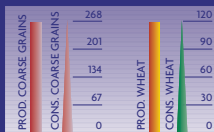


Production, consumption and trade of grains.

Million metric tons, situation in 2001.



Trade flows of wheat and maize in quantity, 2002.



The United Nations SITC (revision 2) gives the following definitions: wheat SITC code 041, maize SITC code 044, barley SITC code 043, rye SITC code 0451, oats SITC code 0452, millet SITC code 0459, sorghum SITC code 04592, and triticale and mixed grains SITC code 04599.

Wheat and coarse grains are staple foods around the world, with annual consumption of 1.5 billion metric tons and international trade amounting to over 200 million tons, valued at some \$30 billion. There are two distinct wheat types: common wheat (*Triticum vulgare*) and durum wheat (*Triticum durum*). Common wheat is the most widely grown, representing almost 95% of world production. It is an important source of food in most parts of the world, except some rural areas in Latin America, sub-Saharan Africa and South-East Asia. Coarse grains include maize (corn), barley, sorghum, oats, rye, millet, triticale and mixed grains. About two thirds of coarse grains production is used by the livestock industry for feed and feed supplements.

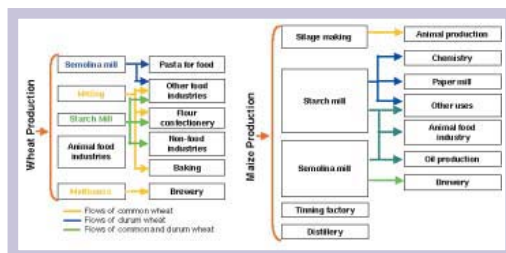


Mechanical harvest of wheat in the United States.

### Consumption

In developed countries, where surpluses exist, wheat production is used for animal feed (40%), milling into flour (25%) and starch production (15%). In developing countries, wheat production is used mainly for human consumption. The pattern for maize is different, with the bulk of production (50–70%) used for silage to feed animals, except in a few regions where maize is used mainly for human consumption (southern Africa, Latin America and some parts of Far-East Asia). Sorghum is eaten in Africa, while rye is incorporated into bread flour, mainly in Europe. Oats, which are mainly used for animal feed, have a growing market as a health food in developed countries. An important use of barley is in the production of malt, which is used to make alcohol, especially beer. Wheat and coarse grains are also used in other industrial processes to produce oils, sweeteners and ethanol. By-products of these processes can be used as ingredients in animal feeds. Population growth is one of the main influences on grain consumption. Other growth factors are rising incomes, urbanization

### Processing chains and final uses of wheat and maize



and associated changes in life styles, which in many developing countries tend to boost the consumption of wheat in place of coarse grains. The same factors lead to increases in demand for meat, thus raising consumption of feed grains.

### International trade in minor coarse grains

Barley is traded in significant volumes, with the European Union being the main exporter, followed by Canada and Australia and, in recent years, Russia and Ukraine. About 25% of barley exports are for malting; Australia and Canada are the principal exporters of malting barley. The United States is by far the leading exporter of sorghum; other regular exporters are Argentina and Australia. Saudi Arabia is the main importer of feed barley, much of it from the European Union. China is the leading buyer of malting barley.

### Agricultural subsidies and grains

Grains are one of the most subsidized agricultural products. Since the Uruguay Round Agreement on Agriculture (1994), world trade in agricultural products has moved towards gradual reform and liberalization of policies, with cuts in import tariffs and export subsidies and some reductions in internal agricultural support. Further steps in this direction are being sought in the international agricultural negotiations at the World Trade Organization that began in 2000. Countries, particularly exporting ones, that do not subsidize agriculture want deeper cuts in subsidies than subsidizing countries, including the European Union, Japan and the United States, are ready to enact. The former argue that subsidies result in unfair competition for their producers, while the latter present subsidies as the only way to maintain agricultural activities on their land and preserve rural livelihoods.

### Living modified organisms (LMOs)

Until now, only two types of genes have been used to genetically modify living organisms. Although LMOs, which are often called genetically modified organisms (GMOs), were introduced in the early 1990s in agricultural production, soya and maize remain the main LMOs cultivated, with respectively 50% and 40% of total LMO production. (Others are cotton and colza.) Soya and maize are produced in only a few countries – the United States, Canada and Argentina – which together account for more than 80% of world production. LMO-producing countries face opposition from those who question the environmental safety of LMO cultivation and want to see scientific proof of their harmlessness before allowing their introduction in agriculture. By March 2004, 88 countries had ratified the Cartagena Protocol, which specifies that LMO-producing countries must conclude agreements with importing countries before they export LMOs to them.

### Pricing

Variations in grain prices are mostly a function of crop size, which depends on the weather. Because of farmers' needs to manage price risks during the crop campaign, grains were among the first commodities to be traded on futures exchanges.

Much of the cost of grain imports reflects freight and port charges. While most grain is now transported in very large vessels equipped for bulk unloading, in places where poor port facilities necessitate small cargoes, unit costs can be very high. This particularly affects low-income developing countries. Most wheat-using countries now have their own flour mills, which enable them to import grain rather than flour, thus reducing import and handling costs.



Traditional storage of maize in Zambia.

### To learn more

UNCTAD/INFOCOMM, Market Information in the Commodities Area [www.unctad.org/infocomm](http://www.unctad.org/infocomm)

International Grains Council [www.igc.org.uk](http://www.igc.org.uk)