports of each country included in that region. The regional totals should not be taken as a net trade for that region, since much trade occurs intra-regionally.

Number of Fishers includes the number of people employed full or part-time in commercial and subsistence fishing (both personnel on fishing vessels and on shore), operating in freshwater, brackish, and marine areas, and in aquaculture production activities. Data on people employed in fishing and aquaculture are collected by the FAO through annual questionnaires submitted to the national reporting offices of the member countries. When possible, other national and regional published sources are also used to estimate figures.

Fish Protein as a Percent of Animal Protein Supply is defined as the quantity of protein from both freshwater and marine fish, seafood, and derived products available for human consumption as a percentage of all available animal protein. FAO calculates per capita protein supply for all products, including fish, in its collection of Supply/Utilization Accounts (SUAs) and food balance sheets. For each product, the SUA traces supplies from production, imports, and stocks to its utilization in different forms—addition to stocks; exports; animal feed; seed; processing for food and non-food purposes; waste (or losses); and lastly as food available for human consumption, where appropriate. For more detailed information, please refer to the following article: "Supply Utilization Accounts and Food Balance Sheets in the Context of a National Statistical System," maintained on-line by FAO at http://www.fao.org/es/ESS/Suafbs.htm.

FREQUENCY OF UPDATE BY DATA PROVIDERS

Most freshwater data are not available in a time series and are updated intermittently; the global data set maintained on-line by AQUASTAT contains data collected over a time span of up to 30 years. Fisheries production and trade data are updated annually by the Fishery Information, Data and Statistics Unit (FIDI) of

FAO. Number of fishers data are updated by FIDI every 2-4 years. The FAO updates the data on fish protein annually; the most recent updates incorporated in these tables are from July 2004.

DATA RELIABILITY AND CAUTIONARY NOTES

Water Resources and Withdrawals: While AQUASTAT represents the most complete and careful compilation to date of statistics on country-level water resources, the quality of the primary information on which it relies varies. Information sources are numerous but rarely complete. Some governments will keep internal water resources information confidential because they are competing for water resources with bordering countries. Many instances of water scarcity are highly localized and are not reflected in national statistics. In addition, the accuracy and reliability of information vary greatly among regions, countries, and categories of information, as does the year in which the information was gathered. All data should be considered order-of-magnitude estimates.

Actual Renewable Water Resources: Exchanges between countries are complicated when a river crosses the same border several times. Part of the incoming water flow may thus originate from the same country in which it enters, making it necessary to calculate a "net" inflow to avoid double counting of resources. In addition, the water that is actually accessible to humans for consumption is often much smaller than the total renewable water resources indicated in the data table.

Actual Renewable Water Resources Per Capita: Water resources data are from a different set of years than the population data used in the calculation. While the water resources data are usually long-term averages, inconsistencies may arise when combining it with 2002 population data. For more information about the collection methodology and reliability of the UN population data, please refer to the notes accompanying the Demographics and Education table.

Total Fisheries Production and Trade in Fish and Fisheries Products: While FISHSTAT provides the most extensive global time series of fishery statistics since 1950, there are some problems associated with the data. Country-level data are often submitted with a 1-2 year delay, Statistics from smaller artisanal and subsistence fisheries are particularly sparse. While these statistics provide a good overview of regional fisheries trends, data should be used with caution and supplemented with estimates from regional organizations, academic literature, expert consultations, and trade data. For more information, consult *Fishery Statistics Reliability and Policy Implications*, published by the FAO Fisheries Department and available on-line at http://www.fao.org/DOCREP/FIELD/006/Y3354M/Y3354M00.HTM.

Number of Fishers data are gross estimates. Many countries do not submit data on fishers, or submit incomplete information; some countries have occasionally omitted fish farmers from the total or included subsistence and sport fishers, as well as family members living on fishing. Apart from the gaps and the heavy presence of estimates due to non-reporting, the information provided by national statistical offices may not be strictly comparable due to the utilization of different definitions and methods in the assessment of the number of people engaged in fishing and aquaculture. FAO recognizes that these statistics are incomplete and may not accurately reflect the current level of employment in the fishing sector.

Fish Protein as a Percent of Total Protein Supply: Food supply is different from actual consumption. Figures do not account for discards (including bones) and losses during storage and preparation. Supply data should only be used to assess food security if it is combined with an analysis of food availability and accessibility. Nonetheless, the data are subject to "vigorous consistency checks." According to FAO, the food supply statistics, "while often far from satisfactory in the proper statistical sense, do provide an approximate picture of the overall food situation in a country and can be useful for economic and nutritional studies, for preparing development plans and for formulating related projects." For more information see Food Balance Sheets: A Handbook, maintained on-line by FAO at http://www.fao.org/DOCREP/003/X9892E/X9892E00.htm.

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