

Agriculture and Food

Sources: Food and Agriculture Organization of the United Nations (FAO), United Nations Population Division

	Average Production of Cereals		Average Cereal Crop Yields		Variation in Domestic Cereal Production (% variation from mean) 1992-2001	Net Trade of Cereals (imports - exports) as a Percent of Consumption 2000 {d}	Average Meat Production Per Capita {a}		Irrigated Land as a Percentage of Total Cropland 1999	Average Annual Fertilizer Use		Average Daily Per Capita Calorie Supply {a,b} kilocalories, 1999	
	Metric Tons 1999-2001 {c}	Percent Change Since 1989-91	Kg per Hectare 1999-2001 {c}	Percent Change Since 1989-91			Kg per Person 1999-2001 {c}	Percent Change Since 1989-91		kg/ha of Cropland 1997-99 {c}	Percent Change Since 1987-89	Total	From Animal Products
Iran, Islamic Rep	12,990	0	1,806	32	10	44	21	24	39	58	(10) e	2,898	269
Iraq	1,408	(45)	530	(43)	25	78	5	(59)	64	69	117	2,446	91
Israel	197	(40)	2,411	(19)	23	94	59	14	45	277	22 e	3,542	660
Jordan	50	(53)	1,949	87	31	96	27	37	19	61	9	2,834	318
Kuwait	3	114	2,260	(45)	26	100	42	111	100	3,167	737
Lebanon	95	19	2,415	24	6	89	35	10	39	198	156	3,256	460
Oman	5	9	2,266	7	2	98	12	(18)	81	90	20
Saudi Arabia	2,293	(46)	3,649	(13)	35	75	28	6	43	89	(39)	2,953	446
Syrian Arab Rep	3,990	54	1,304	95	16	33	22	23	22	65	42 e	3,272	407
Turkey	28,829	2	2,187	6	6	1	20	(3)	17	75	21	3,469	374
United Arab Emirate	0	(85)	598	(69)	64	100	34	25	57	262	47 e	3,182	798
Yemen	679	(2)	1,094	26	10	75	9	(16)	29	17	69	2,002	129

Negative numbers are shown in parentheses. **a.** Data are collected from Oct. 1 to Sept. 30. Data from 1999, for example, are actually from October 1998 to September 1999.

b. 1 kilocalorie = 1 Calorie (U.S.) = 4.19 kilojoules. Figures represent only the average supply available for the population as a whole and do not indicate what is actually consumed by individuals. **c.** Data from three years are averaged to produce the above values.

d. Includes food aid. **e.** Data are collected from July 1 to June 30. Data from 1999, for example, are actually from July 1999 to June 2000.



For more data and statistics, visit EarthTrends, the environmental information portal at <http://earthtrends.wri.org/>

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VARIABLE DEFINITIONS AND METHODOLOGY:

Data on agricultural production, yield, and trade published by FAO are generally gathered by surveys sent to, and filled out by, individual country governments or agencies. These results are compiled by FAO, who supplement missing or inaccurate data with their own estimates.

Average Production of Cereals refer to the amount of cereals produced in a given country or region each year. Data are reported in thousand metric tons. **Cereals** include wheat, barley, maize, rye, oats, millet, sorghum, rice, buckwheat, alpiste/canary seed, fonio, quinoa, triticale, wheat flour, and the cereal component of blended foods. Data relate to crops harvested for dry grain only. Harvesting losses, threshing losses, and unharvested portions of the crop are not included. Production therefore includes the quantities of the commodity sold in the market (marketed production) and the quantities consumed or used by the producers (auto-consumption). Cereal crops harvested for hay or harvested green for food, feed or silage or used for grazing are excluded, although mixed grains and buckwheat are included. The time reference on crop production is based on the calendar year (Jan. to Dec.). That is to say, the data for any particular crop are reported under the calendar year in which the entire harvest or the bulk of it took place. In a number of cases, crops harvested during a split year (starting in November and ending in February, for example) may appear under two different calendar years.

Average Cereal Crop Yields refer to the amount of grain produced per unit of harvested area of cereals in a given country or region each year (i.e. average yield = total production/harvested area). Data are reported in kilograms per hectare of cropland. Area data relate to harvested area. Some countries report sown or cultivated area only; however, in these countries the sown or cultivated area does not differ significantly in normal years from the area actually harvested, either because practically the whole area sown is harvested or because the area surveys are conducted around the harvest period. For most countries, FAO does not directly record yield data but instead divides production data by the area harvested for a particular country and year. In all cases, they are computed from detailed area and production data.

Variation in Domestic Cereal Production, expressed as a percentage, is found by taking the average variation (absolute deviation from mean) of cereal production between 1992 and 2001 and dividing this by the mean production. This is an indicator of whether cereal production is stable enough to ensure a predictable food supply. Please refer to the definition of cereal production for more information.

Net Trade of Cereals as a Percent of Consumption indicates whether countries are able to produce sufficient grain for domestic consumption. It is calculated by dividing net imports (imports minus exports) by total cereal consumption (production + imports – exports). Import and export data have, for the most part, been supplied to FAO by governments through magnetic tapes, national publications and, most frequently, FAO questionnaires. Official trade data have sometimes been supplemented with data from unofficial sources or trade information supplied by other national or international agencies or organizations. Cereal food aid shipments are included in FAO's import and export calculations. Information on food aid shipments has been provided to FAO by the World Food Program (please see <http://www.wfp.org>).

Average Meat Production Per Capita refers to the mass of meat in kg produced annually per person in a given country. Values were calculated by dividing the amount of meat produced (in kilograms) by the population of a given country in a given year. Total meat production comprises horse meat, poultry meat and meat from all other domestic or wild animals such as camels, rabbits, reindeer and game animals. Both commercial and farm slaughter are included. Meat production for most species is calculated from multiplying the number of animals slaughtered by the average dressed carcass weight. Dressed carcass weights exclude offal and slaughter fats. Data relate to animals slaughtered within national boundaries, irrespective of their origin. Production data was collected mostly through annual FAO surveys to governments. Data has been grouped in 12 month periods ending 30 September of the years stated in the tables. For example, animals enumerated in a given country at any time between 1 October and 30 September of the following year are shown under the latter year.

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Irrigated Land as a Percentage of Total Cropland refers to the proportion of cropland equipped to provide water to crops. These include areas equipped for full and partial control irrigation, spate irrigation areas, and equipped wetland or inland valley bottoms.

Cropland includes arable and permanent cropland. Arable land is land under temporary crops (double-cropped areas are counted only once), temporary meadows for mowing or pasture, land under market and kitchen gardens, and land temporarily fallow (less than five years). Abandoned land resulting from shifting cultivation is not included in this category. Permanent cropland 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; this category includes land under flowering shrubs, fruit trees, nut trees and vines, but excludes land under trees grown for wood or timber. Data on land use are reported by country governments in questionnaires distributed by the FAO. However, for this variable, a significant percentage of data is based on FAO estimates, and some data are based on unofficial estimates.

Average Annual Fertilizer Use measures the amount of the nutrients nitrogen (N), potash (K_2O), and phosphate (P_2O_5) consumed annually per unit of cropland (see above for more information on cropland data). Data are reported in kg per hectare of cropland. A large portion of the data refers to the fertilizer year, from 1 July - 30 June. For these countries, 1999 data were actually collected from 1 July 1999 to 30 June 2000. Data are collected through the FAO fertilizer questionnaire.

Average Daily Per Capita Calorie Supply refers to the amount of available food per person, per day, expressed in kilocalories (1 kilocalorie = 1 Calorie = 4.19 kilojoules). **Calorie Supply From Animal Products** refers to the amount of available food from animal products per person, per day. Animal products include: all types of meat and fish; animal fats and fish oils; edible offal; milk, butter, cheese and cream; and eggs and egg products. FAO compiles statistics on apparent food consumption based on Supply/Utilization Accounts (SUAs) maintained in FAOSTAT. SUAs are time series data dealing with statistics on supply and utilization. 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 to the population, where appropriate. For internal consistency, total supply balances with total utilization. In many cases commodities are not consumed in the primary form in which they are presented, e.g. cereals enter the household mainly in processed form like flour, meal, husked or milled rice. To take this fact into account, the caloric value has been derived by applying the appropriate food composition factors to the quantities of the processed commodities, not by examining primary commodities. Per capita supplies are derived from the total supplies available for human consumption by dividing the quantities of food by the total population actually partaking of the food supplies during the reference period. In almost all cases, the population figures used are the mid-year estimates published by the United Nations Population Division.

FREQUENCY OF UPDATE BY DATA PROVIDERS:

Data from FAO are updated annually, with the exception of production data, which is updated three times each year, and trade data, which is updated semiannually. Population data used in per capita calculations are updated every two years by the United Nations Population Division. These updates also often include revisions of past data. Data may therefore differ from those reported in past editions of the *World Resources* report.

DATA RELIABILITY AND CAUTIONARY NOTES:

Agricultural data on production and trade reported to FAO data 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. In addition, problems arise in compiling these data into internationally comparable agricultural statistics and estimating data that are missing. Each variable in FAO's database can have as many as 30,000 data points associated with it for different countries and years. Officials need to ascertain, based on limited information, which one of various figures reported by various sources (national publications, FAO questionnaires, international publications, etc.) is the most recent or the most reliable. Variable definitions and coverage do not always conform to FAO recommendations, and may therefore not always be completely consistent across countries.

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Production of subsistence crops and livestock is seldom reported in records of sales and processing, resulting in missing data points. Estimates of missing data are usually made by following the observed trend of the commodity in question in previous years, while also considering the trends in neighboring countries. When a complete time series is missing for a particular data set, FAO officials base their estimates on first-hand accounts through country visits and data from neighboring countries. For more information, please refer to <http://www.fao.org/ES/ESS/index.htm>.

Cereal Production and Yields rely on accurate estimates of the sown and harvested crop area. However, in many countries, governments change the area sown each year to control prices and production through subsidies and programs. Weather, soil quality, and seed availability often affect crop area in developing countries.

Average Meat Production estimates rely on accurate production figures from processing plants and import/export figures of live animals. Trade data is usually given by number rather by weight, and the size of most domestic animals can vary by a factor of 10 or more depending on the age and condition of the animal. As a result, estimates of "average carcass weight" used to determine meat production vary in accuracy.

Average Annual Fertilizer Use data are excluded for some countries with a relatively small area of cropland, such as Iceland and Singapore. In these cases, the calculation of fertilizer consumed per hectare of cropland yields an unreliable number.

Per Capita Calorie Supply figures shown in the commodity balances represent only the average supply available for the population as a whole and do not necessarily indicate what is actually consumed by individuals. Even if data are used as approximations of per capita consumption, it is important to bear in mind that there could be considerable variation in consumption among individuals. Food supply data are only as accurate as the underlying production, trade, and utilization data.

SOURCES:

Agricultural variables: Food and Agriculture Organization of the United Nations (FAO). 2002. *FAOSTAT On-line Statistical Service*. Rome: FAO. Data available online at: <http://apps.fao.org/>. **Population** (used to calculate per capita values): Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. 2002. *World Population Prospects: The 2000 Revision*. New York: United Nations. Dataset on CD-ROM.