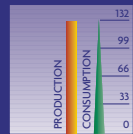
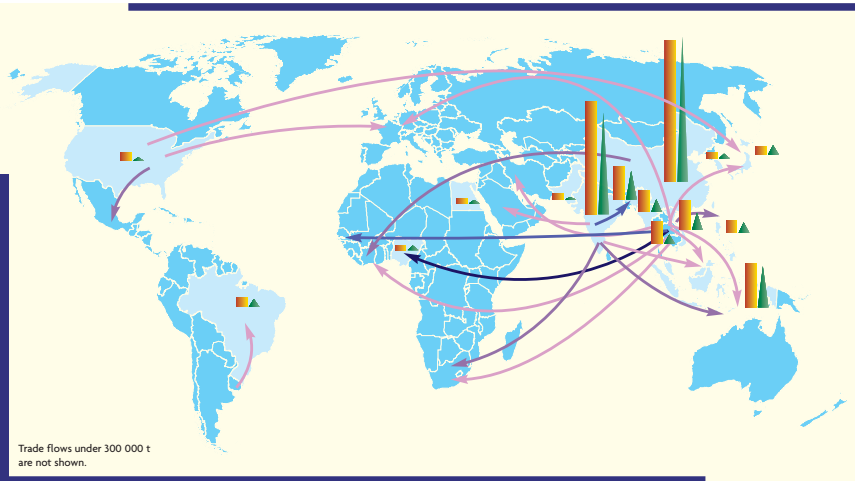


Million metric tons, situation in 2003.



Trade flows of rice in quantity, 2002.



Production, consumption and trade of rice.

The United Nations SITC (revision 2) defines rice as rice SITC 042.

Rice is the third most produced cereal in the world after wheat and maize. It is grown in 113 countries, from tropical rainforests to temperate zones. Developing countries account for 95% of production, with Asia accounting for more than 90% of rice production and consumption.

For more than 3 billion people, rice is the main food staple. In Asia alone, more than 2 billion people get 60% to 70% of their caloric intake from rice and its products. There are a wide range of varieties and qualities of rice. Ordinary Indica varieties account for around 80% of production and international trade.

Medium (Japonica) and glutinous rice account for 10% and aromatic rice for another 10%. The price of aromatic rice is the highest, but production is the most difficult; in India, for example, the typical yield for basmati rice is 2 metric tons per hectare, compared to 5–6 tons per hectare for ordinary Indica rice.

### Rice: the world's largest employer

While some farms in the United States are so large that fields are seeded from airplanes, in most of the world rice is a typical smallholder crop. For almost a billion people, rice provides their main source of livelihood. In Bangladesh, more than 100 million people (four fifths of the population) are involved in rice production.

International rice trade is divided between government-to-government contracts and relatively specialized private-sector grain traders. Since the trade is comparatively risky, many traders only survive for a decade or so.

Trees destroyed for hillside rice cultivation in Thailand. Rice is grown for 2–3 years on steep slopes, until the soil is exhausted. Then the fields are abandoned and more forest land is cleared for new fields.



Women transplanting rice in India.

### Division of labour

Much of the preparatory work for rice production – clearing the land, levelling it, ploughing – is done by men, usually with the help of buffalos or small tractors. The really back-breaking work – planting the seedlings (which in Asia are generally poked into the mud one by one) – tends to be done by women.

### Global warming

In several developing countries, rice production is the major source of greenhouse gases. Irrigated rice generates methane, which is 23 times as polluting per ton as carbon dioxide. By reducing methane emissions (through improving irrigation techniques, cutting back fertilizer use and planting different varieties of rice), countries can generate Certified Emission Reduction Certificates, which they can sell on the international market.

### To learn more

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

Food and Agriculture Organization [www.fao.org/rice2004/index\\_en.htm](http://www.fao.org/rice2004/index_en.htm)

### Segmented markets

Different regions import different kinds of rice. Most of Africa's imports are of cheap Indica rice, with a high percentage of broken grains, from India and Thailand. Japan and Korea import long-grain Japonica rice from the United States, Australia and China. Most of the Middle East's imports are of basmati rice. Europe imports aromatic rice from South Asia and Indica rice from the United States. The limited substitution possibilities add to the market's volatility.

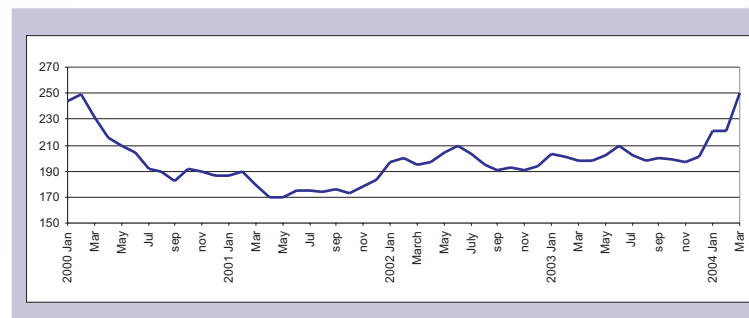
### Needed: a new technological revolution

Almost half of the world's population lives in Asia, and for most, rice is their staple crop. Tens of millions of people were lifted out of poverty by the Green Revolution, which, for rice, enabled annual productivity growth of 3%. But the Green Revolution has spent its forces. At the same time, urbanization and soil degradation are reducing arable land in the region; water is becoming scarcer (a key issue, as it now takes 5,000 litres of water to grow one kilogram of rice); every year brings 50 million more mouths to feed; and Asian rice farmers are aging. Even maintaining current productivity levels seems difficult, and if productivity is to increase in line with demand, a revolutionary new advance is needed in rice growing.

### Prices

Most major rice-producing countries have traditionally exercised strong controls on rice production and trade to achieve food security. Of the 600 million tons produced yearly in the world, 23 to 25 million are traded internationally, and export volumes are driven more by domestic supply/demand balances than by world market prices. As a result, rice prices in international markets are very volatile compared to those of other grains. They also vary greatly among varieties and from place to place; unlike wheat or maize, rice has no single accepted international reference price. In 2004, for the first time ever, demand exceeded supply. China was the major reason for this change. Until 2003, China exported rice (nearly 3 million tons a year). In 2004, it started importing – initially not in great quantities, but the country's needs are large and may increase. Growing urbanization is leading China to produce less rice and consume more. This situation has led to price increases that are likely to persist and could create supply difficulties in the future.

Average monthly prices of white Thai 100% B second grade rice, FOB Bangkok (US\$/metric ton)



Source: Jackson & Co., London.