

	Crop production index		Food production index		Livestock production index		Cereal yield		Agricultural productivity	
	1999-2001 = 100		1999-2001 = 100		1999-2001 = 100		kilograms per hectare		Agriculture value added per worker 2000 \$	
	1992-94	2002-04	1992-94	2002-04	1992-94	2002-04	1992-94	2002-04	1989-91	2001-03
Afghanistan	..	..	..	..	..	..	..	..	..	..
Albania	..	..	..	..	..	..	2,465	3,143	770	1,354
Algeria	85.2	119.1	84.5	110.1	85.5	101.0	812	1,323	1,801	1,964
Angola	67.9	119.5	71.3	113.1	79.4	100.0	321	502	207	155
Argentina	68.7	106.0	75.9	101.8	92.5	97.1	2,907	3,212	6,507	9,272
Armenia	106.9	108.6	104.6	108.8	97.9	107.7	1,642	1,976	..	2,646
Australia	59.9	77.8	72.4	91.3	85.4	99.6	1,714	1,709	20,601	26,957
Austria	89.9	95.5	92.0	94.0	97.6	95.2	5,219	5,612	11,153	24,456
Azerbaijan	115.6	123.0	90.7	118.9	86.7	111.5	1,788	2,587	..	1,026
Bangladesh	74.8	103.9	74.1	103.6	80.3	102.3	2,583	3,410	239	309
Belarus	116.3	113.1	129.4	106.9	137.3	98.8	2,602	2,630	..	2,520
Belgium	87.4	103.9	98.4	99.9	98.7	99.3	6,563	8,504	19,687	38,431
Benin	66.0	111.0	67.8	108.3	92.3	105.7	930	1,060	360	582
Bolivia	68.2	114.7	72.6	111.5	77.5	108.0	1,466	1,880	662	739
Bosnia and Herzegovina	..	..	..	..	..	..	3,559	3,220	..	..
Botswana	100.7	112.9	113.6	105.9	115.4	104.8	248	212	570	408
Brazil	82.2	115.8	76.8	115.0	73.1	114.6	2,261	3,129	1,658	3,004
Bulgaria	113.1	102.9	114.5	102.2	116.3	96.6	2,756	3,026	2,434	6,310
Burkina Faso	76.5	127.4	79.4	115.3	76.4	106.3	865	988	140	163
Burundi	108.0	108.3	108.1	107.3	137.2	100.1	1,348	1,333	119	104
Cambodia	64.1	101.8	66.1	103.2	75.8	102.1	1,366	2,042	..	292
Cameroon	75.7	108.4	78.6	107.9	86.8	102.3	1,000	1,710	725	1,143
Canada	89.1	86.8	84.0	92.4	80.2	103.2	2,568	2,683	27,739	36,702
Central African Republic	76.6	100.0	76.0	105.5	77.4	113.1	935	1,047	291	408
Chad	68.7	108.3	73.8	109.1	84.1	104.3	659	713	164	220
Chile	85.9	106.7	82.8	105.4	78.6	104.8	4,304	5,239	4,775	6,177
China	75.0	108.0	68.4	110.5	61.2	112.3	4,481	4,984	242	365
Hong Kong, China	..	..	..	..	..	..	..	..	..	..
Colombia	98.2	105.2	87.2	103.0	84.1	102.0	2,521	3,475	3,315	2,900
Congo, Dem. Rep.	126.2	97.0	123.3	97.2	103.2	97.0	783	780	230	196
Congo, Rep.	83.3	104.0	82.2	105.3	79.6	110.2	752	780	319	329
Costa Rica	66.7	120.0	78.1	94.3	80.8	98.9	3,468	3,965	3,039	4,306
Côte d'Ivoire	73.5	92.2	75.4	96.4	78.1	117.6	921	1,138	610	804
Croatia	83.6	98.0	92.1	95.7	100.8	93.8	4,124	4,432	..	8,956
Cuba	82.5	112.6	84.7	108.1	99.1	91.2	1,625	3,167	..	..
Czech Republic	97.2	85.7	112.0	95.1	115.4	103.3	4,057	4,308	..	5,078
Denmark	94.2	96.0	96.7	100.8	93.9	103.2	5,174	6,003	18,564	36,320
Dominican Republic	114.9	110.9	104.6	108.2	85.5	106.8	3,826	4,722	2,273	4,076
Ecuador	91.2	97.2	80.7	107.3	70.5	115.3	1,933	2,204	1,969	1,441
Egypt, Arab Rep.	74.1	100.6	71.9	101.8	68.9	105.5	5,918	7,191	1,497	1,952
El Salvador	102.7	89.7	90.0	99.8	81.3	104.7	1,879	2,445	1,571	1,613
Eritrea	91.2	64.0	82.8	79.8	75.9	93.9	523	267	..	64
Estonia	113.4	94.6	160.7	102.1	166.6	105.3	1,687	2,184	..	3,372
Ethiopia	69.9	106.7	71.8	107.3	78.8	106.9	1,143	1,318	..	123
Finland	91.8	104.2	99.6	104.0	101.9	103.7	3,357	3,231	16,056	30,391
France	92.1	95.8	95.9	97.8	97.4	100.8	6,515	7,034	20,265	38,647
Gabon	86.0	101.5	88.3	100.9	88.4	99.9	1,805	1,641	1,571	1,696
Gambia, The	55.5	64.7	59.7	68.1	102.1	101.7	1,197	1,107	234	226
Georgia	119.7	94.7	100.9	104.3	77.8	109.1	1,927	2,049	..	1,374
Germany	83.7	90.1	91.8	94.8	96.8	100.6	5,625	6,324	10,963	22,127
Ghana	69.1	114.3	70.2	114.2	90.9	107.0	1,237	1,406	315	338
Greece	96.1	95.0	99.3	97.0	103.0	98.6	3,674	3,539	7,579	9,226
Guatemala	79.8	101.5	78.7	104.6	80.2	99.8	1,849	1,735	2,121	2,261
Guinea	80.5	104.4	79.9	107.7	68.5	111.1	1,133	1,406	171	225
Guinea-Bissau	73.1	101.6	76.0	101.6	86.4	102.3	1,423	1,138	224	247
Haiti	101.9	99.6	95.7	101.8	76.7	109.2	948	868	802	469

Agricultural output and productivity

	Crop production index		Food production index		Livestock production index		Cereal yield		Agricultural productivity	
	1999-2001 = 100		1999-2001 = 100		1999-2001 = 100		kilograms per hectare		Agriculture value added per worker 2000 \$	
	1992-94	2002-04	1992-94	2002-04	1992-94	2002-04	1992-94	2002-04	1989-91	2001-03
Honduras	97.0	111.5	90.5	109.0	76.6	106.0	1,323	1,400	961	1,146
Hungary	89.1	88.5	93.5	96.0	101.7	103.9	3,567	4,250	3,456	4,114
India	84.0	97.0	80.8	100.1	75.2	107.2	2,075	2,313	341	402
Indonesia	87.8	106.3	89.4	107.2	100.4	113.6	3,866	4,229	479	538
Iran, Islamic Rep.	83.1	114.5	82.1	111.0	77.4	102.1	1,690	2,387	1,799	2,354
Iraq	..	..	..	..	..	..	..	..	..	..
Ireland	89.8	98.0	95.1	95.5	94.8	95.5	6,237	7,030	..	..
Israel	92.5	98.8	81.2	106.6	80.5	111.3	2,723	3,109	..	..
Italy	98.9	90.1	98.2	92.8	95.0	99.5	4,745	4,886	11,411	21,436
Jamaica	100.2	99.7	94.0	100.7	81.9	103.3	1,491	1,167	1,658	1,937
Japan	108.7	95.8	106.9	97.6	107.0	100.0	5,585	5,949	19,163	25,339
Jordan	109.0	144.3	98.5	135.1	92.8	98.9	1,462	1,073	1,456	960
Kazakhstan	123.0	114.7	136.7	107.5	174.9	105.7	1,056	1,057	..	1,385
Kenya	77.9	96.3	80.4	99.0	83.9	103.8	1,645	1,466	184	148
Korea, Dem. Rep.	..	..	..	..	..	..	5,487	3,310	..	..
Korea, Rep.	89.2	93.7	84.3	94.6	80.3	101.3	5,852	5,991	5,312	9,888
Kuwait	39.6	108.6	35.1	116.0	39.1	116.0	5,722	2,136	..	..
Kyrgyz Republic	60.8	106.7	71.8	103.6	102.6	102.6	2,349	2,767	..	931
Lao PDR	63.5	117.0	63.5	118.3	72.1	111.5	2,487	3,174	351	459
Latvia	126.9	119.0	188.2	108.7	220.3	97.9	1,752	2,290	..	2,385
Lebanon	115.2	95.7	106.3	100.8	68.3	116.3	2,107	2,486	..	43,100
Lesotho	74.1	103.3	95.2	101.4	125.8	100.0	801	963	503	506
Liberia	..	..	..	..	..	..	1,037	917	..	..
Libya	81.4	93.5	79.4	101.7	76.0	101.8	705	626	..	..
Lithuania	87.2	109.5	131.6	105.3	152.9	102.6	1,934	2,788	..	4,071
Macedonia, FYR	90.5	88.2	95.0	88.1	108.5	95.2	2,453	2,747	..	2,935
Madagascar	95.4	101.1	92.4	101.3	92.3	101.4	1,928	2,059	187	176
Malawi	57.7	79.5	49.3	81.3	85.3	101.8	956	1,135	76	121
Malaysia	79.8	109.7	78.4	110.4	97.2	110.8	2,996	3,275	3,694	4,571
Mali	75.6	102.2	81.7	102.4	85.1	110.8	773	822	203	228
Mauritania	85.6	93.6	82.3	105.6	81.2	107.5	793	959	244	278
Mauritius	107.3	100.7	100.4	103.8	82.2	117.8	4,135	4,854	3,718	5,034
Mexico	83.7	102.6	81.8	104.2	78.3	106.1	2,622	2,825	2,194	2,784
Moldova	147.1	107.2	149.7	107.0	168.3	100.0	2,981	2,659	..	726
Mongolia	171.5	112.7	83.1	100.6	81.3	99.6	812	676	1,003	694
Morocco	95.2	123.9	89.6	117.1	80.7	104.3	911	1,192	1,580	1,515
Mozambique	60.5	104.6	65.9	102.5	91.5	100.7	420	862	117	137
Myanmar	71.7	117.5	72.1	117.0	68.2	116.5	2,873	3,517	..	..
Namibia	70.3	107.5	108.2	94.7	115.3	91.0	277	410	792	1,003
Nepal	75.2	107.3	77.2	106.0	82.4	105.3	1,786	2,258	196	208
Netherlands	98.5	95.8	105.4	95.7	105.9	95.3	7,541	7,974	23,496	38,085
New Zealand	84.5	98.8	84.0	110.3	85.8	110.3	5,538	6,487	19,930	26,526
Nicaragua	73.9	106.5	73.9	114.5	73.4	119.9	1,733	1,792	1,167	1,934
Niger	74.2	112.7	78.6	110.6	86.2	103.0	313	415	174	172
Nigeria	79.4	103.6	79.5	103.8	82.8	105.5	1,150	1,058	576	836
Norway	115.3	101.8	105.7	98.6	102.3	97.1	3,496	3,901	19,055	30,854
Oman	69.2	88.9	66.9	90.3	75.2	92.0	2,168	2,318	..	..
Pakistan	79.9	100.4	76.8	105.9	75.2	109.2	1,893	2,332	563	690
Panama	111.7	101.9	97.5	104.2	80.2	104.8	1,901	2,447	2,320	3,470
Papua New Guinea	83.9	101.3	84.6	105.8	85.3	110.1	2,759	3,761	406	452
Paraguay	81.3	114.5	78.4	109.3	88.2	99.9	1,908	2,026	2,201	2,380
Peru	57.3	103.9	61.3	103.6	70.1	102.6	2,697	3,069	1,196	1,734
Philippines	87.2	107.6	81.5	111.6	67.4	121.5	2,209	2,825	910	1,013
Poland	101.3	91.5	99.2	102.7	99.3	104.4	2,573	3,131	..	1,358
Portugal	88.0	98.2	90.4	99.9	88.9	100.4	2,070	2,775	3,807	5,444
Puerto Rico	133.3	99.9	111.2	100.2	104.6	100.2	1,404	1,731	..	..



3.3

Agricultural output and productivity

	Crop production index		Food production index		Livestock production index		Cereal yield		Agricultural productivity	
	1999–2001 = 100		1999–2001 = 100		1999–2001 = 100		kilograms per hectare		Agriculture value added per worker 2000 \$	
	1992–94	2002–04	1992–94	2002–04	1992–94	2002–04	1992–94	2002–04	1989–91	2001–03
Romania	94.7	110.1	101.4	110.8	113.1	110.6	2,441	2,958	2,079	3,430
Russian Federation	114.8	114.1	122.5	113.1	142.7	107.8	1,612	1,891	..	2,204
Rwanda	86.6	117.8	85.4	117.0	76.8	105.5	1,150	1,001	179	225
Saudi Arabia	126.0	105.7	100.8	110.7	70.7	103.0	4,400	3,761	7,280	13,982
Senegal	72.3	73.6	74.1	78.8	83.9	98.2	792	944	270	260
Serbia and Montenegro	99.6	110.0	105.6	105.6	101.8	94.9	3,099	3,505	..	..
Sierra Leone	123.0	108.9	114.7	109.2	88.6	110.0	1,194	1,210	532	285
Singapore	116.1	100.0	215.2	66.2	212.4	71.3	..	..	25,523	32,915
Slovak Republic	..	..	..	..	..	..	..	..	..	..
Slovenia	101.0	98.2	86.6	105.6	83.2	109.1	4,150	4,927	..	30,306
Somalia	..	..	..	..	..	..	..	..	..	..
South Africa	81.4	100.6	85.4	105.7	93.8	109.8	1,901	2,676	1,890	2,238
Spain	81.6	104.3	83.4	103.8	80.5	107.6	2,342	3,395	8,740	14,852
Sri Lanka	89.4	98.4	91.2	99.6	87.9	107.2	2,961	3,305	696	737
Sudan	80.3	115.9	77.5	110.0	75.6	106.1	554	593	352	700
Swaziland	95.9	94.1	107.5	101.9	140.5	115.3	1,407	1,114	1,342	1,158
Sweden	94.0	103.0	96.3	100.4	97.2	97.5	4,003	4,882	20,416	30,469
Switzerland	112.2	93.5	104.3	99.9	103.3	101.9	6,137	6,005	..	..
Syrian Arab Republic	84.0	116.5	81.0	120.7	69.6	110.5	1,396	1,911	2,065	2,799
Tajikistan	118.6	128.7	129.9	126.5	183.7	132.3	1,012	1,977	..	412
Tanzania	88.1	102.6	87.2	104.0	87.7	109.0	1,162	1,476	246	283
Thailand	85.7	105.4	88.7	104.7	98.9	103.7	2,298	2,708	493	588
Togo	81.3	110.6	81.5	104.5	83.6	106.9	821	1,004	356	404
Trinidad and Tobago	116.8	91.9	91.0	121.5	75.0	141.7	3,496	2,688	1,623	2,397
Tunisia	91.7	93.4	84.9	94.7	66.7	98.6	1,208	1,422	2,144	2,438
Turkey	88.1	103.6	90.2	103.2	94.5	101.8	2,097	2,298	1,749	1,764
Turkmenistan	122.3	111.3	75.6	103.8	78.6	97.3	2,385	2,790	..	1,253
Uganda	81.4	107.4	82.5	108.7	86.1	116.8	1,522	1,651	187	230
Ukraine	127.4	112.8	134.9	108.4	155.5	107.2	2,952	2,542	..	1,442
United Arab Emirates	31.8	58.8	34.0	56.4	65.1	113.9	1,676	3,423	..	..
United Kingdom	102.5	100.5	106.4	99.0	106.1	98.5	6,435	7,082	21,655	25,609
United States	92.2	101.2	88.7	102.4	87.1	102.5	5,075	6,138	26,105	47,566
Uruguay	78.8	109.1	82.2	102.3	88.3	97.7	2,728	3,777	5,346	6,632
Uzbekistan	105.2	106.1	92.5	106.9	102.3	104.7	1,678	3,455	..	1,520
Venezuela, RB	79.5	93.1	77.3	99.6	79.5	103.2	2,817	3,242	5,016	6,126
Vietnam	67.2	114.9	70.3	116.0	64.7	120.2	3,344	4,484	212	290
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	83.0	99.5	79.1	105.9	73.7	112.9	1,104	871	361	504
Zambia	88.7	101.3	92.2	103.3	87.3	99.2	1,495	1,514	188	205
Zimbabwe	71.9	76.1	75.1	85.3	86.4	102.3	1,112	605	260	277
World	84.3 w	105.1 w	83.6 w	105.8 w	83.9 w	106.7 w	2,793 w	3,163 w	772 w	776 w
Low income	81.9	102.6	80.2	104.5	77.3	109.3	1,800	2,021	329	375
Middle income	82.2	109.6	80.3	110.0	79.3	110.4	2,782	3,249	550	719
Lower middle income	81.9	110.6	79.3	111.3	77.0	112.3	2,776	3,253	472	617
Upper middle income	84.4	102.2	86.1	102.2	89.8	101.5	2,828	3,222	3,440	3,970
Low & middle income	82.1	107.4	80.3	108.4	78.8	110.2	2,401	2,722	461	565
East Asia & Pacific	77.0	110.6	72.1	112.0	63.8	115.5	3,965	4,400	..	397
Europe & Central Asia	104.9	106.1	112.8	105.7	125.5	104.3	1,936	2,275	1,791	1,869
Latin America & Carib.	80.7	110.9	79.2	109.8	78.8	108.3	2,456	3,012	2,166	2,872
Middle East & N. Africa	86.2	111.0	82.1	110.1	74.4	106.3	1,898	2,398	1,825	2,238
South Asia	83.5	99.7	80.2	102.8	75.1	109.7	2,099	2,423	344	406
Sub-Saharan Africa	80.1	103.5	81.5	104.5	85.6	106.5	1,000	1,071	314	327
High income	90.9	97.9	91.0	99.7	91.7	101.2	4,383	4,939	..	..
Europe EMU	90.7	97.6	93.2	98.6	96.0	99.5	4,808	5,462	11,395	20,544

About the data

The agricultural production indexes in the table are prepared by the Food and Agriculture Organization (FAO). The FAO obtains data from official and semi-official reports of crop yields, area under production, and livestock numbers. If data are not available, the FAO makes estimates. The indexes are calculated using the Laspeyres formula: production quantities of each commodity are weighted by average international commodity prices in the base period and summed for each year. Because the FAO's indexes are based on the concept of agriculture as a single enterprise, estimates of the amounts retained for seed and feed are subtracted from the production data to avoid double counting. The resulting aggregate represents production available for any use except as seed and feed. The FAO's indexes may differ from other sources because of differences in coverage, weights, concepts, time periods, calculation methods, and use of international prices.

To ease cross-country comparisons, the FAO uses international commodity prices to value production. These prices, expressed in international dollars (equivalent in purchasing power to the U.S. dollar), are derived using a Geary-Khamis formula applied to agricultural outputs (see Inter-Secretariat Working Group on National Accounts 1993, sections 16.93–96). This method assigns a single price to each commodity so that, for example, one metric ton of wheat has the same price regardless of where it was produced. The use of international prices eliminates fluctuations in the value of output due to transitory movements of nominal exchange rates unrelated to the purchasing power of the domestic currency.

Data on cereal yield may be affected by a variety of reporting and timing differences. The FAO allocates production data to the calendar year in which the bulk of the harvest took place. But most of a crop harvested near the end of a year will be used in

the following year. Cereal crops harvested for hay or harvested green for food, feed, or silage, and those used for grazing, are generally excluded. But millet and sorghum, which are grown as feed for livestock and poultry in Europe and North America, are used as food in Africa, Asia, and countries of the former Soviet Union. So some cereal crops are excluded from the data for some countries and included elsewhere, depending on their use.

Agricultural productivity is measured by value added per unit of input. (For further discussion of the calculation of value added in national accounts, see About the data for tables 4.1 and 4.2.) Agricultural value added includes that from forestry and fishing. Thus interpretations of land productivity should be made with caution. To smooth annual fluctuations in agricultural activity, the indicators in the table have been averaged over three years.

Definitions

- Crop production index shows agricultural production for each period relative to the base period 1999–2001. It includes all crops except fodder crops. The regional and income group aggregates for the FAO's production indexes are calculated from the underlying values in international dollars, normalized to the base period 1999–2001. The data in this table are three-year averages.
- Food production index covers food crops that are considered edible and that contain nutrients. Coffee and tea are excluded because, although edible, they have no nutritive value.
- Livestock production index includes meat and milk from all sources, dairy products such as cheese, and eggs, honey, raw silk, wool, and hides and skins.
- Cereal yield, measured in kilograms per hectare of harvested land, includes wheat, rice, maize, barley, oats, rye, millet, sorghum, buckwheat, and mixed grains. Production data on cereals refer to crops harvested for dry grain only. Cereal crops harvested for hay or harvested green for food, feed, or silage, and those used for grazing, are excluded.
- Agricultural productivity refers to the ratio of agricultural value added, measured in constant 2000 U.S. dollars, to the number of workers in agriculture.

3.3a

The 10 countries with the highest cereal yield in 2002–04—and the 10 with the lowest

Country	Kilograms per hectare	Country	Kilograms per hectare
Belgium	8,504	Botswana	212
Netherlands	7,974	Eritrea	267
Egypt, Arab Rep.	7,191	Namibia	410
United Kingdom	7,082	Niger	415
France	7,034	Angola	502
Ireland	7,030	Sudan	593
New Zealand	6,487	Zimbabwe	605
Germany	6,324	Libya	626
United States	6,138	Mongolia	676
Switzerland	6,005	Chad	713

Source: Table 3.3.

Data sources

The agricultural production indexes are prepared by the FAO and published annually in its Production Yearbook. The FAO makes these data and the data on cereal yield and agricultural employment available to the World Bank in electronic files that may contain more recent information than the published versions. For sources of data on agricultural value added, see Data sources for table 4.2.