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Food Grains Around the World

By Frank R. Gomme, *agricultural marketing specialist, Grain and Feed Division, Foreign Agricultural Service*

Much of the world's population continues to depend on two major food grains, wheat and rice, for a significant portion of its daily food intake. In sharp contrast to food habits in the United States, where rice is most often a side dish, in many areas of the world a bowl of rice may be the total meal. In other areas, wheat products are the most important part of each meal. Many countries of the developed world are consuming less wheat and rice per capita today than 25 years ago. Because of production shortfalls and subsistence agriculture, however, unfulfilled world demand for food grains is still large.

World food grain production more than doubled in the past 25 years reaching well over 800 million metric tons this past year. Despite this spectacular increase, many areas still suffer annual shortages. Food grain consumption has risen an average of more than 3.5 percent annually since the early 1960's, with some of the sharpest increases in consumption in the less developed and OPEC countries. Although world trade in food grains has increased steadily over this period, much of the increase in consumption has been dependent upon domestic production.

Wheat Production Doubled

Since 1960, the area devoted to wheat in the world has risen about 15 percent while production has more than doubled. In many areas, wheat yields have shown a dramatic increase, in some cases doubling. In 1984/85, world wheat production exceeded 500 million tons for the first time.

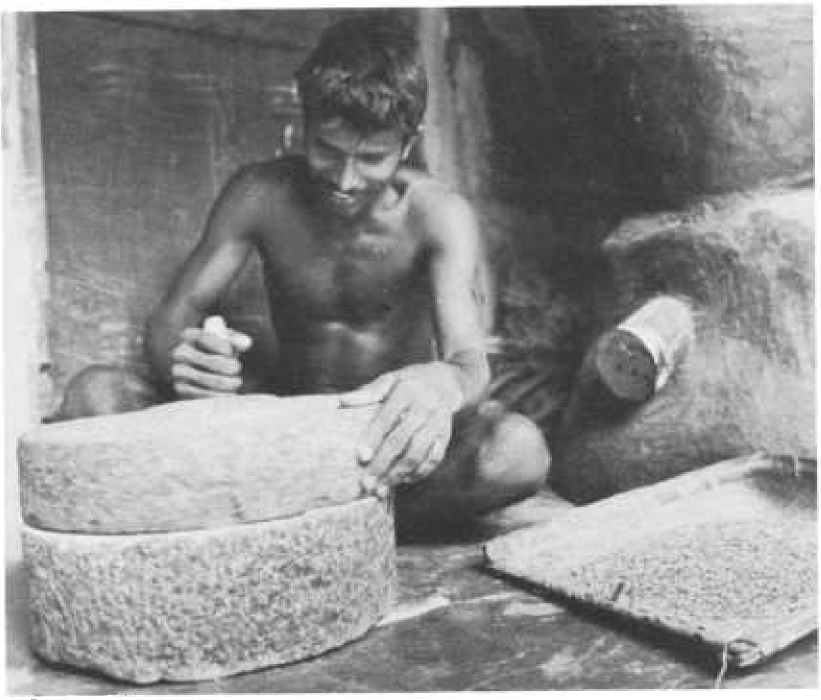
The top five wheat producers in the world—China, the U.S.S.R., the United States, India, and the European Community (EC)—usually account for over two-thirds of world production. China, the U.S.S.R., the EC, and India also import significant quantities of wheat. If major wheat exporters—Canada, Australia, and Argentina—are included in the grouping, nearly 80 percent of the world's wheat crop is accounted for.

The world wheat market has frequently been oversupplied. While wheat-producing countries, particularly the United States, have tried to reduce stocks from time to time, stocks have continued to increase, despite the fact that in 12 of the last 20 years, the United States has limited wheat acreage.

Much of the Western and developed world relies on wheat as a principal food grain. World wheat utilization has more than doubled since the early 1960's, totaling over 500 million tons in 1984/85. Much of this growth has taken place in the developing world where consumption has nearly tripled to 150 million tons in 1984/85. China, the U.S.S.R., and India account for about 45 percent of world wheat consumption. The major exporters—Australia, Argentina, Canada, the EC, and the United States—collectively account for about only 14 percent of world wheat use. Wheat going into livestock feed has grown steadily with the sharpest gains in Eastern Europe, the EC, and the United States. Feed use in 1984/85 at 98 million tons accounts for about 20 percent of wheat utilization.

Wheat Trade Expanding

Since the early 1960's, world wheat trade more than doubled, increasing from an average of 47 million tons in 1960–64 to an average of 101 million tons for 1980–84. A number of factors have contributed to this sharp increase. Wheat import-



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ers, particularly developing countries, experienced strong population growth. In addition, some nations benefited from rapid income growth. Income growth was most dramatic in oil-exporting and other middle-income developing nations. This growth, accompanied by the continued migration of population from rural areas to cities, caused a shift in demand away from some traditional foods to wheat foods such as bread. With demand increasing more quickly than domestic

Wheat production has increased in developing countries. India, for example, has expanded its supplies and has even entered the wheat export market. (India, grinding wheat into flour.)

production, imports increased. Some nations, such as those in central Africa, increased grain imports because per capita production actually declined. In others, such as Pakistan, Brazil, and Egypt, government policies of subsidizing wheat for consumption encouraged demand and imports. In the U.S.S.R. and China, policies of meeting production shortfalls and rising demand with imports have resulted in a significant level of imports.

Major Wheat Traders

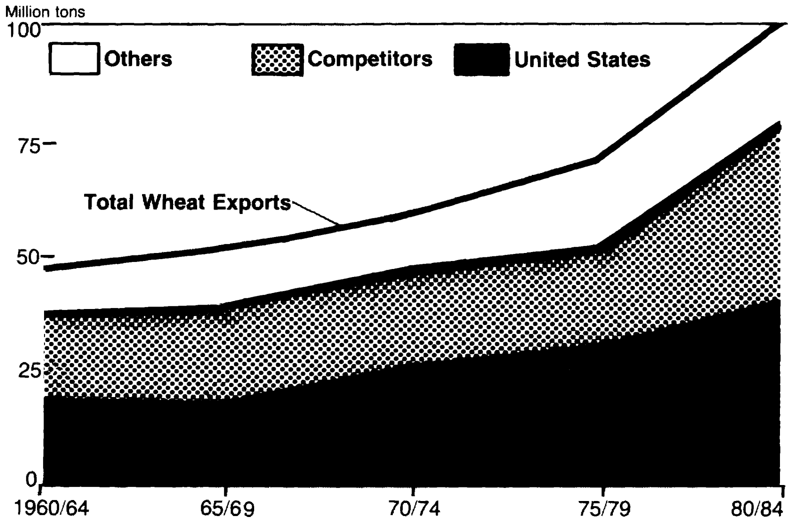
Over the past two decades, the United States, Canada, and Australia have generally accounted for about three-fourths of the wheat moving in world commerce. These relative shares of world trade, although fluctuating from one year to the next, have not changed significantly. In sharp contrast, the market shares for the EC and Argentina have increased. The most striking gain is in the EC, which has shifted from an importer to a position as the world's third largest wheat exporter.

U.S.A. The United States has been the world's largest wheat exporter for much of the twentieth century. In many years, it has supplied roughly half of the world import market. The United States is unique among the major wheat exporters, producing in exportable quantities five major types of wheat. It has numerous port facilities open all year. Large supplies make it a reliable shipper at any time during the year. The United States also is unique among the major exporters in that private trade handles virtually all of the grain export sales.

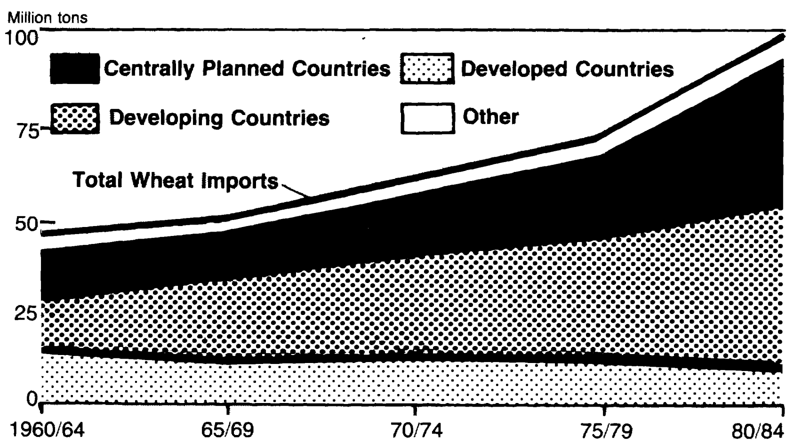
U.S. wheat policies have determined its role as an exporter. When the U.S. price support loan rate and acreage reduction program provide a price floor under the world market, other exporters increase sales to the world market at U.S. expense while importers buy less; U.S. exports fall and the United States finds itself in the role of a residual supplier to world wheat markets. With its wheat-stocking program, the United States absorbs much of the changes in stocks resulting from changing world market conditions.

Grain price variability also has been associated with changes in the world monetary system. The 1972 devaluation of the dollar and the shift from a fixed to a floating exchange rate have led to variations in the value of the dollar in relation to other currencies. The boom in U.S. wheat exports in the 1970's was probably due, in part, to the dollar's depreciation against foreign currencies. In turn, the dollar's appreciation against foreign currencies in the early 1980's, together with escalated floor price levels, has tended to raise the price of

World Wheat Trade By Major Exporters (5-year averages)



World Wheat Trade By Major Importing Regions (5-year averages)



U.S. wheat and reduce U.S. competitiveness.

Canada. Canada accounts for about 20 percent of world wheat trade. Canadian wheat exports have generally increased over the past 25 years peaking at 22 million tons in 1983/84. In recent years, the U.S.S.R. has been its major customer followed by China, the EC, and Japan. In the late 1970's, Canada was not able to capture its share of world wheat trade because transportation bottlenecks at ports and railroad facilities limited annual export growth. It subsequently launched an expansion program in it grain transporting and handling industry. The Canadian Wheat Board is the sole legal exporter of wheat. To assure markets for its annual wheat production, Canada has signed trade agreements with a number of countries, accounting for 12 to 15 million tons or two-thirds of its total exports.

Australia. Australia's share of the world wheat market has averaged about 12 percent with the year-to-year share highly dependent on Australia's fluctuating crop output. Over the past 20 years, Australia has been the world's third largest wheat exporter. In 1981/82, however, it lost that position to the EC. A significant share of Australia's wheat exports has moved to its Asian neighbors, with China and Japan the most important customers. As sales to China have declined in recent years, reflecting smaller imports and a loss in market share to other suppliers, Australia has countered successfully by stepping up sales efforts in the Middle East. Sales to this region in 1983/84 accounted for nearly 40 percent of total shipments, compared with about 20 percent a decade earlier. In contrast, sales to Asian countries accounted for about 37 percent of exports in 1983/84, compared with nearly two-thirds a decade ago. Another major change has been a significant expansion in sales to the U.S.S.R.

The Australian Wheat Board is the major marketing authority for domestic and export sales. Because of limited storage capacity, Australia has restricted the amount of wheat carried from one year to the next. It has a number of wheat sale agreements covering about 3 million tons of annual trade.

Argentina. Argentina's share of the world wheat market has varied sharply over the years, but recently has taken a big jump. Argentina's policy of holding only minimum stocks usually means that each year's production in excess of modest domestic requirements is immediately available to the export market. This policy has resulted in annual export levels ranging from a low of less than 1 million tons in 1970–71 to a high of 9.9 million in 1982/83.

Latin America has traditionally been the principal buyer of Argentine wheat. This trend changed sharply in 1980, when Argentina increased sales to the U.S.S.R. In the 1982/83 marketing year, sales to Latin American countries totaled less than a half million tons while shipments to the U.S.S.R. soared to more than 4 million. The past two marketing seasons have witnessed another shift in Argentina wheat exports as large exportable supplies permitted them to not only continue large sales to the U.S.S.R. but to resume sales efforts to their Latin American neighbors. Wheat export sales are transacted by the National Grain Board and private companies, with the private sector increasing its role in recent years. Argentina also has sought grain agreements, with more than a million tons of each year's sales now covered by them.

The EC. The EC has probably had the most dramatic impact on world wheat trade evolving from a significant importer of wheat to a formidable export competitor. This change reflects price support and trade policies that encourage production in excess of domestic needs and that subsidize exports. In the mid-1970's, EC imports from and exports to third countries both totaled about 5 million tons. By 1984/85, EC wheat imports fell to 2.5 million tons while exports soared to an estimated 17.5 million.

Other major exporters have suffered a substantial reduction in sales to the EC and sharply increased competition from EC wheat in the world market. Over the past 3 years, the U.S.S.R. has become the major market for EC wheat, taking roughly a third of the EC's 1984/85 shipments. The Middle East also has been an important market for EC soft wheat and durum. France, the EC's major wheat exporter has dramatically increased its share of the world export market by using its EC export subsidies and by using export credit guarantees from the French Export Guarantee Agency (COFACE).

Growth in Wheat Imports

Over the past two decades, wheat imports of developing and centrally planned countries have grown rapidly while those of developed countries have declined—from about 30 percent in 1960–64 to about 15 percent of world trade in 1980–84. Most of the decline occurred in the EC. The wheat market share of developing nations peaked during 1975–1979. The recession and the rise in interest rates in the early 1980's caused debt-servicing problems for many of these nations and a decline in imports. Further, the cost of subsidizing consumers proved burdensome, causing some nations to shift towards self-sufficiency.

In recent years, with world wheat trade roughly 100 million tons, centrally planned countries have accounted for about a third of total world imports. Over the past 6 years, the U.S.S.R. has been, by far, the major importer of wheat, accounting for about 20 percent of world trade. Their current wheat buying practices can be traced back to 1972/73, when they decided to import grain rather than absorb crop shortfalls internally. Although erratic, Soviet wheat imports have generally been large since then. China emerged as the second largest wheat importer in the late 1970's. Import potential seemed almost unlimited given a huge population and improving economic conditions. Some slowdown in economic growth and a series of record crops, however, have sharply reduced China's requirements for the near term.

The Japanese share of the world wheat market increased during the early 1970's with income growth and a change in food habits favoring bread or noodles. Since the mid-to-late 1970's, the growth in wheat demand has slowed.

Although wheat production has risen sharply in the developing world since the early 1960's, imports also have soared. In 1984/85, these countries accounted for over half the world wheat trade. Much of this increase in imports has occurred since 1980. In the early 1960's, production, importation, and consumption of wheat were modest in the OPEC countries. Since the 1970's, improved incomes have prompted a surge in wheat consumption, much of it based on imports. Wheat consumption on the African continent also has risen sharply, nearly tripling in the past 20 years. With limited production potential, much of this gain has been from higher imports.

Growing Reliance On LTA's

The growing importance of centrally planned and developing countries in world wheat trade in the past decade has led to an increasing reliance on long-term agreements (LTA's). The state trading agencies, which control grain trade for many of these countries, frequently prefer arrangements that assure long-term supplies. In addition, the growing debt problems experienced by many developing and Eastern European countries in the past 3 years has exacerbated shortages of foreign exchange and triggered interest in barter arrangements, once almost exclusively confined to trade among centrally planned countries.

Wheat Stocks Piling Up

Wheat stocks have risen sharply in recent years as production in the major exporting countries has outstripped their ability to find markets. Not all the growth in stocks has been in the major exporting countries, however. The EC has seen a rapid increase in stockpiles as sharply expanding production has outstripped increases in domestic use and export demand. India, with a series of good crops, has added sharply to wheat stocks and moved into the export market.

Although stocks are at record or near record when compared to the current high levels of utilization, they are not as high as they were in the mid-1960's when they were equivalent to one-third of a year's utilization. The United States still absorbs a significant portion of the cost of storing wheat from one year to the next.

Rice Production Doubled

World rice production has doubled since 1960. Most of the increase has been due to growth in average yields. Since 1960, harvested area has increased 20 percent, but yields have risen by 65 percent. In 1984/85, global rice production is estimated at a record 470 million tons.

Asia produces approximately 90 percent of the world's rice. China alone harvests 40 percent of the global crop. Since only half of the Asian crop is irrigated, 40 percent of the world rice harvest depends on the

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critical timing of the Asian monsoon.

Rice accounts for about one-fifth of the world's grain consumption, including wheat and coarse grains, and is the primary staple in developing countries. Nearly 2 billion people depend on rice for over 80 percent of their diet. China, India, and Indonesia together claim almost two-thirds of global rice consumed annually, with China alone consuming nearly 40 percent.

Rice accounts for one-fifth of the world's grain consumption, and China alone consumes nearly 40 percent of the total. (China, rice field fertilization.)

Kinds of Rice

Four types of rice are consumed in the world—glutinous, aromatic, japonica, and indica. These types are distinguished by length of grain, starch content, and cooking qualities. Countries have specific tastes and preferences for particular types of rice. Consequently, there is not always perfect substitution among the four types. Indica (long grain) rice is grown principally in China, South and Southeast Asia, and the Southern United States and makes up the bulk of world trade. Of the total rice traded, perhaps only one-sixth is the shorter, scented rice grains.

Rice Trade Volatile

Despite the importance of rice as a food staple to a third of the world's population, the volume traded annually is small. Out of a world rice crop of 300 million tons, only about 12 million—or less than 5 percent—is traded in the world market. From 65 to 70 percent of world exports are supplied by five countries: Thailand, the United States, Burma, Pakistan, and China. The United States and Thailand normally account for half the rice exported in the world. Because of the unpredictability of weather, the importance of rice in diets of the developing world, and the concentration of trade among a few key countries, the world rice market has earned the description of being thin and volatile. These same factors have led many governments to try to manage rice supplies. Over the years, trade patterns changed frequently and drastically, as growing conditions shifted a country from an importing position to temporary self-sufficiency or, in the extreme, to an exporter.

The world rice market is inherently unstable with respect to price and sources of demand and supply. With a limited number of traders, an unexpected or new buyer can have dramatic consequences on trade, and hence on prices. A sudden downturn in demand of a key importer, or a seller caught with a large exportable surplus and inadequate storage, will cause equally sharp price swings.

No single world market price exists. There is a lack of commonly used grades and standards, despite understood definitions of rice quality. The price depends on specific quality characteristics. Because consumer preferences can exert a powerful influence over demand, prices for different types or qualities move somewhat independently of each other based on the supply-demand factors for that market.

Rice Imports

Governments are increasing their role in the world rice trade. In developing countries


USDA

The world rice market is unstable, subject to sudden and sharp price changes. (Hong Kong, rice auction.)

primarily, governments attempt to assure adequate supplies, especially in urban areas, and to provide for the welfare of the rice farmers who often account for a significant share of the population. These two objectives often imply tight control of both domestic trade and government imports. Only a handful of countries trade rice privately: the United States, Australia, Italy, Argentina, Uruguay, and Spain. Even the world's current leading exporter—Thailand—sold nearly 40 percent of its rice through a government agency.

Developed Countries. Developed countries account for a relatively small, stable portion of world imports. Within this group, developments in Japan have been the most critical. Japan has long maintained a policy of high price supports for producers. Japanese rice consumption peaked in the early 1960's at 12 million tons—and has been falling since then with a resulting stock buildup. Japanese production increased through the late 1960's, and stabilized thereafter at 11–12 million tons. Japan, an importer of rice from 1960 to 1967, became an exporter in most years after 1968.

Centrally Planned Countries. Rice imports by centrally planned nations have increased slightly as a share of world imports since the early 1960's. This increase is largely due to more purchases by the U.S.S.R. in the late 1970's and early 1980's.

Developing Countries. Developing nations account for about 70 percent of world imports. While this group's total share of world rice trade has remained relatively constant, individual countries have experienced major changes in market shares. Since the early 1960's, African and Middle Eastern nations have increased their share of world imports while the shares of Asian nations have fallen. Several factors are responsible for these changes.

In the 1970's, rapid rates of income growth and expanding urban populations pushed up the demand for rice in many African and Middle Eastern nations.

Increased urbanization shifted consumption patterns from staple diets of cassava toward rice and wheat. From 1962 to 1971, rice imports by the Middle East averaged 352,000 tons annually. But in the next 10 years, total rice imports tripled, to an annual average of 1.2 million tons. In 1983, the Middle East imported a record 2 million tons. African rice imports followed a similar pattern, averaging almost 700,000 tons from 1963 to 1971, then doubling to nearly 1.5 million tons annually in the following decade, reaching a record 3 million tons in 1983.

In general, Asian nations have reduced their shares of world trade. Income growth, increased urbanization, and oil exports by Indonesia, expanded demand in the 1970's. Two differences, however, caused Asian nations to reduce their share of world trade while that for African nations increased. Unlike African nations, Asian countries did not tax producers, with the exception of Thailand. Nominal rates of protection for rice producers in East Asia have been rising. India pursued policies designed to encourage production and stocks. Whereas yields in Africa stagnated or declined, yields in Asia rose considerably because of the adoption of high-yielding varieties of rice. Asian nations have been better able to expand production to meet consumption growth than African nations, which have relied on area expansion.

Rice Exports Dominated by Few

In the early 1960's, the volume of world rice exports was between 6 and 7 million tons, compared with current levels of 12 million tons. About 70 percent of the world's rice exports were supplied by four countries—Thailand and Burma (more than 3 million tons, or about 50 percent), the United States (about 1 million tons or 15 percent), and China (between 7 and 9 percent). By 1972, three countries were supplying 63 percent of the 8.4 million tons traded in the world rice market: Thailand (2.1 million tons), the United States (1.8 million), and China (1.4 million). By 1981, the leaders changed position again. Total rice exports grew to a record 13.2 million tons. The leading exporter was still Thailand, at 3.05 million tons, followed by the United States with 3 million, and Pakistan with almost 1.2 million tons.

During the late 1970's, Thailand imposed export taxes and domestic sales quotas for exporters. In the early 1980's, Thailand adopted a more export-oriented policy and expanded its market share. The United States is currently the second largest rice exporter. During the 1970's, U.S. rice exports expanded rapidly while world prices were more than the U.S. loan rate. The United States also provided aid to several Asian markets—South Vietnam, South Korea, Kampuchea, and Indonesia—and targeted market development activities to Iran. By the 1980's, global recession, policy developments in Indonesia and South Korea, government changes in South Vietnam, Kampuchea, and Iran, and reduced food aid activities all reduced demand, and U.S. prices fell to loan levels. The loan rate acts as a price floor and allows other exporters to undercut the U.S. price, as Thailand has done with its policy changes, so the U.S market share has been falling.