



3.2

Agricultural inputs

	Agricultural land ^a		Irrigated land		Land under cereal production		Fertilizer consumption		Agricultural employment		Agricultural machinery	
	% of land area		% of cropland		thousand hectares		hundred grams per hectare of arable land		% of total employment		Tractors per 100 sq. km of arable land	
	1990-92	2003-05	1990-92 ^b	2003-05 ^b	1990-92	2005-07	1990-92 ^b	2003-05 ^b	1990-92	2003-05	1990-92	2003-05
Afghanistan	58.3	58.3	33.9	33.8 ^c	2,283.3	2,943.7	58.5	47.5	..	..	0	0
Albania	41.1	40.9	55.6	50.5 ^c	242.6	141.0	903.3	924.3	..	58.3	177	125
Algeria	16.3	17.1	6.4	6.9 ^c	3,104.9	2,664.7	144.5	166.1	..	21.1 ^c	128	133
Angola	46.1	46.2	2.3	2.2 ^c	892.6	1,476.4	28.8	28.5	..	..	35	31
Argentina	46.6	47.2	5.6	..	8,509.6	9,332.5	72.7	479.7	0.4	1.2	99	86
Armenia	44.7 ^c	49.3	49.9 ^c	51.5 ^c	162.8 ^c	180.3	502.0 ^c	232.0	..	46.5 ^c	293 ^c	289
Australia	60.5	57.5	4.2	4.9	12,813.8	18,999.9	274.8	492.8	5.5	3.8	67	65
Austria	42.5	40.0	0.3	2.5 ^c	903.2	802.2	1,994.7	3,192.1	7.5	5.4	2,367	2,396
Azerbaijan	53.4 ^c	57.5	68.0 ^c	69.1	627.0 ^c	764.7	440.0 ^c	109.9	32.5	39.6	195 ^c	126
Bangladesh	73.5	69.2	33.8	56.1 ^c	10,985.4	11,547.8	1,135.6	1,723.4	66.4 ^c	51.7 ^c	2	1
Belarus	45.3 ^c	42.7	2.1 ^c	2.0 ^c	2,578.0 ^c	2,261.7	2,292.9 ^c	1,455.0	21.7	..	207 ^c	101
Belgium	44.0 ^d	46.0	2.2 ^d	4.7 ^c	354.3 ^d	319.7	4,545.8 ^d	..	2.8	1.9	1,474 ^d	1,137
Benin	20.6	31.9	0.6	0.4 ^c	659.9	938.1	78.4	2.9	..	..	1	1
Bolivia	32.9	34.6	5.5	4.1 ^c	632.9	839.9	41.7	60.8	1.7	..	25	20
Bosnia and Herzegovina	43.0 ^c	42.1	0.2 ^c	0.3 ^c	305.1 ^c	313.4	0.0 ^c	452.7	..	..	235 ^c	287
Botswana	45.9	45.8	0.2	0.3 ^c	140.1	84.3	21.6	..	..	21.2 ^c	143	159
Brazil	28.9	31.2	4.6	4.4 ^c	19,632.5	19,055.2	655.6	1,570.0	25.6 ^c	20.9 ^c	142	134
Bulgaria	55.7	48.5	29.6	16.6 ^c	2,179.3	1,602.5	1,194.1	1,608.2	19.7	9.6	128	100
Burkina Faso	34.9	39.8	0.6	0.5 ^c	2,724.5	3,259.9	60.3	75.0	..	..	3	4
Burundi	82.9	90.9	1.2	1.5 ^c	218.8	211.8	33.7	16.4	..	..	2	2
Cambodia	25.5	29.6	6.6	7.0 ^c	1,800.8	2,586.3	18.7	30.7	..	..	3	9
Cameroon	19.7	19.7	0.3	0.4 ^c	816.1	1,138.9	34.1	94.3	60.6 ^c	..	1	1
Canada	7.5	7.4	1.4	1.5 ^c	20,864.4	16,038.3	476.3	581.5	4.2	2.7	162	161
Central African Republic	8.0	8.4	0.0	0.1 ^c	104.0	182.3	5.1	..	..	..	0	0
Chad	38.4	38.9	0.5	0.8 ^c	1,241.9	2,510.6	24.6	..	..	..	1	0
Chile	21.0	20.4	57.1	81.0 ^c	741.6	619.1	1,214.7	2,910.5	18.8	13.4	144	274
China	57.0	59.5	36.9	35.6 ^c	93,430.3	83,522.6	2,321.0	3,148.0	53.5	..	64	71
Hong Kong, China	..	..	..	..	..	..	..	..	0.8	0.3	..	..
Colombia	40.5	38.2	14.3	24.0 ^c	1,598.1	1,083.1	1,822.5	3,310.0	1.4	21.3	98	97
Congo, Dem. Rep.	10.1	10.1	0.1	0.1 ^c	1,867.6	1,972.9	8.3	..	..	..	4	4
Congo, Rep.	30.8	30.9	0.3	0.4 ^c	9.1	17.0	34.6	..	..	..	15	14
Costa Rica	55.7	56.5	15.2	20.2 ^c	83.1	57.5	4,521.9	8,528.3	25.2	15.0	259	311
Côte d'Ivoire	59.8	63.4	1.1	1.1 ^c	1,434.0	788.5	150.8	203.0	..	..	20	27
Croatia	43.0 ^c	50.8	0.2 ^c	0.7 ^c	592.7 ^c	556.2	1,514.2 ^c	1,368.6	..	16.8	35 ^c	1,574
Cuba	61.5	60.0	22.6	19.5 ^c	235.0	287.9	1,288.2	193.0	25.1 ^c	21.5 ^c	246	205
Czech Republic	..	55.2	..	0.7 ^c	..	1,569.5	..	1,404.1	10.1	4.3	..	292
Denmark	65.4	62.0	16.9	9.7	1,581.3	1,485.1	2,249.3	1,159.3	5.4	3.0	625	511
Dominican Republic	71.6	70.7	16.5	20.8 ^c	134.2	160.0	1,003.3	..	19.5 ^c	14.4	25	23
Ecuador	28.6	26.9	27.9	28.3	861.0	849.7	508.5	1,731.2	7.0	8.9	54	112
Egypt, Arab Rep.	2.7	3.5	100.0	100.0 ^c	2,410.2	2,975.4	3,977.2	6,706.7	36.2	29.9 ^c	251	324
El Salvador	71.1	82.2	4.9	4.9 ^c	452.6	344.6	1,335.5	904.3	17.9	18.7 ^c	60	52
Eritrea	..	75.1	..	3.5 ^c	..	402.9	..	12.8	..	..	..	8
Estonia	32.4 ^c	19.1	0.5 ^c	0.7 ^c	453.6 ^c	282.0	1,010.9 ^c	724.0	19.5	5.8	455 ^c	646
Ethiopia	..	33.0	..	2.5 ^c	4,585.8	8,727.3	..	119.7	..	44.1 ^c	..	2
Finland	7.9	7.4	2.8	2.9	1,050.5	1,155.9	1,647.0	1,286.0	8.8	4.9	900	784
France	55.3	53.9	11.0	13.3 ^c	9,211.6	9,142.7	2,918.1	2,081.2	..	4.0	784	653
Gabon	20.0	20.0	1.1	1.4 ^c	14.4	19.8	25.1	56.9	..	..	28	29
Gambia, The	63.2	80.7	0.9	0.6 ^c	89.5	207.7	43.7	81.5	..	..	2	3
Georgia	46.5 ^c	43.3	39.9 ^c	44.0 ^c	248.5 ^c	258.8	905.7 ^c	195.7	..	54.4	296 ^c	222
Germany	49.8	48.8	4.0	4.0 ^c	6,673.0	6,710.2	2,615.8	2,145.3	4.0 ^c	2.4	1,253	795
Ghana	55.7	64.8	0.7	0.5 ^c	1,077.6	1,397.7	37.6	78.0	62.0 ^c	..	15	9
Greece	71.3	65.2	31.1	37.9 ^c	1,455.2	1,167.5	2,289.4	1,691.3	22.7	13.4	774	970
Guatemala	39.5	42.9	6.8	6.3 ^c	768.2	810.4	1,072.1	1,285.4	..	..	33	30
Guinea	48.9	51.0	7.0	5.4 ^c	774.2	1,705.7	16.3	26.6	..	..	48	48
Guinea-Bissau	53.2	58.0	4.1	4.5 ^c	112.4	138.3	15.2	..	..	..	1	1
Haiti	57.9	57.7	8.0	8.4 ^c	406.5	440.2	35.0	..	..	..	2	2

	Agricultural land ^a		Irrigated land		Land under cereal production		Fertilizer consumption		Agricultural employment		Agricultural machinery	
	% of land area		% of cropland		thousand hectares		hundred grams per hectare of arable land		% of total employment		Tractors per 100 sq. km of arable land	
	1990-92	2003-05	1990-92 ^b	2003-05 ^b	1990-92	2005-07	1990-92 ^b	2003-05 ^b	1990-92	2003-05	1990-92	2003-05
Honduras	29.8	26.2	3.8	5.6 ^c	502.3	367.8	203.2	544.8	42.1	37.2	31	50
Hungary	70.7	65.4	4.1	2.5	2,803.5	2,903.3	796.3	1,152.6	11.3 ^c	5.3	158	259
India	60.9	60.6	28.3	32.9 ^c	100,759.8	99,409.0	757.6	1,140.1	68.1	..	65	165
Indonesia	23.5	26.3	14.5	12.4 ^c	13,861.2	15,404.7	1,329.8	1,548.1	54.9	44.5	3	2
Iran, Islamic Rep.	38.5	36.1	39.9	47.2	9,611.9	9,074.1	749.6	928.7	25.6	24.9 ^c	136	162
Iraq	21.9	22.9	63.0	58.6 ^c	3,506.1	4,110.7	347.0	..	..	17.0 ^c	72	127
Ireland	70.2	62.4	..	..	298.0	278.3	6,591.0	4,529.4	14.1	6.3	1,667	1,409
Israel	26.7	24.4	44.4	..	107.8	86.3	2,835.7	20,007.8	3.7	2.0	763	757
Italy	55.4	50.7	22.9	25.8 ^c	4,346.9	3,899.0	2,195.5	1,726.2	8.4	4.6 ^c	1,619	2,312
Jamaica	44.0	47.4	11.0	0.0 ^c	2.6	1.6	1,737.0	611.4	27.3 ^c	19.0	242	177
Japan	15.5	12.9	54.3	35.8	2,438.6	2,006.9	3,778.5	4,108.8	6.8	4.5	4,297	4,417
Jordan	12.0	11.5	25.0	27.5	111.9	64.5	969.4	7,294.8	..	3.6 ^c	352	328
Kazakhstan	82.0 ^c	76.9	9.8 ^c	15.7 ^c	22,152.4 ^c	14,512.3	135.5 ^c	68.2	..	34.4 ^c	62 ^c	21
Kenya	47.3	47.4	1.1	1.8 ^c	1,765.9	2,190.8	209.2	375.5	19.0 ^c	..	20	25
Korea, Dem. Rep.	21.0	24.9	58.2	50.3 ^c	1,569.0	1,293.8	3,522.3	..	..	..	297	234
Korea, Rep.	21.9	19.2	47.1	47.6 ^c	1,367.8	1,045.2	4,931.8	5,011.5	16.7	8.3	275	1,344
Kuwait	7.9	8.6	60.0	72.2 ^c	0.4	1.4	666.7	10,631.1	..	0.0 ^c	215	70
Kyrgyz Republic	52.6 ^c	56.2	72.6 ^c	73.1	578.0 ^c	601.0	242.4 ^c	236.7	35.5	43.4	189 ^c	159
Lao PDR	7.2	8.5	16.2	16.5 ^c	625.3	888.8	31.0	..	..	..	11	11
Latvia	40.8 ^c	26.5	1.1 ^c	2.1 ^c	696.7 ^c	..	995.3 ^c	435.2	..	13.0	364 ^c	548
Lebanon	31.1	38.1	28.1	31.3 ^c	41.5	64.9	1,639.3	1,467.0	..	..	188	446
Lesotho	76.7	76.9	0.6	0.9 ^c	177.6	160.7	167.3	..	..	..	57	61
Liberia	27.1	27.0	0.5	0.5 ^c	135.0	120.0	2.5	..	..	..	8	9
Libya	8.8	8.8	21.8	21.9 ^c	355.0	352.8	457.6	506.2	..	..	187	224
Lithuania	54.1 ^c	42.5	0.5 ^c	0.4 ^c	1,134.0 ^c	974.1	540.7 ^c	1,470.0	18.8	15.9	256 ^c	660
Macedonia, FYR	51.4 ^c	48.8	12.1 ^c	9.0 ^c	235.2 ^c	180.3	0.0 ^c	399.8	..	19.4	730 ^c	954
Madagascar	62.5	70.2	30.7	30.6 ^c	1,321.0	1,590.9	34.0	32.4	..	78.0 ^c	5	2
Malawi	40.2	48.3	1.2	2.2 ^c	1,442.6	1,791.8	350.6	235.6	..	..	8	6
Malaysia	22.7	24.0	4.8	0.0 ^c	699.3	685.7	..	8,199.7	23.9 ^c	14.6 ^c	161	241
Mali	26.3	32.4	3.7	4.9 ^c	2,392.7	3,184.4	91.0	..	..	41.5 ^c	11	5
Mauritania	38.5	38.6	11.8	..	132.9	222.7	132.2	..	..	..	8	8
Mauritius	55.7	55.7	16.0	20.8 ^c	0.5	0.1	2,731.5	2,300.9	14.7 ^c	10.0	36	52
Mexico	53.8	55.3	22.0	22.8 ^c	10,075.0	9,918.6	686.4	714.4	24.7 ^c	15.9	128	130
Moldova	77.9 ^c	76.7	..	10.7 ^c	675.6 ^c	915.4	776.5 ^c	121.8	..	41.4	310 ^c	222
Mongolia	79.9	83.3	5.8	7.0 ^c	620.0	135.7	111.5	38.5	..	40.6	73	35
Morocco	68.2	68.1	13.2	15.4 ^c	5,373.9	5,308.6	352.9	569.7	..	45.0	46	58
Mozambique	60.7	61.8	2.8	2.6 ^c	1,508.6	2,180.5	12.0	51.0	..	..	14	14
Myanmar	15.8	17.1	10.1	17.0 ^c	5,282.9	8,454.5	78.8	10.5	69.4 ^c	..	12	11
Namibia	47.0	47.2	0.7	1.0 ^c	206.4	284.0	0.0	21.6	48.2 ^c	..	47	39
Nepal	29.0	29.5	..	47.0	2,957.2	3,339.1	339.6	262.3	81.9	..	23	24
Netherlands	58.9	56.8	61.0	60.2 ^c	185.0	215.5	6,297.8	9,126.6	4.3	2.9	2,056	1,647
New Zealand	65.0	64.5	..	..	153.5	123.5	1,911.4	6,740.8	10.7	7.6	323	499
Nicaragua	33.5	43.5	4.0	2.8 ^c	299.3	500.7	269.9	317.2	38.7	29.0 ^c	20	16
Niger	27.0	30.4	0.5	0.5 ^c	7,010.6	8,798.4	1.2	3.7	..	..	0	0
Nigeria	79.4	80.4	0.7	0.8 ^c	16,416.7	19,572.3	142.2	63.9	..	..	8	10
Norway	3.3	3.4	..	..	361.4	320.9	2,362.0	2,461.0	5.9	3.5	1,723	1,526
Oman	3.5	5.1	71.6	90.0 ^c	2.4	4.5	2,440.6	3,424.2	..	..	42	39
Pakistan	33.7	35.2	..	84.2	11,776.8	12,871.3	962.0	1,594.9	48.9	42.7	133	185
Panama	28.7	30.0	4.8	6.2 ^c	182.4	181.9	666.2	426.1	25.8 ^c	16.4	103	148
Papua New Guinea	2.0	2.3	..	..	1.9	3.2	621.5	1,805.9	..	..	59	52
Paraguay	56.0	60.7	2.9	1.7 ^c	454.7	801.0	91.9	580.9	1.7	31.5 ^c	72	43
Peru	17.1	16.6	29.9	27.8 ^c	682.5	1,160.7	245.9	853.6	1.0	0.7	36	36
Philippines	37.4	40.9	15.7	14.5 ^c	6,957.4	6,737.7	935.5	1,449.1	45.3	37.1	72	111
Poland	61.6	52.8	..	0.6 ^c	8,522.7	8,371.6	894.8	1,296.5	25.2	17.9	821	1,119
Portugal	42.8	41.2	..	23.8 ^c	780.1	359.5	1,122.9	2,018.6	15.6	12.1	569	1,259
Puerto Rico	47.5	25.1	..	..	0.5	0.3	..	..	3.5	2.1	478	438



3.2

Agricultural inputs

	Agricultural land ^a		Irrigated land		Land under cereal production		Fertilizer consumption		Agricultural employment		Agricultural machinery	
	% of land area		% of cropland		thousand hectares		hundred grams per hectare of arable land		% of total employment		Tractors per 100 sq. km of arable land	
	1990-92	2003-05	1990-92 ^b	2003-05 ^b	1990-92	2005-07	1990-92 ^b	2003-05 ^b	1990-92	2003-05	1990-92	2003-05
Romania	64.4	63.8	..	3.2	5,842.3	5,178.7	788.5	428.8	30.6	33.1	146	183
Russian Federation	13.5 ^c	13.2	..	3.6	59,541.3 ^c	41,831.1	417.4 ^c	114.1	..	10.4	98 ^c	44
Rwanda	75.6	78.6	0.3	0.6 ^c	258.2	333.8	19.9	..	..	..	1	0
Saudi Arabia	57.5	80.8	44.2	42.7 ^c	1,061.8	664.1	1,445.8	1,060.3	..	..	20	28
Senegal	41.9	42.6	3.3	4.8 ^c	1,153.8	1,130.9	65.1	134.4	..	..	2	3
Serbia ^e	..	54.8	..	0.9	..	1,945.8 ^c	..	1,199.5	..	..	..	948
Sierra Leone	38.3	40.0	5.2	4.7 ^c	451.7	883.5	22.6	..	..	..	3	1
Singapore	2.2	1.2	..	..	..	..	54,333.3	141,594.4	0.3 ^c	0.2	637	1,083
Slovak Republic	..	42.3	..	3.8	..	772.3	..	766.2	..	5.2	..	158
Slovenia	28.0 ^c	25.0	..	1.2	112.5 ^c	97.3	3,167.8 ^c	3,522.5	..	8.9	..	..
Somalia	70.2	70.7	19.2	15.7 ^c	531.4	624.6	8.8	..	..	..	16	10
South Africa	80.2	82.0	8.3	9.5 ^c	5,735.9	3,570.9	548.6	520.7	..	10.3 ^c	101	43
Spain	60.8	58.3	..	20.3 ^c	7,588.5	6,357.7	1,185.9	1,601.6	10.7	5.5	494	705
Sri Lanka	36.2	36.5	28.0	38.8 ^c	834.3	908.0	2,016.4	2,873.1	44.3	33.9 ^c	180	221
Sudan	51.9	57.2	14.1	10.2 ^c	6,266.9	9,192.4	51.2	35.6	..	..	8	9
Swaziland	75.8	80.9	24.1	26.0 ^c	69.1	59.4	688.5	..	..	..	251	222
Sweden	8.2	7.8	4.1	4.3 ^c	1,184.3	989.4	1,112.0	1,050.6	3.3	2.1	604	616
Switzerland	46.9	38.1	6.0	5.8 ^c	207.3	163.2	4,031.8	2,147.6	4.2	4.0	2,870	2,632
Syrian Arab Republic	73.7	75.6	14.3	24.3 ^c	3,811.9	3,222.8	621.5	856.8	28.2 ^c	27.0 ^c	137	220
Tajikistan	32.1 ^c	30.4	72.9 ^c	68.3 ^c	266.0 ^c	392.8	1,488.4 ^c	..	57.9	67.2	415 ^c	239
Tanzania	38.4	38.8	1.4	1.8 ^c	3,003.3	4,906.7	53.5	69.7	84.2 ^c	..	8	23
Thailand	41.9	36.3	21.0	28.2 ^c	10,593.6	11,402.1	598.2	1,406.9	61.7	43.3	39	256
Timor-Leste	21.9	22.9	..	..	83.7	107.7	..	..	..	..	8	7
Togo	58.7	66.7	0.3	0.3 ^c	610.2	736.6	56.3	61.1	..	..	0	0
Trinidad and Tobago	25.7	25.9	3.3	3.3 ^c	6.4	2.0	1,111.4	1,848.1	11.8	4.9	606	683
Tunisia	58.4	63.0	..	7.2	1,524.7	1,484.7	329.9	460.9	..	..	88	140
Turkey	51.8	53.3	..	19.7	13,759.9	13,328.6	756.7	1,095.5	46.5	32.5	287	426
Turkmenistan	68.6 ^c	70.2	..	79.5 ^c	331.3 ^c	1,022.1	1,296.3 ^c	..	..	..	465 ^c	224
Uganda	61.0	63.9	0.1	0.1 ^c	1,097.6	1,669.7	1.5	15.0	91.5 ^c	69.1 ^c	9	9
Ukraine	72.4 ^c	71.4	7.6 ^c	6.6 ^c	12,542.3 ^c	13,875.5	806.9 ^c	186.5	20.0	19.8	153 ^c	114
United Arab Emirates	3.7	6.7	..	29.9 ^c	1.4	0.0	4,810.4	5,531.3	..	..	50	59
United Kingdom	75.0	70.2	2.5	3.0 ^c	3,548.5	2,880.3	3,323.1	3,020.0	2.2	1.3	762	872
United States	46.6	45.3	11.3	12.5 ^c	64,547.3	57,213.3	1,014.8	1,562.1	2.9	1.6	245	272
Uruguay	84.7	85.4	10.2	14.9 ^c	509.4	571.2	610.2	1,387.4	1.5	4.6 ^c	259	266
Uzbekistan	65.2 ^c	65.6	87.3 ^c	84.9 ^c	1,225.3 ^c	1,601.1	1,631.6 ^c	..	..	..	402 ^c	362
Venezuela, RB	24.7	24.6	13.9	16.9 ^c	798.7	1,092.0	1,388.3	1,747.5	12.6	10.7 ^c	176	186
Vietnam	21.0	30.8	44.6	33.7 ^c	6,726.1	8,399.2	2,299.3	3,308.9	73.8 ^c	58.8 ^c	60	247
West Bank and Gaza	62.5	61.8	..	7.0 ^c	..	32.7 ^c	..	..	..	15.8 ^c	441	715
Yemen, Rep.	33.4	33.6	24.3	33.0 ^c	738.2	746.2	127.2	50.6	52.6 ^c	..	40	43
Zambia	31.4	34.4	0.7	2.9 ^c	813.4	837.2	131.1	0.0	..	..	11	11
Zimbabwe	34.1	39.9	3.6	5.2 ^c	1,430.8	2,095.0	508.1	328.6	..	..	61	75
World	37.3 w	38.2 w	17.0 w	18.0 w	704,455.8 s	689,120.1 s	945.2 w	1,192.9 w	42.6 w	.. w	186 w	208 w
Low income	36.7	38.7	9.5	18.6	103,608.2	131,441.1	339.8	448.7	..	..	40	47
Middle income	37.1	38.2	22.8	20.8	454,663.6	419,524.9	965.8	1,233.0	51.6	..	115	144
Lower middle income	45.5	47.0	27.5	28.1	287,054.6	283,677.2	1,169.7	1,615.2	54.6	..	102	122
Upper middle income	30.1	30.7	10.1	8.9	167,609.0	135,847.6	603.6	703.9	..	17.5	75	127
Low & middle income	37.0	38.3	20.0	20.4	558,271.9	550,965.9	833.7	1,090.7	52.4	..	166	163
East Asia & Pacific	48.3	50.7	..	..	142,265.1	139,631.3	1,821.0	2,627.6	54.5	..	56	96
Europe & Central Asia	28.1	28.4	16.7	10.9	137,268.0	110,119.5	564.7	359.7	..	20.8	190	186
Latin America & Carib.	34.4	35.7	11.3	12.5	47,712.7	48,655.5	585.7	1,108.1	18.6	16.5	121	118
Middle East & N. Africa	23.5	23.6	31.6	33.7	30,590.3	30,102.1	641.4	1,055.7	..	..	116	151
South Asia	54.7	54.7	28.8	39.2	129,690.1	131,101.8	767.2	1,166.3	65.6	..	67	153
Sub-Saharan Africa	42.1	43.9	3.4	3.5	70,745.7	91,355.7	129.0	119.2	..	..	19	13
High income	37.9	38.0	..	..	146,184.0	138,154.2	1,200.2	1,474.7	5.6	3.4	413	432
Euro area	49.7	47.3	13.9	16.5	32,674.3	31,370.1	2,302.5	2,046.1	7.3	4.5	993	1,002

a. Includes permanent pastures, arable land, and land under permanent crops. b. Data for two periods may not be comparable (see *About the data*). c. Data are not available for all three years. d. Includes Luxembourg. e. Includes Montenegro.

About the data

Agriculture is still a major sector in many economies, and agricultural activities provide developing countries with food and revenue. But agricultural activities also can degrade natural resources. Poor farming practices can cause soil erosion and loss of soil fertility. Efforts to increase productivity by using chemical fertilizers, pesticides, and intensive irrigation have environmental costs and health impacts. Excessive use of chemical fertilizers can alter the chemistry of soil. Pesticide poisoning is common in developing countries. And salinization of irrigated land diminishes soil fertility. Thus, inappropriate use of inputs for agricultural production has far-reaching effects.

The table provides indicators of major inputs to agricultural production: land, fertilizer, labor, and

machinery. There is no single correct mix of inputs: appropriate levels and application rates vary by country and over time and depend on the type of crops, the climate and soils, and the production process used.

The data shown here and in table 3.3 are collected by the Food and Agriculture Organization of the United Nations (FAO) through annual questionnaires. The FAO tries to impose standard definitions and reporting methods, but complete consistency across countries and over time is not possible. For example, permanent pastures are quite different in nature and intensity in African countries and dry Middle Eastern countries. Thus, despite standard definitions, data on agricultural land in different climates may not be comparable. Data on agricultural employment, in particular, should be used with caution. In many countries much agricultural employment is informal and unrecorded, including substantial work performed by women and children. To address some of these concerns, this indicator is heavily footnoted in the database in sources, definition, and coverage.

Fertilizer consumption measures the quantity of plant nutrients. Consumption is calculated as production plus imports minus exports. Because some chemical compounds used for fertilizers have other industrial applications, the consumption data may overstate the quantity available for crops. The FAO recently revised the time series for fertilizer consumption and irrigation but only for 2002 onward, and data for 2002–05 are not available for all countries. The fertilizer data from the FAO's previous releases are not necessarily comparable with later data. In the previous release data were based on the total consumption of fertilizers, but in the recent release data are based on the nutrients in fertilizers. Caution should thus be used when comparing data over time.

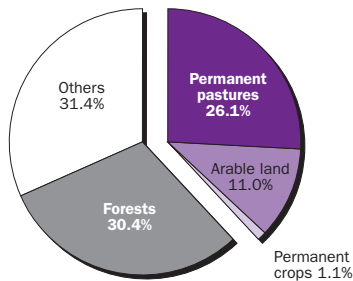
To smooth annual fluctuations in agricultural activity, the indicators in the table have been averaged over three years.

Definitions

- **Agricultural land** is the share of land area that is permanent pastures, arable, or under permanent crops. Permanent pasture is land used for five or more years for forage, including natural and cultivated crops. Arable land includes land defined by the FAO as land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. Land abandoned as a result of shifting cultivation is excluded. Land under permanent crops is land cultivated with crops that occupy the land for long periods and need not be replanted after each harvest, such as cocoa, coffee, and rubber. Land under flowering shrubs, fruit trees, nut trees, and vines is included, but land under trees grown for wood or timber is not.
- **Irrigated land** refers to areas purposely provided with water, including land irrigated by controlled flooding.
- **Cropland** is arable land and permanent cropland (see table 3.1).
- **Land under cereal production** refers to harvested areas, although some countries report only sown or cultivated area.
- **Fertilizer consumption** is the quantity of plant nutrients per unit of arable land. Fertilizer products cover nitrogen, potash, and phosphate (including ground rock phosphate). Traditional nutrients—animal and plant manures—are not included. The time reference for fertilizer consumption is the crop year (July through June).
- **Agricultural employment** is employment in agriculture, forestry, hunting, and fishing (see table 2.3).
- **Agricultural machinery** refers to wheel and crawler tractors (excluding garden tractors) in use in agriculture at the end of the calendar year specified or during the first quarter of the following year.

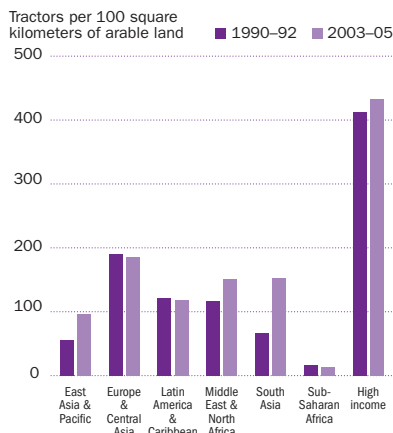
Nearly 40 percent of land globally is devoted to agriculture 3.2a

Total land area in 2005: 130 million sq. km



Note: Agricultural land includes permanent pastures, arable land, and land under permanent crops.
Source: Tables 3.1 and 3.2.

Developing regions lag in agricultural machinery, which reduces their agricultural productivity 3.2b



Source: Table 3.2.

Data sources

Data on agricultural inputs are from electronic files that the FAO makes available to the World Bank.