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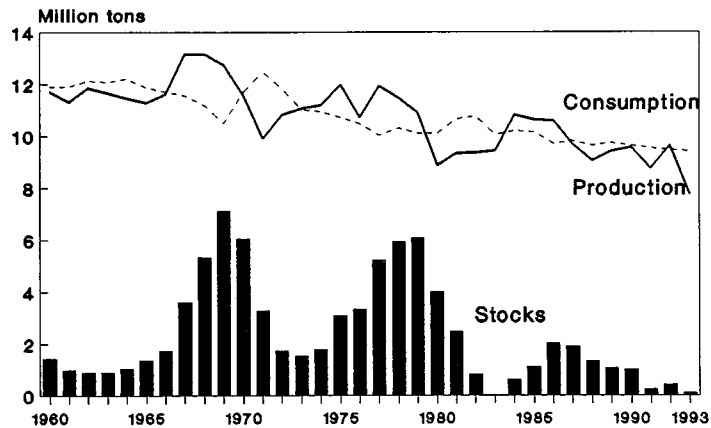
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Rice

Situation and Outlook Report

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Japan's Rice Production, Consumption,
and Stocks



Marketing year: 1993/94 forecast.

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Rice Conversions

1 cwt = 100 pounds = 2.22 bushels = .0453 metric tons

1 metric ton = 2,204.6 pounds = 22.046 cwt = 48.992 bu.

1 cwt rough rice = .032 metric ton milled

1 metric ton milled = 31 cwt rough

Summary

Japan's Rice Shortfall Boosts Forecast Trade

Calendar year 1994 world rice imports are projected up 900,000 tons, or 6.7 percent, to a record 14.9 million tons (milled). The increase in global trade is mainly due to forecast large imports by Japan. Japan's poor 1993 harvest and extremely tight supply situation will likely result in 1993/1994 imports of over 1.5 million tons.

World production is forecast at 345.2 million tons (milled), down from 1992/93's 351.0 million. Global consumption is forecast up at 355.7 million tons for a sixth consecutive year of growth. The net effect of lower production and higher consumption is a projected sharp decline in world ending stocks to 41.5 million tons, down 20 percent from 1992/93's 51.9 million tons and the lowest since 1976/77.

U.S. 1993 rough rice production is forecast to decrease 8 percent from a year earlier to 165.3 million cwt (hundred-weight). The downturn is caused by a projected 6-percent drop in harvested acreage and forecast lower yields.

The acreage decline reflects a 5-percent acreage reduction program (ARP), compared to the 0-percent ARP in 1992, and relatively low prices at planting time. National average yields, forecast at 5,621 pounds per acre, are down from last year's near record 5,722. Delayed planting due to heavy spring rainfall and less than ideal weather during the growing season is responsible.

Total 1993/94 rice supplies are projected down marginally from a year ago to 211.4 million cwt. Reduced 1993 production is offsetting substantially larger carryin stocks. Imports continue to move higher and are expected to make up 3.2 percent of total supplies.

U.S. exports are forecast at 87 million cwt (rough basis), up nearly 13 percent from 1992/93 on the strength of anticipated large exports to Japan. Domestic food use for 1993/94 is forecast up 5 percent based on the growth projected from results of recent Economic Research Service distribution surveys and Rice Millers' Association reports. Brewer's use is projected down slightly, continuing the trend started in 1990/91.

Strong growth in exports and continued growth in domestic use for 1993/94 is expected to draw carryout stocks below carryin. Carryout stocks are forecast to drop 14.5 million cwt from a year earlier to 24.9 million. The stocks-to-use ratio for 1993/94 is projected to be 13.4 percent, down dramatically from last year's 22.7.

U.S. rice prices at the farm level are forecast to range between \$7.50 and \$9.00 per cwt in 1993/94, up substantially from \$5.90 per cwt in 1992/93. Prices are escalating in response to increased world trade and tighter U.S. and world rice supplies. Expectation of substantial rice imports by Japan is boosting U.S. and world prices. Strong demand for U.S. rice in both the export and domestic markets relative to supplies is raising U.S. prices and the U.S. premium (difference between the producer's price and the world rice price loan repayment rate).

U.S. Outlook for 1993/94

U.S. Production Down

U.S. 1993 rice production is forecast to decrease 8 percent from a year earlier to 165.3 million cwt, based on USDA's *Crop Production* report released October 12. Despite the projected drop in output, this would be the third largest U.S. rice crop in history, as it is smaller than the 1992 crop and 1981's record 183 million cwt. Long grain production is expected down 9 percent and medium grain down 4.6 percent. Short grain production is forecast up, but makes up less than 0.5 percent of the total.

The forecast decrease in output is caused by a 6-percent drop in harvested acreage and a 2-percent decline in yields. Contributing factors include a 5-percent acreage reduction program (ARP), compared with 0-percent in 1992; relatively low prices at planting time; heavy spring rainfall throughout most of the southern rice-growing region that delayed planting; reduction in the Texas ratoon crop due to delayed planting of the main crop; and unseasonably warm weather in the Delta during the growing season.

Harvest Delayed in Most Areas

Harvest lagged in most States. By late September, 60 percent of the crop was harvested, compared with 81 percent in 1992 and a historic average of 69.

Crop conditions were mostly good in California and Texas, but Louisiana, Mississippi, and Arkansas had a significant share of their rice classified as fair.

Yields Down From Year Earlier

National average yields, forecast at 5,621 pounds per acre, are down from last year's near-record 5,722. Delayed planting and less than ideal weather are responsible. Over the last 5 years, yields averaged 5,638 pounds per acre and ranged between 5,514 pounds per acre in 1988 and the record of 5,749 pounds in 1989. Most States are forecast to have yields less than last year, but California's yield is forecast at 8,200 pounds per acre--just under last year's record 8,400 pounds.

Supplies Forecast Down Slightly

Total 1993/94 rice supplies are projected down marginally from a year ago to 211.4 million cwt. Reduced 1993 production is offsetting substantially larger carryin stocks. Im-

ports continue to move higher and are expected to make up 3.2 percent of total supplies.

Domestic Use Continues To Increase

Food use for 1993/94 is forecast up 5 percent based on the growth rate projected from results of recent Economic Research Service distribution surveys and reports by the Rice Millers' Association.

Brewers' use is projected down slightly, continuing the declining trend that started in 1990/91. Rice is not used in the popular light beers, but mainly in premium beers, which have a history of using rice. Rice is generally not competitively priced with other brewing adjuncts such as corn by-products, but is used mainly for the distinctive flavor of certain premium beers. Higher rice prices this year may lead to further substitution of other brewing adjuncts for rice in beer production.

Exports Forecast Up Substantially

U.S. exports for 1993/94 are forecast at 87 million cwt, up nearly 13 percent from 1992/93 on the strength of anticipated large exports to Japan. Combined outstanding sales and exports, as reported in *U.S. Export Sales*, were already running 15.7 percent ahead of last year on October 7, 1993. Iran has again surprised the U.S. market by making substantial purchases of U.S. rice. As of October 7, Iran has purchased 129,100 tons.

Stocks Tighten

Growth in use in 1993/94 is forecast to exceed growth in supplies. Ending stocks are forecast to drop 14.5 million cwt from 1992/93 to 24.9 million cwt. The stocks-to-use ratio for 1993/94 is projected to be 13.4 percent, down dramatically from last year's 22.7.

U.S. Prices Forecast To Strengthen

Rice prices at the farm level are forecast to range between \$7.50 and \$9.00 per cwt in 1993/94, up substantially from \$5.90 per cwt in 1992/93. Prices are escalating in response to increased world trade and tighter U.S. and world rice supplies. Expectation of substantial rice imports by Japan is boosting world prices. Strong demand for U.S. rice in both the export and domestic markets relative to available supplies is raising U.S. prices and the U.S. premium (difference between the producer's price and the world price loan repayment rate).

Recap of 1992/93

Near-Record U.S. Supplies in 1992/93

U.S. 1992/93 rice supplies were up 13.5 percent from 1991/92 to 212.6 million cwt. This is the highest since 1986/87 when record stocks contributed significantly to record supplies.

Whereas large stocks elevated supplies in 1986/87, near-record U.S. production boosted supplies in 1992/93. U.S. 1992 rice production increased 13.7 percent from a year earlier to 179.1 million cwt. This is the largest U.S. rice crop since 1981 when outturn was 183 million cwt. Increased production in 1992 was due to greater acreage and higher yields compared with 1991.

Imports and carryin stocks are the other components of total domestic rice supplies. Rice imports reached a record 6.1 million cwt, continuing their steady climb up. Carryin stocks were estimated at 27.4 million cwt.

Total Use and Domestic Use Set Record

Total U.S. rice use, exports plus domestic use and residual, were record high in 1992/93. Total use reached 173.2 million cwt.

U.S. domestic use (food, seed, and brewers' use) and residual (unreported use, processing losses, and estimating errors) were a record 96.1 million cwt.

Food use (about 71 percent of total domestic use and residual) continued to show steady growth. Both total and per capita domestic consumption of U.S. rice were up. Changing tastes and preferences of the U.S. population toward more grain-based foods continued to spur growth, but much of the gain continues to be attributed to the increased Asian and Hispanic segments of the U.S. population. Per capita consumption of rice by Asian- and Hispanic-Americans far exceeds the U.S. average. A large share of this consumption, however, has been supplied by imports of the preferred aromatic rices such as Thai jasmine.

Although food use grew at a steady rate, rice used by breweries (as reported in Bureau of Alcohol, Tobacco, and Fire-

arm statistics) declined. Brewers' use of rice made up about 15 percent of total domestic and residual use.

Rice seed use is a function of acres planted and an average seeding rate. Seed use in 1992/93, used for planting the 1993 crop, was estimated at 3.8 million cwt.

U.S. Exports Were Up in 1992/93

U.S. exports were 77 million cwt in 1992/93, up 16 percent from 1991/92. U.S. prices were very competitive with Thai prices from mid-November 1992 until May 1993. During this period the U.S. price premium of Number 2, 4-percent long grain rice, FOB gulf port, over Thai 100 percent, grade B, FOB Bangkok, tracked at its lowest level of the past four marketing years.

Mexico ended the 1992/93 marketing year as the U.S.'s top rice export destination with U.S. imports in excess of 250,000 tons (combined rough and milled). Brazil was the U.S.'s top import market for rice in the 1991/92 and 1990/91 marketing years, taking 187,000 tons and 295,000 tons, respectively. The Netherlands, Saudi Arabia, and Turkey were also important U.S. rice export destinations in 1992/93.

U.S. Rough Rice Prices Were Low

The increase in U.S. rice supplies and a substantial downturn in international prices put downward pressure on U.S. prices for rough rice throughout the 1992/93 marketing year. Rice prices at the farm level dipped to \$5.90 per cwt, well below the previous year's \$7.58. Except for 1986/87, the season-average price has not been this low since the early 1970's. The 1991/92 price of \$7.58 per cwt was the highest since the marketing loan went into effect in 1985/86.

Stocks Increased

Despite a rise in U.S. exports and continued strong domestic use, growth in supplies exceeded growth in use. Carry-out stocks for 1992/93 increased to 39.4 million cwt, 44 percent above 1991/92. The stocks-to-use ratio for 1992/93 surged to 22.7 percent, up from 17.1 percent for the previous year.

International Rice Situation

Foreign Production and Stocks Forecast Down in 1993/94

Foreign rice production and stocks for 1993/94 are forecast down from 1992/93. Total foreign rice production in 1993/94 is forecast at 340.0 million tons (milled), down 1.5 percent from 1992/93's 345.3 million tons. Foreign consumption for 1993/94 is projected up at 355.7 million tons.

With a smaller crop forecast for the United States in 1993/94, world production and stocks are also expected to fall in 1993/94. World production is forecast at 345.2 million tons, down from 1992/93's 351.0 million. Global consumption is forecast up at 355.7 million tons for a sixth consecutive year of growth. The net effect of lower production and higher consumption is a projected sharp decline in world ending stocks to 41.5 million tons, down 20 percent from 1992/93's 51.9 million tons and the lowest since 1976/77.

Calendar year 1994 world imports are projected up 900,000 tons, or 6.7 percent, to a record 14.9 million tons. Rice prices have been increasing rapidly in anticipation of a substantial tightening of exportable supplies by the end of 1993/94.

Prices should continue to trade higher into early 1994 on the strength of Japan's large imports and the outlook for several of the world's major rice exporting and consuming countries (Australia, Japan, South Korea, Taiwan, Thailand, and the United States) to have very tight stock levels by the end of 1993/94. A tight world stock situation is expected to make the market vulnerable to sharp, weather-driven price swings in 1994. However, assuming normal weather in 1994, it is likely that by April news of significant acreage-responses in several of the major rice producing countries, particularly the United States, will begin to shift market temperament in favor of larger supplies and lower prices.

The outlook for world trade and prices is complicated by the anticipation of Japan's becoming the leading importer of rice in 1994. Japanese consumers prefer japonica rice, which normally accounts for less than 13 percent of world trade in rice. Exports from the United States and Australia, the leading suppliers of japonica rice, are expected to rise. But Japan's needs will likely exceed this season's available export supply of japonica, implying that both Japan and other traditional japonica buyers will also buy more indica rice in 1993/94, raising exports from other suppliers as well. See the special article, "Japan's Rice Imports: Implications for the U.S. and World Rice Markets," for further details.

Major Country Details

Production shortfalls are forecast for Japan, South Korea, Taiwan, Thailand, and the United States; while yearend rice stocks in Australia, Japan, South Korea, Taiwan, Thailand,

and the United States, all major exporters or consumers, are expected to drop to near historic lows.

Wet, cloudy weather throughout the summer in Japan, coupled with acutely cold temperatures in northern Japan during the rice flowering stage, have reduced expected output to 7.5 million tons, down 22 percent from last year's 9.6 million and the smallest since World War II. Because of its reduced crop, Japan is forecast to import 1.6 million tons of rice during its 1993/94 November-October marketing year. Nearly 220,000 tons of imports are expected in calendar 1993, with another 1.4 million tons entering Japan during 1994. Even with the large projected imports, Japan's 1993/94 ending stocks are projected at 131,000 tons (only 1.4 percent of expected use), compared with stocks that have averaged over 800,000 tons during the preceding 5 years.

Similar weather problems in South Korea are expected to lower production to 4.7 million tons, down nearly 12 percent from last year's 5.3 million. Consumption is expected to reduce 1993/94 ending stocks by 31 percent to 1.3 million tons, of which 1.0 million tons are low-quality old-crop high-yield varieties with little market value. As in Japan, South Korean consumers have a strong preference for japonica. Ending stocks of just 300,000 tons of japonica represent only 5.7 percent of expected use. South Korea has a strict ban on rice imports and is not expected to engage in any significant trade during 1993/94.

In Taiwan, use is projected to outpace production in 1993/94 for a fourth consecutive year resulting in ending stocks falling to 85,000 tons (5.5 percent of expected use), the lowest stocks in over 30 years. Taiwan also has a strict ban on rice imports, while exports have averaged about 176,000 tons during the past 3 years. However, tightening supplies may lead Taiwan to lower its planned exports for 1994.

Australia's rice farmers plant in October and harvest in March-May. Improving market incentives are expected to push rice farmers to match 1991/92's record harvested area of 128,000 hectares. However, yields are expected to be 5.4 milled tons per hectare (slightly below the 5-year average of 5.5), compared with last year's 4.7 tons per hectare, resulting in a near-record 690,000 tons, which is up over 16 percent from last year. Forecast record exports in calendar 1994 are expected to lower Australia's 1993/94 rice ending stocks to 139,000 tons, the lowest since 1976/77.

A second year of slightly below normal rainfall in Thailand is expected to permit only limited recovery for the 1993/94 rice crop at 13.0 million tons, up marginally from last year's 12.8 million tons, but well below 1991/92 at 13.5 million tons. Continued rapid exports coupled with 2 consecutive years of slightly below normal harvests are expected to lower Thailand's 1993/94 ending stocks to 633,000 tons (4.8 percent of total use), the lowest since 1965/66.

Good monsoon rains throughout the rice growing regions of India are expected to produce a 1993/94 rice crop of

73.5 million tons, up from last year's 72.5 million tons. Temporary dryness during planting in some northern States prevented further acreage expansion and an even larger crop. India is forecast to produce a record wheat crop of 56.5 million tons, up 2.6 percent from last year. Large government-held stocks of rice and wheat are expected to prevent any rice imports during calendar 1994.

Record World Rice Trade in 1994

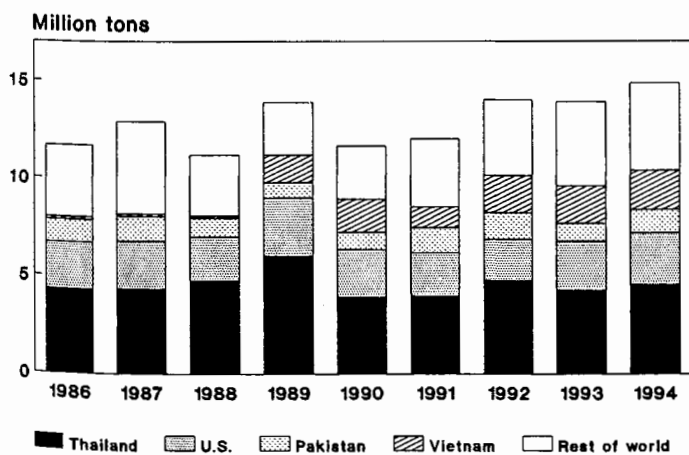
Major Exporters

Thailand is projected to retain its role as the world's largest rice exporter with shipments of 4.6 million tons in 1994, up 7 percent from 1993. Japan is expected to take a significant portion of this, perhaps as much as 500,000 tons. However, higher international prices will likely result in Vietnam, China, and Pakistan capturing some of Thailand's lower priced markets. Vietnam, China, and Pakistan all market intermediate and lower quality rice grades at significant price discounts to Thailand.

The United States is projected to remain the world's second leading exporter of rice. U.S. exports are projected to rise from 2.5 million tons in calendar 1993 to 2.8 million in 1994 on the strength of significant rice exports to Japan. U.S. prices are expected to move higher than world prices due to a strong domestic market and a tightening internal supply situation. As a result, the U.S. is expected to ship less program rice, as well as losing some exports to price-sensitive markets, particularly in Latin America and the Caribbean; however, the expected large exports to Japan will more than offset declines to other destinations.

Vietnam's exports are projected up 5 percent at 2.0 million tons in 1994, on the strength of an anticipated third consecutive year of production over 14 million tons. China's rice exports are expected to fall to 800,000 tons from 1993's estimated 1.1 million tons. Through the first 9 months of 1993, China has been shipping out large amounts of low-quality rice. China holds large stocks of

Figure 1
World Rice Exports by Source



Calendar years: 1993 forecast; 1994 projected.

very low quality and previously undemanded rice. As more exports move out and more farmers shift away from low-quality, high-yielding rice, China is expected to begin to work down its massive stock holdings. The remaining stocks are expected to be of ever-declining quality and increasing age. Despite poor quality, they could become more desirable if prices rise too much for some price-sensitive importing countries. This could result in Chinese exports above the current projection for 1994.

Pakistan is projected to regain its place as the world's fourth leading exporter, overtaking China with 1.2 million tons of exports in 1994. A return to normal production following last year's flood-damaged harvest of 3.0 million tons is projected to produce a crop of over 3.2 million tons, permitting the increase in exports.

Major Importers

Japan is projected to be the world's leading destination for rice in 1994 with imports of 1.4 million tons, overtaking Iran, which is forecast to import over 1 million tons in 1993. Iraq and Saudi Arabia are expected to import 700,000 tons each during 1993, second only to Iran. Iran, Iraq, and Saudi Arabia are projected to import slightly smaller amounts of rice in 1994, yet all three will remain large and important markets.

In Iran, 5 consecutive years of rising production plus slightly lower forecast consumption in 1994 are projected to lower import needs to 750,000 tons. Rice imports in Iraq and Saudi Arabia are projected lower at 550,000 and 600,000 tons, respectively, in 1994. Saudi Arabia is expected to undertake less food aid donations, thus accounting for much of the projected decline in imports. Lower projected consumption accounts for Iraq's smaller import projection.

The European Community (EC) and Brazil are projected to import larger amounts (625,000 and 545,000 tons, respectively) in 1994. A drought-related production shortfall in Spain is responsible for most of the EC's increased import needs, while rising consumption in Brazil accounts for its expected larger imports.

Major Factors Influencing Prices in the World Rice Market

The major factors influencing world prices and international trade in rice can be summarized as divided between near-term and long-term. The long-term factors are further sub-divided between bullish and bearish.

Medium Grain Demand Dominates Near-term World Market Outlook.

- Rising global import demand for 1994.
- i) Japan's outlook for sharply lower production coupled with low current stocks suggests large imports of 1.6 million tons of rice in 1994.

- ii) Marginally higher long grain import demand based on continued growth in Western European, Middle Eastern, African, Canadian, Mexican, and Brazilian markets.
 - Limited export supplies of high-quality medium grain. The United States and Australia are the principal sources of japonica export supplies.
 - Demand for high-quality medium grain rice is expected to exceed the export supply, thus spilling over into the long grain market.
 - Large export supplies of all qualities of long grain.
- i) Thailand, Vietnam, Pakistan, China, and Burma are expected to aggressively seek export destinations for their large rice supplies.
- ii) Aggressive export pricing from China and Vietnam in the low-quality market, have undercut Thailand's traditional share of low-quality rice exports. Subsequently, Thailand has had to reorient its export initiatives more aggressively towards the intermediate- and high-quality rice markets where it competes directly with the United States for sales opportunities.
- iii) Pakistan has recovered from its 1992 flood-damaged rice crop with larger 1993 production, permitting greater exports in 1994.
 - Weak demand from traditional long grain importers.
- i) Consecutive record rice crops in Indonesia are forecast for 92/93 and 93/94 make imports in 1994 unnecessary.
- ii) A record wheat crop and a larger rice crop are forecast for India in 1993/94 make imports in 1994 unnecessary.
- iii) Loss of the Russian commercial market by Thailand in 1993 is also likely in 1994. In 1992 Thailand exported over 400,000 tons of rice to Russia.
 - World stocks are expected to tighten sharply by the end of 1993/94 to 41.2 million tons. This is only 11.6 percent of total consumption, the lowest share since 1972/73. Australia, Japan, South Korea, Taiwan, Thailand, and the United States are all expected to have very tight stocks by the end of 1993/94.

Long-term Bullish Factors

- Canada, Western Europe, and the Middle East remain strong, steady markets for high-quality rice.
- High population growth projections for the Middle East, coupled with strong economies, give it attractive growth potential as a market for rice.

Long-term Bearish Factors

- Import demand for rice in the Former Soviet Union, Eastern Europe, and Africa is projected to grow; but soft credit terms and program exports will be needed to realize sales due to weak economies and the lack of commercial buying power.
- Asian import demand continues to decline as countries are developing the capability to meet their own internal rice needs.
- Vietnam's entry into the world market in 1989 as a major exporter has increased competitiveness in the global market and has effectively lowered world prices.

Japan's Rice Imports: Implications for the U.S. and World Rice Markets

Randy Schnepf ^{1/}

Abstract: Japan is expected to import significant amounts of rice (1.6 million tons) by the end of 1994, due to a poor 1993 rice crop outlook coupled with low stocks. These would be the first significant imports since 1984 when Japan imported 150,000 tons from South Korea. The expected large imports by Japan would help tighten U.S. and world supplies over the next 12 months. Significantly higher world prices could result, since Japan's import needs for high-quality japonica rice appear to exceed the available export supplies from the two principal exporters, Australia and the U.S. This implies a significant price spillover effect into the long grain rice markets. The impact on world rice prices could be further magnified by the psychological impact of Japan's breaking its long-held taboo on rice imports. Such a move also would have important implications for the current Uruguay round of GATT negotiations, where Japan has been a fierce defender of its virtual ban on rice imports.

Keywords: rice, Japan, trade.

Introduction

This past summer extremely cool temperatures in northern Japan, plus constant overcast, wet conditions (including six typhoons) throughout the rest of Japan have lowered the outlook for the 1993 rice harvest. Currently Japan's rice crop is forecast at 7.5 million tons (milled basis), the smallest crop since World War II.

Entering the 1993/94 (November-October) marketing year, Japan found itself with very low supplies. Low beginning stocks of 431,000 tons, coupled with a poor harvest outlook for 1993 suggest the need to import 1.6 million tons of rice by mid-1994 in order to satisfy domestic consumption needs; however, Japan maintains a virtual ban on rice imports. Any visible imports would be perceived as a potential opening of Japan's 9 to 10 million ton domestic rice market. This could weaken Japan's fierce opposition to tariffication of non-tariff trade barriers at the Uruguay Round of negotiations under the General Agreement on Tariffs and Trade (GATT).

On October 5, Japan's Ministry of International Trade and Industry allocated import quotas for a total of 200,000 tons of rice in order to meet immediate needs. Further imports of over 1.4 million tons are expected by the end of 1994.

Japan's import needs are complicated by the specific market characteristics for rice demanded by Japanese consumers. Table rice consists principally of japonica rice, grown in only a handful of countries. The two most likely sources for Japan's table rice needs are the U.S., particu-

larly California, and Australia which grow a medium grain rice similar to that grown in Japan.

The impact on world and U.S. prices could be substantial since Japan's import needs, particularly for high-quality japonica rice, appear to exceed the available export supplies of japonica rice from Australia and the U.S. In addition, the effect on price of the large volume of Japan's needs is further magnified by the psychological impact of Japan's breaking its long-held taboo on rice imports. Such a move also is seen as having important implications for the current Uruguay Round of GATT negotiations, where Japan has been a fierce defender of its virtual ban on rice imports.

The situation is still evolving as the actual size of Japan's rice crop remains uncertain. With consumption already estimated at an historic low, any further decline in Japan's rice crop would imply further offsetting imports.

This paper presents background for understanding the current situation in Japan and its implications for the world and U.S. rice markets. First, it examines the development of Japan's agriculture and trade policy. Second, the pertinent characteristics of Japan's rice marketing and consumption are presented. Third, the current situation in Japan with respect to rice import needs is evaluated. Fourth, some of the characteristics of the international rice trade are briefly described. Fifth, the current status of potential japonica exporters is examined. Finally, the paper discusses the outlook for international and U.S. rice prices.

Development of Japan's Rice Policy

Japan insulates its domestic rice industry from international markets through a policy of high support prices (well above world price) and a virtual ban on rice imports.

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The Staple Food Control Act, enacted in 1942 to control rationing during World War II, gives the Ministry of Agriculture, Forestry, and Fisheries (MAFF) authority to control the purchase, sale, and pricing of imported and domestically produced food staples (mainly rice, wheat, and barley). It is under the framework of the Staple Food Control Act that the Japanese Government controls rice imports.

The Rice Price Deliberation Council is a government advisory board within MAFF which annually helps to determine the purchase and resale prices of both rice and wheat. The Food Agency of the MAFF implements the day-to-day mechanics of Japan's food policies, particularly with respect to food grains.

Under the Staple Food Control Act, government purchase prices were set to cover both the cost of production plus a provision for the financial security of producers. Since 1960, rice prices have been further linked with government objectives of improving rural incomes by calculating the cost of production using non-agricultural labor rates from urban areas. This modification sought to achieve parity between rural and urban incomes. Farmers responded by increasing rice production.

Yet, Japan was a net importer of rice through most of the postwar period until 1968. However, as production expanded and consumption declined, surpluses began to accumulate in the late sixties. Since the oversupply situation of the late sixties, Japanese farm policy has developed three broad objectives: reduce rice production, increase Japan's agricultural self-sufficiency, and maintain farm income. Thus, self-sufficiency (and the undeclared rice import ban) evolved as a central policy goal with the development of supply management programs in the 1970's.

Since 1969 MAFF has employed a series of rice land diversion programs which have been successful in reducing rice area by one-third, from 3.28 million hectares in 1968 to 2.05 million in 1991. Under the diversion programs, farmers are given incentive payments to divert rice land to other priority crops. In addition, the Government of Japan has administered two surplus disposal programs for rice. The first ran from 1969-74 and the second was from 1979-84. Rice was disposed of by export sales, domestic livestock feeding, and increased industrial use.

In order to accommodate rice exports under the first surplus disposal program, the Staple Food Control Act was revised in 1969 so that domestic rice could be lent to foreign countries without interest. This set the stage for Japan's 1984 rice imports from South Korea. In 1969 the Government of Japan lent 330,000 tons of rice to South Korea which had suffered a short crop in 1968. A similar loan of 300,000 was also made to South Korea in the following year. The repayment of the loans was to be in kind over 20 years starting in 1980.

In the spring of 1970, a food aid bill passed the Diet (Japanese Parliament) allowing the government to step up grants and aid to developing countries. Japan also undertook highly subsidized exports of large quantities of rice to mar-

kets of considerable commercial importance. From 1969 to 1974, over 2.8 million tons of rice were exported by Japan with 88 percent going to three important U.S. markets: South Korea (45 percent), Indonesia (27 percent), and Pakistan and Bangladesh (16 percent). Under the second disposal program, Japan exported an additional 1.2 million tons between 1979 and 1980.

In April 1980, U.S. rice interests filed an antidumping complaint with the U.S. Trade Representative under Section 301 of the 1974 U.S. Trade Act (amended by the Trade Agreements Act of 1979). This law provides redress for action taken by a foreign country that is inconsistent with provisions of a trade agreement or is "unjustifiable, unreasonable, or discriminatory, and burdens or restricts U.S. commerce."

Shortly thereafter, still in April of 1980, the U.S. negotiated a bilateral agreement with Japan, the 1980 U.S.-Japan Bilateral Trade Agreement, limiting Japan's rice exports over the remaining 4 years of the rice disposal program. The antidumping complaint was subsequently withdrawn. However, Japan's inability to export freely increased the need for restrictions on domestic production.

In 1984, South Korea repaid 150,000 tons of its loan when Japan's supplies reached a low point due to 4 consecutive years of below-normal rice harvests.

Despite a virtual ban on rice imports, there has not been a single post-war year without some rice imports entering Japan. This is principally the result of Okinawa's re-absorption into Japan in 1971. At the time of re-absorption into Japan, Okinawa's sake (rice wine) brewers demanded special rice import concessions in order to avoid facing Japan's high domestic rice prices. These demands were accepted by the Japanese Government. This amounts to approximately 15,000 to 20,000 tons per year of rice imports. In addition, the Japanese Government places no limits on imports of semi-finished or finished rice products, such as prepared dinners, cakes, flour, etc.

In summary, Japan has a tradition of strong government involvement in the production and trade of rice.

Rice Marketing and Consumption in Japan

Japan's rice crop is planted during May-July, and harvested during September-November. Since 1967's peak 13.2 million tons, annual production has been slowly trending down. During the past 5 years (1988/89 to 1992/93) production has averaged 9.3 million tons (table A1). Similarly, Japan's total rice consumption has declined from a high of 12.5 million tons in 1971 to the current 1993 forecast of 9.4 million tons. Annual per capita rice consumption has declined from an estimated 126.5 kilograms in 1960 to 75.9 in 1992. During the past 5 years (1988/89 to 1992/93) consumption has averaged 9.6 million tons, slightly higher than production, thus drawing down stocks.

Nearly 90 percent of Japan's rice consumption consists essentially of japonica "table rice" (or general household

Table A-1--Japan supply, production, and use, 1960/61 to 1993/94

Year 1/	Area 1,000 ha	Yield Tons/ha	Marketing year: November-October					Calendar year			
			Production	Imports	Exports	Consumption	Ending stocks	Rough production	Imports from U.S.	Imports total	Exports total
			-----1,000 metric tons-----								
1960	3,308	3.54	11,700	140	0	11,900	1,426	16,072	0	136	0
1961	3,301	3.42	11,301	173	0	11,909	991	15,524	0	178	0
1962	3,285	3.60	11,838	177	0	12,115	891	16,261	0	222	0
1963	3,272	3.56	11,659	410	0	12,061	899	16,015	106	415	0
1964	3,260	3.51	11,451	880	0	12,186	1,044	15,730	290	967	0
1965	3,255	3.47	11,292	893	0	11,880	1,349	15,511	156	812	0
1966	3,254	3.56	11,598	475	0	11,700	1,722	15,931	99	509	0
1967	3,263	4.03	13,152	298	0	11,555	3,617	18,066	2	271	0
1968	3,280	4.01	13,148	52	300	11,187	5,330	18,061	2	56	361
1969	3,274	3.89	12,743	15	508	10,480	7,100	17,504	1	19	597
1970	3,293	3.95	11,547	10	910	11,690	6,057	15,861	0	13	909
1971	2,695	3.68	9,907	0	217	12,459	3,288	13,609	0	3	200
1972	2,640	4.10	10,819	24	572	11,829	1,730	14,861	0	24	517
1973	2,622	4.22	11,056	57	305	11,017	1,521	15,187	9	63	284
1974	2,724	4.11	11,186	35	42	10,924	1,776	15,365	16	36	10
1975	2,764	4.33	11,980	20	0	10,700	3,076	16,456	11	20	0
1976	2,779	3.85	10,713	21	0	10,466	3,344	14,716	11	21	17
1977	2,757	4.32	11,916	64	91	10,026	5,207	16,368	3	64	75
1978	2,584	4.43	11,456	18	467	10,299	5,915	15,736	2	20	564
1979	2,497	4.36	10,882	14	648	10,102	6,061	14,948	3	20	653
1980	2,377	3.73	8,873	75	909	10,100	4,000	12,188	1	80	795
1981	2,278	4.10	9,337	66	304	10,642	2,457	12,826	0	66	318
1982	2,257	4.14	9,346	14	223	10,774	820	12,838	2	14	321
1983	2,273	4.15	9,433	19	230	10,042	0	12,957	1	19	102
1984	2,315	4.67	10,809	18	0	10,199	628	14,848	1	18	0
1985	2,342	4.53	10,612	20	0	10,150	1,110	14,577	0	20	0
1986	2,303	4.60	10,599	17	0	9,706	2,020	14,559	18	17	0
1987	2,146	4.51	9,671	16	0	9,805	1,902	13,284	1	16	0
1988	2,100	4.31	9,041	16	0	9,619	1,340	12,419	1	23	0
1989	2,097	4.49	9,416	18	0	9,720	1,054	12,934	1	11	0
1990	2,074	4.61	9,554	17	0	9,620	1,005	13,124	2	34	0
1991	2,049	4.27	8,740	18	0	9,523	240	12,005	2	17	0
1992	2,106	4.57	9,621	20	0	9,450	431	13,216	NA	220	0
1993	2,140	4.08	7,500	1,600	0	9,400	131	12,005	NA	1,400	0

NA = Not Available.

Note: Production, imports, exports, consumption and ending stocks are on a milled basis, unless labeled otherwise.
1/ Production is for indicated year; marketing year runs November-October; calendar year is (indicated year)+1.

Source: FAS, USDA data base.

Table A-2--Rice consumption in Japan, 1965/66 to 1990/93

Year 1/	1,000 tons brown					1,000 tons milled 2/				
	Total	Food	Feed	Industrial	Seed & waste	Total	Food	Feed	Industrial	Seed & waste
1965	12,993	12,037	20	606	330	11,824	10,954	18	551	300
1966	12,503	11,512	28	636	327	11,378	10,476	25	579	298
1967	12,483	11,412	26	714	331	11,360	10,385	24	650	301
1968	12,251	11,188	26	707	330	11,148	10,181	24	643	300
1969	11,965	10,972	26	640	327	10,888	9,985	24	582	298
1970	12,200	10,894	274	712	320	11,102	9,914	249	648	291
1971	13,333	10,812	1,490	718	313	12,133	9,839	1,356	653	285
1972	13,101	10,788	1,265	734	314	11,922	9,817	1,151	668	286
1973	12,558	10,941	496	807	314	11,428	9,956	451	734	286
1974	12,033	10,950	13	754	316	10,950	9,965	12	686	288
1975	11,964	10,878	10	758	318	10,887	9,899	9	690	289
1976	11,819	10,761	12	729	317	10,755	9,793	11	663	288
1977	11,483	10,487	9	676	311	10,450	9,543	8	615	283
1978	11,364	10,367	8	685	304	10,341	9,434	7	623	277
1979	11,218	10,227	7	685	299	10,208	9,307	6	623	272
1980	11,209	10,198	4	711	296	10,200	9,280	4	647	269
1981	11,322	10,128	198	697	299	10,303	9,216	180	634	272
1982	11,817	10,008	838	671	300	10,753	9,107	763	611	273
1983	11,489	9,984	532	671	302	10,455	9,085	484	611	275
1984	10,948	9,989	30	625	304	9,963	9,090	27	569	277
1985	10,882	9,962	51	570	299	9,903	9,065	46	519	272
1986	10,871	9,859	93	628	291	9,893	8,972	85	571	265
1987	10,647	9,709	17	643	278	9,689	8,835	15	585	253
1988	10,584	9,617	16	677	274	9,631	8,751	15	616	249
1989	10,527	9,571	17	671	268	9,580	8,710	15	611	244
1990	10,484	9,554	13	650	267	9,540	8,694	12	592	243

1/ Data is on Japanese fiscal year basis: April-March basis. Data for recent years not yet available.
2/ Converted to milled from brown using rate of 0.91.

Source: MAFF Statistical Yearbook, various issues.

food consumption). The remaining rice consumption is used principally in industrial processing, for seed, or residual. About 600,000 tons of annual rice consumption are used in industrial processing for products such as rice cakes and noodles (table A2). Another 250,000 tons are consumed as seed or lost in processing. Japan's glutinous rice needs are limited to desserts, ceremonial foods, and processed products; thus, it remains a minor part of Japan's total consumption needs.

Under the Japanese marketing system, about 65 percent of rice production is marketed either through direct government or government-sanctioned independent distribution systems. Another 20 percent is sold in nonapproved channels (i.e., the black market) and the remainder is consumed on farm.

Table A-3--Government and retail rice prices in Japan, 1983/84 to 1993/94

Year 1/	Production 2/	Resale 3/	Retail 4/	Retail 5/	Exchange Rate 7/
-----Yen per ton-----					
Brown Basis:					
1983	304,433	283,833	448,400	492,100	
1984	311,467	294,550	463,700	507,800	
1985	311,133	305,450	478,800	522,000	
1986	311,133	309,967	483,000	523,800	
1987	292,617	302,167	483,400	523,500	
1988	279,050	306,600	477,400	516,700	
1989	279,050	306,600	489,800	532,800	
1990	275,000	303,383	493,300	536,400	
1991	273,200	302,050	494,100	537,300	
1992	273,200	302,050	503,200	548,900	
1993	273,200	302,050	509,800	550,900	
-----Yen per ton-----					
Milled Basis: 6/					
1983	277,034	258,288	408,044	447,811	
1984	283,435	268,041	421,967	462,098	
1985	283,131	277,960	435,708	475,020	
1986	283,131	282,070	439,530	476,658	
1987	266,281	274,972	439,894	476,385	
1988	253,936	279,006	434,434	470,197	
1989	253,936	279,006	445,718	484,848	
1990	250,250	276,079	448,903	488,124	
1991	248,612	274,866	449,631	488,943	
1992	248,612	274,866	457,912	499,499	
1993	248,612	274,866	463,918	501,319	
-----US\$ per ton-----					
Milled Basis: 6/					
1983	1,166	1,087	1,718	1,885	237.51
1984	1,193	1,128	1,777	1,946	237.52
1985	1,187	1,165	1,827	1,991	238.54
1986	1,680	1,674	2,608	2,828	168.52
1987	1,841	1,901	3,041	3,294	144.64
1988	1,982	2,177	3,390	3,669	128.15
1989	1,841	2,022	3,231	3,514	137.96
1990	1,728	1,907	3,100	3,371	144.79
1991	1,846	2,040	3,338	3,630	134.71
1992	1,963	2,170	3,616	3,944	126.65
1993	2,250	2,488	4,199	4,538	110.48

1/ Production is for indicated year; marketing year runs November-October; calendar year is (indicated year)+1.
 2/ Government guaranteed procurement price. 3/ Government guaranteed resale price to wholesalers. 4/ Medium-quality non-glutinous rice in Tokyo. 5/ High-quality non-glutinous rice in Tokyo. 6/ Government prices are announced as yen per 60 kilograms of brown rice. Brown rice is converted to milled using rate of 0.91.
 7/ IMF "Financial Statistics Yearbook," various issues; 1983-1993.

The amount of rice that each farmer can sell through legal channels is limited according to rice land diversion programs. In the first step of the farm to market chain, local cooperatives set the quotas and are bound to purchase only the quantity specified in the contracts with growers. From local cooperatives, rice is sold to prefectural cooperatives. At this point the rice, which is a highly specialized product in Japan, is sold to designated collection agencies: 70 percent of this rice is bought and sold between prefectural cooperatives dealing in specific types of rice. They are, in effect, the collection agencies. The remaining 30 percent is sold to private registered dealers. Here, at the fourth step in the chain, 25 percent of the rice is sold by registered dealers to MAFF, which can then sell to licensed wholesalers, who sell to licensed retailers. The other 75 percent bypasses MAFF and goes straight to the licensed wholesalers, who sell to licensed retailers.

This marketing process is guided by MAFF's announced purchase and resale prices. Rice that is marketed through independent channels is usually of higher quality than government rice and may command a premium of 30 to 40 percent over the government-set resale price to wholesalers.

Recent efforts by the government to liberalize the marketing system in response to farmer demand for flexibility and consumer demand for lower prices has expanded the variety of places currently selling rice. However, the MAFF still controls the total number of markets.

In accordance with Japan's food policy, consumers pay for most of the cost of higher domestic rice prices. This amounts to a substantial consumer welfare loss as Japan's producer and consumer prices are far in excess of world market prices. Through the first 9 months of 1993, the non-governmental retail price for milled high-quality, non-glutinous rice in Tokyo averaged 501,319 yen per ton (\$4,530 using the 9-month average exchange rate of 110.48 yen per US\$1). The government purchase price for 1993 is 248,612 yen per ton (\$2,250) for lower quality rice. These prices compare with the 9-month average FOB Bangkok price of \$226 per ton for high quality Thai 100 percent, grade B, milled white rice. (That price is most often quoted as indicative of the export price for rice in the world market.) In other words, the Japanese purchase price is 10 times the world export price of rice, while the non-government retail price for high-quality rice in Tokyo is 20 times the world export price.

Current Situation

This past summer extremely cool temperatures in northern Japan, plus wet, cloudy conditions (including six typhoons) throughout the rest of Japan lowered the outlook for the 1993 rice harvest. On September 30, 1993, the MAFF reported its September 15 rice crop production index to 80, down from the August 15 index of 95, and the lowest post-war index on record. This compares with a normal index of 100. The previous record low of 84 was registered in 1953. The MAFF announced their September 15 crop estimate at 8.5 mmt of brown rice or 7.74 mmt of milled (using a 0.91 conversion rate), down 20 percent from last

year's crop of 9.62 million tons. Poor crop conditions since September 15 lead USDA to forecast Japan's 1993 rice crop at 7.5 million tons (milled basis), the smallest rice crop since World War II. The next MAFF survey of rice crop conditions in Japan is scheduled for October 15.

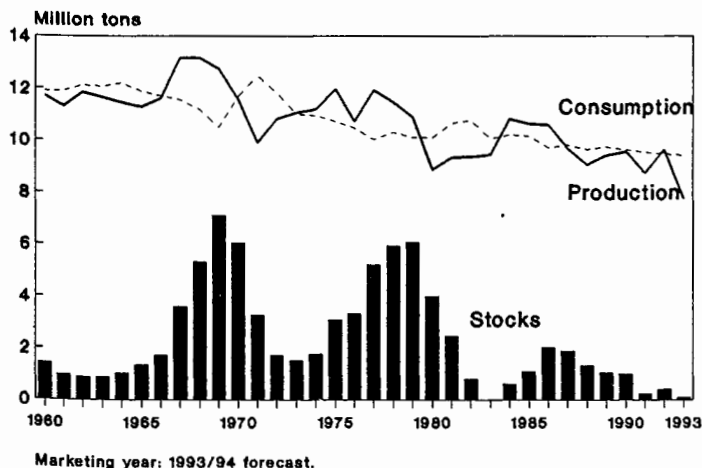
Northern Japan appeared to suffer the worst under the September crop index. Hokkaido reported a 46, while the crop index for Aomori and Iwate prefectures in northern Honshu were 32 and 42, respectively. Miyagi prefecture, one of Japan's largest rice growing areas and where the premium-grade Koshihikari rice is grown, had a crop index of 44.

Entering the 1993/94 marketing year, Japan found itself with very low supplies. A poor harvest in 1991 had reduced Japan's 1991/92 ending stocks to 240,000 tons, compared with normal stocks of over 1 million tons. In 1992, the Government of Japan relaxed rice area restrictions in order to generate larger domestic rice production and replenish stocks. However, last year's harvest was insufficient to rebuild stocks, leaving Japan with 431,000 tons at the start of the 1993/94 marketing year.

Japan's low stocks and poor harvest outlook for 1993 imply the need to import 1.6 million tons of rice in 1993/94 in order to satisfy minimum domestic consumption needs. In Japan's domestic rice wholesale (or auction) markets, price rises equal to the permissible legal limit of 7 percent above the average bidding price of 1990-92 harvest rice have been experienced since September 1993. The Japanese Government is under pressure to announce rice imports, in order to weaken further speculative domestic price rises.

However, the opposition Liberal Democratic Party (LDP) has chosen to make this a political issue by publically demanding that Japan adhere to a strict ban on rice imports. The LDP, which traditionally depends on a rural power base, lost its leadership in the Diet to a coalition group of 7 minor parties headed by Prime Minister Morihiro Hosokawa in recent elections. By seizing upon the rice trade is-

Figure A1
Japan's Rice Production, Consumption, and Stocks



World Trade Background

World trade in rice is highly segmented by variety, quality, and level of processing. The bulk of world rice trade is indica, estimated to be 87 percent of trade since 1990. Approximately 11 percent of the remainder is japonica rice, while aromatic and glutinous comprise the final 1 to 2 percent.

Despite a small presence in world trade, the aromatic rice varieties are among the most well-known and command important price premiums in world markets. Basmati rice from India and Pakistan often fetches prices in excess of \$600 per ton, while jasmine rice from Thailand sells for over \$400 per ton.

Glutinous rice is used in desserts, ceremonial foods, and sweet dishes. It is traded in very small amounts, less than 100,000 tons annually. Thailand is the dominant exporter, while Indonesia, Laos, Japan, and China have imported glutinous rice in the past.

Japonica rice is identifiably different from the more common indica variety. Japonica rice is a round-shaped grain, grown in Japan, the Koreas, Taiwan, north-central and northern China, Australia, the Mediterranean area, northern Brazil, Uruguay, and California (where it is called short or medium grain rice). The traditional importers of japonica rice are the Mediterranean countries of Turkey, Israel, Jordan, Lebanon, and Syria. The most distinguishable cooking feature of japonica rice is its stickiness and moistness.

Indica rice, on the other hand, is a thinner, long grain rice grown principally in central and southern China, south and southeast Asia, and southern United States. When cooked, indica rice produces good volume expansion with distinct grain separation.

Rice quality is measured most commonly as the percent of broken grains. High-quality rice has 10 percent or fewer broken grains, while low-quality rice has 25 percent or more broken grains. Intermediate quality rice is somewhere between, 10 to 20 percent broken.

Processing refers principally to the level of milling. Rough or paddy rice is unmilled; brown rice has had the husk removed; while polished or milled rice has had the husk and bran removed. Parboiling may also be part of the milling process. When rough rice is brought to the mill, it is steamed before the hull or bran is removed. This forces the nutrients in the hull and bran to converge on the inner kernel of rice. In addition, it limits the amount of brokens from the milling process by, in a sense, gluing the kernel together.

It is expected that Japan's rice imports from the United States and Australia will be bulk, brown japonica rice. Should Japan's import needs exceed the available export supply of japonica rice from Australia and the U.S., Japan is likely to import high-quality indica rice.

sue, the LDP will not make any potential GATT trade opening an easy choice for the new administration. Recently, one of the coalition parties forming the current government, the Socialist Party, also announced their disapproval of rice imports further complicating the situation for Prime Minister Hosokawa.

Despite this political pressure, the Japanese Government already has begun to take steps to meet their special food needs. On October 4, the Japanese Food Agency announced emergency imports of 193,000 tons of rice to be shipped prior to 1994 in order to meet immediate needs. The imports are reported to consist of 160,000 tons of non-glutinous rice and 33,000 tons of glutinous rice. The government said these imports are due to strong seasonal demand increases for rice products such as rice cakes and rice crackers. However, the imports are termed "a special exception" and "on an emergency basis," and are declared not to reflect any change in Japan's GATT position with respect to rice trade. On October 5, Japan's Ministry of International Trade and Industry allocated import quotas for a total of 200,000 tons of rice for 1993.

Japan's import needs will be most severe during the first 9 months of 1994, when stocks start to decline following the post-harvest build-up. Japan is expected to import an additional 1.4 million tons of rice in calendar 1994. A shortage of exportable japonica in the world market will prevent Japan from rebuilding stocks and should limit imports to meeting consumption needs alone.

As part of a short-term solution, the MAFF has been considering further easing targets for the amount of land farmers take out of rice production in 1994. This year's targeted riceland diversion area is 676,000 hectares, down 23 percent from 830,000 hectares in fiscal 1992 (April-March). MAFF is considering reducing the targeted diversion area by 100,000 hectares in fiscal 1994. MAFF says this would add 500,000 tons of rice to their supply; however, this would only produce results for the 1994 rice crop (harvested next October) and would not influence or offset Japan's current rice import needs.

A further issue remaining for Japan is the potentially disastrous consequences of having lost part of its 1994 rice seed crop, particularly in northern Honshu and Hokkaido. The Japanese Government already has hinted at import needs extending over 2 years.

Status of Other Japonica or Medium Grain Rice Producing Countries

Japan's 1993/94 rice import needs are currently forecast at 1.6 million tons. Perhaps as much as 400,000 tons of non-japonica rice could be imported from Asian countries to help meet Japan's industrial needs; however, concerning table rice, Japanese consumers have distinct preferences: it must be high-quality japonica.

The last time Japan was forced to undertake significant rice imports was in 1984 when 150,000 tons were imported from a non-traditional exporter, South Korea. Both Japan

and South Korea maintain strict rice import bans. In the past, South Korea and Japan lent and borrowed rice from each other in order to avoid raising the "free trade" issue associated with their respective import bans. However, a projected short rice crop in South Korea this year is expected to prevent any japonica sales from either new crop harvest or out of stocks.

Most other japonica producers have limitations on their ability to export. Taiwan limits its highly subsidized rice exports to about 200,000 tons annually, destined principally for low-income countries due to international pressure. In addition, a trend of declining area and lower production is projected to produce tight domestic supplies in 1993/94. In China, the demand from the large, rapidly-growing urban market already exceeds production capabilities of high-quality japonica, while questionable quality standards would likely prevent exports to Japan.

Italy and Egypt are the principal Mediterranean producers of japonica; however, Egypt's exportable supplies are limited (under 200,000 tons) and are generally destined for nearby markets. Italy services the European Community's large market, while exporting highly subsidized medium grain rice to neighboring Mediterranean countries with little surplus. Although the rice from Egypt and Italy is medium grain, it is likely that the cooking characteristics are sufficiently different from the japonica grown in Japan to dissuade exports to Japan.

Northern Brazil is a food deficit region, growing low-quality upland, medium grain rice. Due to its geographic location, Uruguay focuses on South American export markets. Cooking characteristics and marketing considerations would likely prevent any near-term shift in Uruguay's rice export orientation. As a result, only two potential sources of similar high-quality japonica remain: Australia and the United States, in particular, California.

Given the high retail prices paid by Japanese consumers, Japan's rice traders can easily enter the world market to purchase whatever type and quantity of rice they desire. The principal limit to Japan's potential rice imports would be: first, the availability of japonica supplies in Australia and the U.S.; and second, the export availability of existing supplies. The rice industries in both California and Australia have spent considerable effort at developing markets for their rice. It is uncertain how quickly and to what extent they are willing to give up stable, long-term markets for what appears to be a high-priced, but temporary Japanese market.

As of the August 1 *Stocks Report*, California had estimated medium and short grain whole-kernel stocks of 325,300 tons. California's 1993 rice crop is estimated at about 1,160,000 tons (25.6 million cwt) of milled whole kernel medium and short grain, up 12 percent from last year. After considering normal domestic usage, minimum stock needs, and sufficiently high price signals, California's supply of exportable medium and short grain head rice is estimated to approach 500,000 tons.

Australia's crop year runs opposite to Japan and the United States. Almost all of Australia's rice area, situated principally in New South Wales, is irrigated. Australia's rice farmers plant in October and harvest in March-May. The October planting allows Australian farmers some flexibility in their planting decisions vis-à-vis the looming Japanese imports. However, the principal restrictions to increasing rice output in Australia is the extent of irrigated area and the available water supplies. Australia's rice areas receive little or no rain during the summer months, December to March. The current situation in Australia would limit area expansion and the resultant production gain to about 40,000 tons under the best of circumstances. This scenario is expected to produce a total 1993/94 rice crop of 690,000 tons. In addition, Australia's carry-in rice stocks are estimated at 262,000 tons.

After considering normal domestic usage and minimum stock needs, Australia's supply of exportable rice for 1994 is estimated at 670,000 tons. However, not all of this is available for sale to Japan. A portion of this supply consists of long grain and broken rice, while about 300,000 tons is destined for traditional export markets.

Higher Rice Prices

The maximum potential available export supply of japonica rice from Australia and the U.S. appears to be well under 1

million tons, while Japan's import needs, particularly for high-quality japonica rice for general consumption, are in the neighborhood of 1.2 million tons (not including 400,000 tons of imports for industrial use). Thus, the impact on world prices could be substantial since Japan's import needs for high-quality japonica rice appear to exceed the available export supplies of japonica rice from Australia and the U.S. This implies a significant price spill-over in the long grain and non-japonica medium grain rice markets.

In addition, the large volume of Japan's rice import needs is further magnified by the psychological impact of at least temporarily breaking the long-held taboo on rice imports.

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Appendix table 1--Estimated supply, disappearance, and price, by type of rice, U.S.
(rough equivalent of rough and milled rice) 1/

Item	Unit	1988/89	1989/90	1990/91	1991/92	1992/93 2/	1993/94 3/
Total rice:							
Area planted	Mil. acre	2.93	2.73	2.90	2.88	3.17	3.02
Area harvested	"	2.90	2.69	2.82	2.78	3.13	2.94
Yield	Pounds/acre	5,514	5,749	5,529	5,674	5,722	5,621
Beginning stocks 4/	Mil. cwt	31.40	26.70	26.40	24.60	27.40	39.40
Production	"	159.90	154.50	156.10	157.50	179.10	165.30
Imports	"	3.80	4.40	4.80	5.30	6.10	6.70
Total supply	"	195.10	185.60	187.20	187.30	212.60	211.40
Domestic & residual 5/	"	82.40	82.00	91.70	93.50	96.10	99.50
Exports	"	85.90	77.20	70.90	66.40	77.00	87.00
Total use	"	168.30	159.20	162.70	159.90	173.20	186.50
Ending stocks	"	26.70	26.40	24.60	27.40	39.40	24.90
CCC	"	0.00	0.00	0.10	0.40	0.10	0.10
Free	"	26.70	26.40	24.50	27.00	39.30	24.80
Average market price 6/	\$/cwt	6.83	7.35	6.70	7.58	5.90	7.50-9.00
Long:							
Area harvested	Mil. acres	2.23	2.00	2.07	2.02	2.37	2.20
Yield	Pounds/acre	5,345	5,464	5,221	5,395	5,397	5,310
Beginning stocks	Mil. cwt	19.10	15.40	13.30	11.50	13.00	21.60
Production	"	119.40	109.20	107.80	109.10	128.10	116.40
Total supply 7/	"	142.10	128.90	125.40	125.40	146.50	143.80
Domestic & residual 5/	"	55.60	54.90	57.80	61.40	60.90	65.50
Exports	"	71.20	60.80	56.00	51.00	64.00	63.50
Total use	"	126.80	115.70	113.80	112.40	124.90	129.00
Ending stocks	"	15.40	13.30	11.50	13.00	21.60	14.80
Average market price 6/	\$/cwt	6.96	7.59	6.94	7.83	NA	NA
Medium/short:							
Area harvested	Mil. acres	0.67	0.69	0.76	0.75	0.76	0.77
Yield	Pounds/acre	6,077	6,579	6,370	6,426	6,738	6,640
Beginning stocks	Mil. cwt	10.80	9.00	11.60	11.70	12.90	15.80
Production	"	40.50	45.30	48.30	48.30	51.00	48.80
Total supply 7/	"	51.40	54.30	60.40	60.50	64.10	66.20
Domestic & residual 5/	"	27.80	26.30	33.80	32.20	35.30	34.00
Exports	"	14.70	16.40	14.90	15.40	13.00	23.50
Total use	"	42.50	42.70	48.80	47.60	48.30	57.50
Ending stocks	"	9.00	11.60	11.70	12.90	15.80	8.70
Average market price 6/	\$/cwt	6.47	6.71	6.19	7.00	NA	NA

NA = Not available.

Note: Totals might not add because of rounding.

1/ Marketing year beginning August 1. 2/ Estimated. 3/ Projected as of October 1993. 4/ Includes the following quantities of broken kernel rice (type undetermined) not included in estimates of beginning stocks by type (in mil. cwt.): 1988/89, 1.5; 1989/90, 2.4; 1990/91, 1.4; 1991/92, 1.4; 1992/93, 1.5; 1993/94, 2.0.
5/ Residual: unreported use, processing losses, and estimating errors. Use by type does not add to total rice use because of the difference in broken between beginning and ending stocks. 6/ Marketing year weighted average price received by farmers. 7/ Includes imports.

Appendix table 2--Rough and milled rice (rough equivalent): Marketing year supply and disappearance, 1962/63-1993/94

Year beginning Aug. 1	Supply				Disappearance							--Ending stocks--July 31--		
	Begin- ning stocks	Produc- tion	Imports	Total	-----Domestic use-----				Exports	Resid- ual	Total disap- pearance	CCC inven- tory	Free	Total
					Food	Seed	Brewers	Total						
Million cwt														
1962/63	5.4	66.0	0.0	71.4	21.5	2.4	4.1	28.0	35.5	0.2	63.7	1.8	5.9	7.7
1963/64	7.7	70.3	0.0	78.0	22.5	2.4	3.8	28.7	41.8	0.0	70.5	1.4	6.1	7.5
1964/65	7.5	73.2	0.5	81.2	24.2	2.5	4.3	31.0	42.5	0.0	73.5	1.1	6.6	7.7
1965/66	7.7	76.3	0.6	84.6	23.5	2.7	4.7	30.9	43.3	2.2	76.4	0.6	7.6	8.2
1966/67	8.2	85.0	0.1	93.3	23.9	2.7	5.3	32.0	51.6	1.2	84.8	0.2	8.3	8.5
1967/68	8.5	89.4	0.0	97.9	25.0	3.2	5.4	33.6	56.9	0.6	91.1	0.1	6.7	6.8
1968/69	6.8	104.1	0.0	110.9	27.0	2.9	5.8	35.7	56.1	2.9	94.7	5.5	10.7	16.2
1969/70	16.2	90.8	1.3	108.3	23.5	2.5	7.1	33.1	56.9	1.9	91.9	6.4	10.0	16.4
1970/71	16.4	83.8	1.5	101.7	25.1	2.5	6.8	34.4	46.5	2.2	83.1	9.5	9.1	18.6
1971/72	18.6	85.8	1.1	105.5	25.5	2.5	7.4	35.4	56.9	1.8	94.1	2.7	8.7	11.4
1972/73	11.4	85.4	0.6	97.4	25.1	3.0	7.7	35.8	54.0	2.5	92.3	0.1	5.0	5.1
1973/74	5.1	92.8	0.2	98.1	26.1	3.6	8.1	37.8	49.7	2.7	90.2	0.0	7.8	7.8
1974/75	7.8	112.4	0.1	120.3	28.6	4.0	8.4	41.0	69.5	2.7	113.2	0.0	7.1	7.1
1975/76	7.1	128.4	0.0	135.5	27.7	3.5	9.1	40.3	56.5	1.8	98.6	18.7	18.2	36.9
1976/77	36.9	115.6	0.1	152.6	29.2	3.2	10.3	42.7	65.6	3.8	112.1	18.6	21.9	40.5
1977/78	40.5	99.2	0.1	139.8	23.5	4.3	9.9	37.7	72.8	1.9	112.4	10.8	16.6	27.4
1978/79	27.4	133.2	0.1	160.7	33.7	4.3	11.2	49.2	75.7	4.2	129.1	8.3	23.2	31.6
1979/80	31.6	131.9	0.1	163.6	33.2	4.8	11.2	49.2	82.6	6.1	137.9	1.7	24.0	25.7
1980/81	25.7	146.2	0.2	172.1	38.4	5.1	11.0	54.5	91.4	9.7	155.6	0.0	16.5	16.5
1981/82	16.5	182.7	0.4	199.6	42.5	4.4	12.7	59.6	82.0	9.0	150.6	17.5	31.5	49.0
1982/83	49.0	153.6	0.7	203.3	37.6	2.9	13.5	54.0	68.9	8.9	131.8	22.3	49.2	71.5
1983/84	71.5	99.7	0.9	172.1	32.7	3.8	12.8	49.3	70.3	5.6	125.2	25.0	21.9	46.9
1984/85	46.9	138.8	1.6	187.3	35.2	3.4	13.9	52.5	62.1	8.0	122.6	44.3	20.4	54.7
1985/86	64.7	134.9	2.2	201.8	45.2	3.0	14.1	62.3	58.7	3.5	124.5	43.6	33.7	77.3
1986/87	77.3	133.4	2.6	213.3	52.8	2.9	15.0	70.7	84.2	7.0	161.9	8.7	42.7	51.4
1987/88	51.4	129.6	3.0	184.0	54.9	3.6	15.4	73.9	72.2	6.5	152.6	0.2	31.2	31.4
1988/89	31.4	159.9	3.8	195.1	57.4	3.4	15.6	76.4	85.9	6.0	168.3	0.0	26.7	26.7
1989/90	26.7	154.5	4.4	185.6	60.0	3.6	15.4	79.0	77.2	3.0	159.2	0.0	26.4	26.4
1990/91	26.4	156.1	4.8	187.2	63.8	3.6	15.3	82.7	70.9	9.0	162.7	0.1	24.5	24.6
1991/92	24.6	157.5	5.3	187.3	65.4	3.9	15.2	84.5	66.4	9.0	159.9	0.4	27.0	27.4
1992/93 1/	27.4	179.1	6.1	212.6	68.6	3.8	14.7	87.1	77.0	9.0	173.2	0.1	39.3	39.4
1993/94 2/	39.4	165.3	6.7	211.4	72.2	3.8	14.5	90.5	87.0	9.0	186.5	0.1	24.8	24.9

1/ Estimated. 2/ Projected as of October 1993.

Appendix table 3--Long grain rough and milled rice (rough equivalent): Marketing year supply and disappearance, 1982/83-1993/94

Year beginning August 1	Supply			Disappearance			Ending stocks
	Beginning stocks	Production	Total 1/	Domestic and residual 2/	Exports	Total	Total
Million cwt							
1982/83	17.6	93.4	111.0	38.7	47.0	85.7	25.8
1983/84	25.8	64.3	90.7	29.5	44.8	74.3	16.4
1984/85	16.4	96.0	113.3	34.1	42.0	76.1	37.7
1985/86	37.7	100.4	140.1	48.8	42.0	90.8	49.3
1986/87	49.3	96.8	148.6	51.3	69.9	121.2	27.4
1987/88	27.4	89.0	119.4	49.8	50.5	100.3	19.1
1988/89	19.1	119.4	142.1	55.6	71.2	126.8	15.4
1989/90	15.4	109.2	128.9	54.9	60.8	115.7	13.3
1990/91	13.3	107.8	125.4	57.8	56.0	113.8	11.5
1991/92	11.5	109.1	125.4	61.4	51.0	112.4	13.0
1992/93 3/	13.0	128.1	146.5	60.9	64.0	124.9	21.6
1993/94 4/	21.6	116.4	143.8	65.5	63.5	129.0	14.8

1/ Includes imports. 2/ Use by type does not add to total rice use because of the difference in brokens between beginning and ending stocks. 3/ Estimated. 4/ Projected as of October 1993.

Appendix table 4--Medium/short grain rough and milled rice (rough equivalent): Marketing year supply and disappearance, 1982/83-1993/94

Year beginning August 1	Supply			Disappearance			Ending stocks
	Beginning stocks	Production	Total 1/	Domestic and residual	Exports	Total	Total
Million cwt							
1982/83	30.2	60.2	90.6	24.4	21.9	46.1	44.7
1983/84	44.7	35.4	80.2	26.0	25.4	51.4	28.8
1984/85	28.8	42.8	71.8	26.0	20.1	46.1	25.7
1985/86	25.7	34.5	60.4	17.5	16.7	34.2	26.2
1986/87	26.2	36.6	62.9	27.5	14.3	41.8	21.1
1987/88	21.1	40.6	61.7	29.2	21.7	50.9	10.8
1988/89	10.8	40.5	51.4	27.8	14.7	42.5	9.0
1989/90	9.0	45.3	54.3	26.3	16.4	42.7	11.6
1990/91	11.6	48.3	60.4	33.8	14.9	48.8	11.7
1991/92	11.7	48.3	60.5	32.2	15.4	47.6	12.9
1992/93 3/	12.9	51.0	64.1	35.3	13.0	48.3	15.8
1993/94 4/	15.8	48.8	66.2	34.0	23.5	57.5	8.7

1/ Includes imports. 2/ Use by type does not add to total rice use because of the difference in brokens between beginning and ending stocks. 3/ Estimated. 4/ Projected as of October 1993.

Appendix table 5--Rough rice milled, total milled produced, and milling yields, United States

Year beginning August 1	Rough milled	Total milled produced 1/	Milling yields	Total heads produced 1/	Milling yields
	-----1,000 cwt-----		Lbs./cwt	1,000 cwt	Lbs./cwt
1978/79	117,961	83,427	70.7	68,749	58.3
1979/80	123,993	89,071	71.8	78,327	63.2
1980/81	141,016	102,278	72.5	89,513	63.5
1981/82	131,841	95,129	72.2	82,022	62.2
1982/83	118,726	84,517	71.2	73,713	62.1
1983/84	111,151	79,012	71.1	68,237	61.4
1984/85	107,195	74,580	69.6	64,063	59.8
1985/86	115,542	81,808	70.8	69,347	60.0
1986/87	140,804	100,257	71.2	83,760	59.5
1987/88	130,818	91,481	69.9	76,863	58.8
1988/89	145,639	104,119	71.5	86,820	59.6
1989/90	136,994	99,453	72.6	85,188	62.2
1990/91	132,523	95,431	72.0	79,993	60.4
1991/92	129,796	91,521	70.5	76,685	59.1

1/ Includes brown rice.

Sources: Rice Miller's Association Monthly Statistical Statements.
Rice Market News, Agricultural Marketing Service, USDA.

Appendix table 6--Rice program provisions and income factors, 1986-93

Item	Unit	Crop year							
		1986	1987	1988	1989	1990	1991	1992	1993
Target price	\$/cwt	11.90	11.66	11.15	10.80	10.71	10.71	10.71	10.71
Statutory loan rate	"	7.20	6.84	6.63	6.50	6.50	6.50	6.50	6.50
Season-average price	"	3.75	7.27	6.83	7.35	6.70	7.58	NA	NA
5-month price	"	3.87	5.71	6.84	7.24	6.25	7.64	6.44	NA
Deficiency payment	"	4.70	4.82	4.31	3.56	4.16	3.07	4.21	NA
Acresage reduction/paid diversion	Pct.	35	35	25	25	20	5	0	5
Participation rate	"	94	96	94	94	94	95	96	95

NA = Not available.

Appendix table 7--Class loan rates and differentials, 1985-93

Item	Crop year								
	1985	1986	1987	1988	1989	1990	1991	1992	1993
	\$/cwt								
Milled rice:									
Long whole kernels	14.53	12.44	11.36	10.89	10.81	10.84	10.74	10.74	10.75
Medium and short whole kernels	10.50	10.44	10.36	9.89	9.81	9.84	9.74	9.74	9.75
Broken kernels	6.02	4.98	5.68	5.45	5.41	5.42	5.37	5.37	5.37
Differential (milled basis) 1/	4.03	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Rough rice 2/:									
Average, all classes	8.00	7.20	6.84	6.63	6.50	6.50	6.50	6.50	6.50
Average, long grain	8.68	7.52	7.03	6.75	6.68	6.68	6.65	6.66	6.66
Average, medium grain	6.49	6.36	6.54	6.33	6.13	6.21	6.11	6.13	6.13
Average, short grain	6.49	6.44	6.39	5.98	5.98	6.12	6.07	6.13	6.13

1/ The loan differential (milled basis) is the difference between the class whole kernel loan rates. 2/ The rough rice loan rate for each class of rice is the sum of the whole kernels' loan rate weighted by its milling yield (average 56 percent) and the broken kernels' loan rate weighted by its milling yield (average 12 percent).

Appendix table 8--State and U.S. rice acreage, yield, and production, by class

State	Area harvested			Yield			Production		
	1991	1992	1993 Indicated	1991	1992	1993 Indicated	1991	1992	1993 Indicated
	-----1,000 acres-----			-----Pounds/acre-----			-----1,000 cwt-----		
Long grain:									
Arkansas	1,111	1,230	1,190	5,250	5,440		58,328	66,912	
California	16	16	16	7,300	7,900		1,168	1,264	
Louisiana	250	405	355	5,000	4,760		12,500	19,278	
Mississippi	220	275	245	5,600	5,700		12,320	15,675	
Missouri	91	111	99	5,100	4,800		4,641	5,328	
Texas	335	336	291	6,024	5,840		20,180	19,622	
United States	2,023	2,373	2,196	5,395	5,397	NA	109,137	128,079	116,423
Medium grain:									
Arkansas	148	149	139	5,670	6,000		8,392	8,940	
California	325	368	411	8,150	8,450		26,489	31,096	
Louisiana	260	215	205	4,706	4,450		12,235	9,568	
Mississippi	2/	2/	2/	2/	2/		2/	2/	
Missouri	1	1	1	5,100	4,800		51	48	
Texas	8	15	7	5,000	4,900		400	735	
United States	742	748	763	6,411	6,736	NA	47,567	50,387	48,042
Short grain:									
Arkansas	1	1	1	6,000	6,200		60	62	
California	9	8	10	7,700	7,000		693	560	
United States	10	9	11	7,530	6,911	NA	753	622	802
Total:									
Arkansas	1,260	1,380	1,330	5,300	5,500	5,200	66,780	75,914	69,160
California	350	392	437	8,100	8,400	8,200	28,350	32,920	35,834
Louisiana	510	620	530	4,850	4,650	4,700	24,735	28,846	24,910
Mississippi	220	275	245	5,600	5,700	5,500	12,320	15,675	13,475
Missouri	92	112	100	5,100	4,800	5,200	4,692	5,376	5,200
Texas	343	351	298	6,000	5,800	5,600	20,580	20,357	16,688
United States	2,775	3,130	2,940	5,674	5,722	5,621	157,457	179,088	165,267

NA = Not available.

1/ Forecast. 2/ No medium grain estimated.

Source: Annual Crop Production 1992 Summary, January 1993, and October 1993 issues; Acreage, June 30, 1993. National Agricultural Statistics Service, USDA.

Appendix table 9--State and U.S. rice area planted, by class

State	Area planted							1993/92
	1987	1988	1989	1990	1991	1992	1993 1/	
-----1,000 acres-----								Percent
Long grain:								
Arkansas	885	1,084	1,039	1,110	1,149	1,249	1,209	97
California	36	60	30	18	16	16	16	100
Louisiana	265	395	310	310	290	410	360	88
Mississippi	200	255	240	255	225	280	250	89
Missouri	64	81	80	91	96	116	104	90
Texas	264	382	332	345	337	338	293	87
United States	1,714	2,257	2,031	2,129	2,113	2,409	2,232	93
Medium grain:								
Arkansas	133	135	110	129	150	150	140	93
California	299	320	335	370	326	370	414	112
Louisiana	160	150	195	245	270	220	210	95
Mississippi	2/	10	2/	2/	2/	2/	2/	2/
Missouri	3	2	1	1	1	1	1	100
Texas	6	8	8	10	8	15	7	47
United States	601	625	649	755	755	756	772	102
Short grain:								
Arkansas	2	1	1	1	1	1	1	100
California	39	50	50	12	9	8	10	125
United States	41	51	51	13	10	9	11	122
Total:								
Arkansas	1,020	1,220	1,150	1,240	1,300	1,400	1,350	96
California	374	430	415	400	351	394	440	112
Louisiana	425	545	505	555	560	630	570	90
Mississippi	200	265	240	255	225	280	250	89
Missouri	67	83	81	92	97	117	105	90
Texas	270	390	340	355	345	353	300	85
United States	2,356	2,933	2,731	2,897	2,878	3,174	3,015	95

1/ Intended plantings in 1993 as indicated by reports from farmers. 2/ No medium grain estimated.

Source: Crop Production and Prospective Plantings, March 1993.
National Agricultural Statistics Service, USDA.
Acreage, June 1993, National Agricultural Statistics Service, USDA.

Appendix table 10--Rice stocks: Rough and milled 1/

Date	Rough					Milled			
	On farms or in farm warehouses	At mills and in attached warehouses	In ware- houses (not attached to mills)	In ports or in transit	Total all positions	At mills and in attached warehouses	In ware- houses (not attached to mills)	In ports or in transit	Total all positions
	1,000 cwt								
January 1:									
1980	31,021	15,038	57,278	581	103,918	3,137	810	2,123	6,070
1981	26,179	21,111	48,817	6	96,113	3,055	929	2,556	6,540
1982	48,404	22,952	59,117	911	131,384	2,735	907	1,414	5,056
1983	34,551	24,151	76,070	200	134,972	2,960	858	2,401	6,219
1984	30,681	19,541	64,143	344	114,709	3,867	456	1,395	5,718
1985	32,426	19,535	74,514	797	127,272	3,343	524	2,058	5,925
1986	36,737	23,768	81,967	514	142,986	3,674	461	465	4,600
December 1:									
1986	36,264	18,739	90,153	384	145,540	4,578	461	650	5,689
1987	29,789	13,648	71,902	81	115,420	4,841	617	1,232	6,690
1988	39,581	12,741	79,245	121	131,688	4,813	550	915	6,278
1989	40,040	10,084	66,166	83	116,373	4,254	782	720	5,756
1990	37,662	9,548	65,905	52	113,167	4,046	605	1,180	5,831
1991	37,249	9,630	66,857	54	113,790	3,564	495	351	4,410
1992	39,966	14,434	76,887	196	131,483	3,580	855	1,882	6,317
April 1:									
1980	12,030	15,581	39,224	563	67,398	3,500	402	2,888	6,790
1981	5,977	15,078	28,673	64	49,792	3,499	1,099	3,214	7,812
1982	26,807	21,289	41,773	411	90,280	4,371	725	1,689	6,785
1983	23,778	22,307	62,649	299	109,033	3,295	492	3,165	6,952
1984	15,802	17,432	46,515	17	79,766	3,838	464	2,999	7,301
1985	18,709	16,438	60,188	707	96,042	3,538	481	2,101	6,120
1986	22,232	19,371	73,700	914	116,217	2,818	425	208	3,451
March 1:									
1987	19,561	15,962	70,780	483	106,786	3,881	561	117	4,559
1988	10,104	28,905	39,464	125	75,598	5,680	1,233	1,059	7,972
1989	27,266	12,704	49,439	641	90,050	5,589	189	1,502	7,280
1990	15,965	10,390	51,381	218	77,954	5,259	327	410	5,996
1991	19,345	9,404	43,554	124	72,427	4,002	408	858	5,268
1992	20,658	8,283	46,631	211	75,783	3,888	837	952	5,677
1993 2/	22,397	11,900	57,197	187	91,681	3,474	643	1,075	5,192
August 1:									
1980	563	9,248	9,940	342	20,093	2,128	403	1,504	4,035
1981	208	5,417	4,206	9	9,840	2,744	446	1,665	4,855
1982	4,453	12,544	23,906	484	41,387	3,191	409	1,877	5,477
1983	6,032	11,190	45,899	36	63,157	2,843	223	2,830	5,896
1984	1,250	11,017	27,425	14	39,706	3,976	50	1,095	5,121
1985	697	13,398	44,402	653	59,150	3,023	304	515	3,842
1986	2,031	15,432	52,476	1,008	70,947	3,033	398	1,099	4,530
1987	984	9,986	30,718	115	41,803	5,044	632	1,168	6,844
1988	1,242	7,714	14,789	3	23,748	4,461	189	679	5,329
1989	1,176	7,296	10,084	31	18,587	4,178	752	902	5,832
1990	599	5,370	13,133	51	19,153	3,650	548	998	5,196
1991	852	5,149	12,636	58	18,695	3,569	217	457	4,243
1992	1,109	6,166	13,179	77	20,531	3,833	486	529	4,848
1993 2/	1,708	7,055	21,786	35	30,584	4,179	658	1,365	6,202

1/ These estimates do not include stocks located in States outside the major producing States of Missouri, Mississippi, Arkansas, Louisiana, Texas, and California. 2/ Preliminary.

Appendix table 11--World market rice prices, loan rate basis 1/

Date	Milled kernel rates				Rough rates		
	Long	Medium	Short	Broken	Long	Medium	Short
	-----Cents/lb.-----				-----\$/cwt-----		
1986:							
April 11	6.78	7.36	7.36	3.40	4.19	4.47	4.53
April 18	6.78	5.86	5.86	3.39	4.18	3.65	3.70
April 29 - May 6	6.68	5.73	5.74	3.34	4.13	3.58	3.62
May 13	5.90	4.99	5.00	2.95	3.65	3.12	3.06
May 20	5.83	4.89	4.89	2.91	3.60	3.06	3.10
May 27 - June 24	5.78	4.79	4.79	2.89	3.57	3.00	3.04
July 1 - July 22	5.89	4.79	4.79	2.94	3.63	3.01	3.05
July 29 - August 5	6.07	4.96	4.96	3.04	3.75	3.11	3.15
August 12 - September 2	6.15	5.04	5.04	3.08	3.80	3.16	3.21
September 9 - September 30	5.90	4.81	4.81	2.95	3.64	3.02	3.06
October 7 - October 14	5.84	4.91	4.92	2.92	3.60	3.07	3.11
October 21 - November 18	5.85	5.06	5.07	2.93	3.62	3.15	3.20
November 25 - December 9	5.69	5.06	5.07	2.85	3.52	3.15	3.19
December 16 - December 30	5.57	4.95	4.95	2.78	3.44	3.07	3.12
1987:							
January 20 - March 31	5.70	5.12	5.06	2.85	3.53	3.23	3.13
April 7 - April 21	5.87	5.28	5.22	2.94	3.63	3.34	3.23
April 28	5.98	5.28	5.21	2.99	3.70	3.34	3.23
May 5 - May 19	5.98	5.38	5.31	2.99	3.70	3.40	3.29
May 26 - June 23	6.11	5.52	5.45	3.06	3.78	3.49	3.37
June 30	6.00	5.39	5.32	3.00	3.71	3.41	3.30
July 7 - July 21	5.89	5.29	5.22	2.95	3.65	3.35	3.23
July 28	6.02	5.45	5.38	3.01	3.73	3.44	3.33
August 4	6.15	5.58	5.51	3.07	3.81	3.52	3.41
August 11	6.27	5.69	5.62	3.13	3.88	3.59	3.48
August 18	6.39	5.69	5.62	3.19	3.95	3.60	3.48
August 25	6.51	5.84	5.76	3.25	4.03	3.69	3.57
September 1	6.76	6.11	6.03	3.38	4.18	3.86	3.73
September 8	7.28	6.56	6.49	3.64	4.51	4.15	4.02
September 15	7.90	7.22	7.14	3.95	4.89	4.56	4.41
September 22	8.66	7.95	7.87	4.33	5.36	5.01	4.86
September 29 - October 6	9.54	8.80	8.73	4.77	5.91	5.55	5.39
October 13 - October 27	10.21	9.42	9.35	5.10	6.32	5.94	5.77
November 3 - November 10	9.88	9.05	8.99	4.94	6.12	5.71	5.55
November 17 - November 24	9.81	9.04	8.93	4.91	5.90	5.63	5.43
December 1 - December 8	9.42	8.57	8.47	4.71	5.66	5.35	5.16
December 15 - December 29	9.42	8.43	8.32	4.71	5.66	5.27	5.08
1988:							
January 5	9.42	8.43	8.32	4.71	5.66	5.27	5.08
January 12	9.90	8.84	8.73	4.95	5.95	5.52	5.34
January 19 - January 26	11.22	9.72	9.61	5.61	6.74	6.10	5.90
February 2 - March 22	11.66	10.24	10.14	5.83	7.01	6.41	6.21
March 29	11.61	10.25	10.15	5.80	6.98	6.41	6.22
April 5 - April 19	11.83	10.46	10.36	5.92	7.12	6.54	6.35
April 26	11.56	10.31	10.21	5.78	6.95	6.44	6.25
May 3 - May 10	11.02	9.97	9.88	5.51	6.63	6.22	6.03
May 17 - May 31	10.58	9.72	9.62	5.29	6.37	6.05	5.86
June 7	10.09	9.28	9.18	5.04	6.07	5.78	5.59
June 14	10.28	9.44	9.34	5.14	6.19	5.88	5.69
June 21-28	10.69	9.87	9.77	5.35	6.43	6.14	5.95
July 5-12	10.98	10.17	10.08	5.49	6.61	6.32	6.13
July 19 - August 2	11.13	10.33	10.25	5.56	6.69	6.42	6.23
August 9	10.85	9.99	9.91	5.42	6.52	6.22	6.03
August 16	10.55	9.72	9.64	5.27	6.34	6.05	5.87
August 23 - September 6	10.68	9.82	9.74	5.34	6.42	6.11	5.93
September 13	10.43	9.57	9.48	5.22	6.28	5.96	5.78
September 20 - October 4	10.30	9.43	9.34	5.15	6.19	5.87	5.69
October 11 - October 25	10.13	9.30	9.21	5.07	6.10	5.79	5.61
November 1	10.03	9.23	9.16	5.01	6.18	5.78	5.53
November 8 - December 13	9.87	9.08	9.01	4.94	6.10	5.69	5.44
December 20 - December 27	9.55	8.80	8.74	4.77	5.90	5.51	5.27
1989:							
January 3 - January 10	9.55	8.80	8.74	4.77	5.90	5.51	5.27
January 17 - January 24	9.79	9.12	9.07	4.89	6.05	5.71	5.46
January 31 - February 24	9.97	9.29	9.23	4.98	6.16	5.82	5.55
February 28 - March 7	10.11	9.46	9.38	5.06	6.25	5.92	5.64
March 14 - April 4	10.33	9.69	9.62	5.17	6.39	6.06	5.78
April 11	10.56	9.85	9.78	5.28	6.53	6.17	5.88
April 18	10.64	9.93	9.86	5.32	6.58	6.22	5.93
April 25 - May 2	11.17	10.36	10.28	5.59	6.91	6.49	6.19
May 9 - May 16	11.41	10.69	10.60	5.71	7.05	6.69	6.37
May 23	11.60	10.83	10.74	5.80	7.17	6.78	6.46
May 30	11.91	11.09	11.00	5.96	7.36	6.94	6.62

See footnote at end of table.

Continued--

Appendix table 11--World market rice prices, loan rate basis 1/--Continued

Date	Milled kernel rates				Rough rates		
	Long	Medium	Short	Broken	Long	Medium	Short
	Cents/lb.				\$/cwt		
1989:							
June 6 - June 20	12.20	11.33	11.24	6.10	7.54	7.10	6.76
June 27	13.20	12.07	11.98	6.60	8.16	7.57	7.22
July 5	13.78	12.79	12.69	6.89	8.51	8.01	7.64
July 11 - August 1	14.41	13.39	13.30	7.21	8.91	8.39	8.00
August 8	14.15	12.91	12.82	7.07	8.74	8.10	7.73
August 15	13.00	11.82	11.74	6.50	8.04	7.42	7.08
August 22 - September 5	12.46	11.23	11.11	6.23	7.70	7.02	6.76
September 12	12.23	11.08	10.96	6.12	7.56	6.92	6.68
September 19 - October 10	11.74	10.57	10.45	5.87	7.26	6.61	6.38
October 17 - October 24	11.43	10.29	10.17	5.72	7.07	6.43	6.21
October 31	10.55	9.67	9.55	5.27	6.52	6.03	5.81
November 7 - November 14	10.16	9.37	9.25	5.08	6.28	5.84	5.63
November 21 - December 26	9.76	9.06	8.94	4.88	6.03	5.64	5.43
1990:							
January 2 - February 13	9.76	9.06	8.94	4.88	6.03	5.64	5.43
February 20	9.54	8.70	8.59	4.77	5.90	5.43	5.23
February 27-March 27	9.41	8.46	8.35	4.70	5.81	5.29	5.10
April 3 - April 17	9.31	8.25	8.14	4.66	5.75	5.17	4.98
April 24	9.11	8.10	7.99	4.56	5.63	5.07	4.89
May 1	8.87	7.95	7.84	4.43	5.48	4.97	4.79
May 8 - May 22	8.63	7.77	7.66	4.32	5.34	4.86	4.68
May 29	8.53	7.66	7.60	4.26	5.36	4.93	4.91
June 5 - June 19	8.45	7.58	7.52	4.22	5.31	4.88	4.86
June 26 - August 7	8.36	7.48	7.41	4.18	5.25	4.82	4.79
August 14 - August 21	8.31	7.38	7.31	4.16	5.22	4.75	4.73
August 28 - September 25	8.18	7.22	7.16	4.09	5.14	4.65	4.63
October 2 - December 18	8.28	7.32	7.27	4.14	5.20	4.72	4.70
1991:							
December 26 - January 22	8.30	7.23	7.24	4.15	5.09	4.47	4.40
January 29 - February 5	9.38	8.30	8.33	4.69	5.75	5.12	5.05
February 12 - March 5	9.39	8.36	8.37	4.70	5.76	5.15	5.07
March 12 - March 19	9.56	8.56	8.57	4.78	5.86	5.27	5.19
March 26 - April 9	9.66	8.69	8.70	4.83	5.92	5.35	5.26
April 16 - May 14	9.45	8.49	8.50	4.73	5.80	5.23	5.15
May 21 - July 30	9.63	8.64	8.65	4.81	5.90	5.32	5.24
August 6 - August 13	9.69	8.78	8.73	4.85	6.00	5.31	5.44
August 20 - November 19	9.74	8.80	8.75	4.87	6.03	5.32	5.45
November 26 - January 14	9.71	8.76	8.72	4.85	6.01	5.50	5.44
1992:							
January 21 - January 28	9.81	8.82	8.76	4.91	6.05	5.57	5.21
February 4 - March 24	9.98	9.03	8.95	4.99	6.15	5.70	5.32
March 31 - May 5	9.62	8.70	8.57	4.81	5.93	5.49	5.10
May 12 - July 14	9.43	8.46	8.32	4.71	5.81	5.34	4.96
July 21 - July 28	9.53	8.64	8.50	4.76	5.87	5.45	5.06
August 4 - August 11	9.65	8.76	8.74	4.82	5.98	5.51	5.50
August 18	9.50	8.64	8.63	4.75	5.89	5.44	5.42
August 25 - September 8	9.34	8.46	8.45	4.67	5.79	5.33	5.31
September 15 - September 22	9.15	8.25	8.24	4.57	5.67	5.20	5.18
September 29 - October 6	9.04	8.16	8.14	4.52	5.60	5.14	5.12
October 13 - November 17	8.88	7.96	7.93	4.44	5.50	5.02	4.99
November 24 - December 1	8.73	7.80	7.78	4.36	5.41	4.92	4.90
December 8 - January 5	8.63	7.81	7.78	4.32	5.35	4.92	4.89
1993:							
January 12	8.49	7.65	7.63	4.24	5.26	4.82	4.80
January 19 - February 9	8.38	7.54	7.51	4.19	5.27	4.76	4.73
February 16 - February 23	8.25	7.41	7.38	4.12	5.19	4.68	4.65
March 2 - March 9	8.07	7.18	7.15	4.04	5.08	4.54	4.51
March 16	7.98	7.07	7.04	3.99	5.02	4.47	4.44
March 23 - March 30	7.72	6.90	6.89	3.86	4.86	4.36	4.34
April 6 - April 13	7.50	6.76	6.75	3.75	4.72	4.27	4.25
April 20	7.36	6.63	6.61	3.68	4.63	4.19	4.16
April 27	7.07	6.42	6.39	3.54	4.45	4.05	4.02
May 4 - May 25	6.96	6.29	6.28	3.48	4.38	3.97	3.95
June 1 - July 27	6.75	6.06	6.03	3.38	4.25	3.83	3.80
August 3 - August 24	6.58	5.98	5.90	3.29	4.08	3.74	3.55
August 31 - September 21	6.80	6.17	6.09	3.40	4.22	3.86	3.67
September 28	6.69	6.06	5.98	3.35	4.15	3.79	3.60
October 5	7.43	6.76	6.68	3.72	4.61	4.23	4.02

1/ Repayment rates for 1985-crop loans are the world price for the specified class of rice. Repayment rates specified class of rice. Repayment rates for 1986 crop loans and 1987 crop loans are the higher of the world price or 50 percent of the loan rate for the specified class of rice. Repayment rates for 1988 crop loans are the higher of the world price or 60 percent of the loan rate for the specified class of rice. Repayment rates for 1989-1993 crop loans are the higher of the world price or 70 percent of the loan rate for the specified class of rice.

Appendix table 12--Rough rice: Average price received by farmers by month and marketing year 1/

Item	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93

\$/cwt											
Month:											
August	7.31	8.41	8.22	7.86	4.02	3.82	7.49	7.41	6.66	7.16	6.60
September	7.75	8.48	8.17	7.55	3.86	4.34	6.97	7.59	6.21	7.67	6.41
October	7.73	8.80	8.08	7.73	3.83	6.25	6.85	7.41	5.95	7.65	6.40
November	7.78	8.80	8.13	7.84	3.90	7.53	6.81	7.03	6.21	7.84	6.42
December	8.06	8.66	8.08	7.71	3.74	7.64	6.68	7.05	6.12	7.98	6.39
January	8.05	8.57	8.09	7.90	3.55	7.93	6.58	7.44	6.38	7.84	6.36
February	8.26	8.85	7.72	7.86	3.84	9.37	6.67	7.57	6.69	7.97	6.06
March	7.99	8.63	8.17	7.60	3.62	9.22	6.60	7.55	7.07	7.78	5.64
April	8.23	8.49	8.20	5.32	3.63	8.92	6.74	7.41	7.43	7.46	5.52
May	8.23	8.24	7.91	4.52	3.71	7.97	6.78	7.28	7.45	7.18	5.24
June	7.88	8.20	7.83	4.04	3.62	7.69	7.05	7.18	7.43	6.97	5.02
July	7.95	8.18	7.54	3.86	3.49	7.94	7.45	7.05	7.18	6.99	4.92
Season average price:											
12 months 1/	7.91	8.57	8.04	6.53	3.75	7.27	6.83	7.35	6.70	7.58	4/ 5.90
5 months 2/	7.69	8.63	8.14	7.73	3.87	5.71	6.84	7.24	6.25	7.64	6.44
State: 3/											
Arkansas	8.61	9.18	8.51	6.70	3.68	7.60	6.90	7.46	6.75	7.69	6.30
California	6.65	6.96	6.43	5.33	3.18	6.72	6.15	6.27	5.93	6.65	5.55
Louisiana	8.05	8.90	8.20	7.24	4.03	7.65	6.90	7.81	6.73	7.67	5.95
Mississippi	8.66	9.53	8.88	7.10	3.91	7.90	7.02	7.57	6.99	8.48	6.45
Missouri	8.65	9.49	8.70	7.05	3.57	7.41	7.22	7.54	7.21	7.81	6.30
Texas	8.94	9.97	8.90	7.38	4.22	8.07	7.24	8.02	7.41	8.15	6.45
Type:											
Long grain	8.56	9.36	8.66	6.75	3.82	7.77	6.96	7.59	6.94	7.83	NA
Medium and short grain	6.91	7.13	6.66	5.87	3.55	6.36	6.47	6.71	6.19	7.00	NA

NA = Not available.

1/ Marketing year--August-July. 2/ First 5 months of marketing year--August-December. 3/ Marketing year for; Arkansas and Mississippi--August-July, California--October-September, Louisiana and Texas--July-June. 4/ Preliminary.

Source: Crop Values and Agricultural Prices, National Agricultural Statistics Service, USDA.

Appendix table 13--Milled rice: Average price, f.o.b. mills, at selected milling centers

Year and type	Aug.	Sept. 1/	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Simple average
\$/cwt, bagged													
Southwest Louisiana													
Long 2/:													
1984/85	18.25	18.25	17.60	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	17.70	18.00
1985/86	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	15.50	12.70	12.75	12.42	16.10
1986/87	10.60	10.25	10.25	9.90	10.10	10.10	9.95	9.90	10.40	10.40	10.50	10.50	10.25
1987/88	10.70	12.05	17.70	19.75	19.70	20.60	24.45	24.50	24.00	20.75	18.85	17.90	19.25
1988/89	16.80	16.10	14.50	14.50	14.10	14.00	14.20	13.80	13.50	15.40	15.50	15.60	14.85
1989/90	16.40	15.90	15.60	15.00	14.65	15.40	15.65	15.40	15.65	15.80	15.65	15.30	15.55
1990/91	14.65	13.95	13.75	14.00	14.00	14.15	15.45	15.75	16.40	16.50	17.25	16.95	15.25
1991/92	16.40	16.55	16.60	17.15	17.35	17.30	17.30	16.60	16.45	15.70	15.10	15.20	16.50
1992/93	15.00	14.75	14.70	14.45	14.25	13.40	13.00	12.60	12.15	11.90	11.75	11.75	13.30
1993/94	12.05	12.60											
Houston, Texas													
Long 2/:													
1984/85	19.40	18.70	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	17.40	18.70
1985/86	18.70	18.30	18.30	18.30	18.30	17.90	17.50	17.30	17.25	13.75	13.50	13.00	16.85
1986/87	13.00	13.00	13.00	13.00	13.00	11.15	10.50	10.50	10.50	10.50	10.50	10.50	11.60
1987/88	10.50	11.25	19.00	21.00	21.00	21.00	23.65	24.05	24.00	21.70	20.50	20.50	19.85
1988/89	18.20	16.00	15.25	15.00	15.00	15.00	15.00	15.00	15.00	15.15	15.50	16.50	15.55
1989/90	16.50	16.50	16.50	16.00	15.70	15.50	16.25	16.25	16.25	16.25	16.25	16.25	16.20
1990/91	15.80	14.50	14.50	14.50	14.50	14.50	16.00	16.00	16.00	16.35	17.00	17.00	15.55
1991/92	17.00	17.00	16.65	17.00	17.50	17.50	17.50	17.50	17.50	17.25	16.70	16.50	17.15
1992/93	16.50	16.50	16.50	16.10	15.80	15.25	15.15	15.00	15.00	14.30	13.60	12.00	15.15
1993/94	13.50	13.50											
Arkansas													
Long 2/:													
1984/85	18.40	18.25	18.25	18.25	18.00	18.00	18.00	17.94	17.75	17.80	17.95	17.75	18.00
1985/86	17.75	17.50	17.40	17.25	17.25	17.25	17.25	17.25	15.50	13.25	13.00	13.00	16.15
1986/87	11.90	11.55	11.75	11.90	11.90	11.90	11.90	11.90	11.65	11.50	11.75	11.75	11.80
1987/88	11.90	13.25	18.50	20.50	20.20	21.20	24.05	24.05	24.00	22.50	21.15	19.00	20.00
1988/89	18.30	16.90	15.10	14.75	15.10	14.80	14.75	14.75	14.75	15.60	15.85	16.95	15.65
1989/90	17.20	16.65	15.95	15.70	15.75	15.90	16.00	16.00	16.00	16.00	16.00	16.00	16.10
1990/91	15.50	15.00	14.50	14.50	14.75	14.75	15.75	15.75	15.95	16.75	17.25	17.25	15.65
1991/92	16.85	16.55	16.50	17.40	17.30	17.25	17.25	17.00	16.90	16.20	15.70	15.50	16.70
1992/93	15.65	15.45	15.40	15.40	15.05	13.80	13.65	13.50	13.50	12.95	12.75	12.75	14.15
1993/94	13.00	13.25											
Southwest Louisiana													
Medium 2/:													
1984/85	16.00	16.00	15.50	15.50	15.50	15.50	15.50	16.00	16.20	16.30	18.00	16.20	16.00
1985/86	16.00	16.00	16.00	16.00	16.00	16.00	15.70	15.50	14.60	11.90	12.00	11.35	14.75
1986/87	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.50	11.25	11.15	11.20	11.20	10.45
1987/88	11.10	11.95	16.60	17.25	16.75	18.50	19.80	20.15	20.00	18.00	17.40	16.70	17.00
1988/89	16.40	16.20	14.50	14.50	14.00	13.90	13.75	13.50	13.50	14.60	14.65	15.75	14.60
1989/90	15.55	15.30	14.80	14.30	14.04	14.80	15.13	15.13	15.50	15.75	15.65	15.30	15.10
1990/91	14.75	13.90	13.50	13.50	13.50	14.90	14.90	15.05	16.05	16.15	16.50	16.35	14.90
1991/92	15.85	16.00	16.00	16.00	16.00	16.00	15.90	15.50	15.50	15.15	14.50	14.50	15.60
1992/93	14.50	14.00	14.50	14.15	13.40	13.40	13.00	12.80	12.40	11.94	12.00	12.00	13.15
1993/94	12.25	12.45											
Arkansas													
Medium 2/:													
1984/85	16.90	16.70	16.35	16.20	16.00	15.75	16.25	15.95	16.30	16.25	16.25	15.90	16.25
1985/86	16.00	16.00	16.20	16.50	16.50	16.50	16.50	16.25	14.80	12.35	12.50	12.50	15.20
1986/87	12.25	11.60	12.00	12.00	12.00	12.00	12.65	12.65	12.65	12.35	12.25	12.25	12.20
1987/88	12.25	12.65	16.70	18.00	17.85	18.70	20.50	20.50	20.50	19.00	18.90	18.00	17.80
1988/89	17.30	16.25	14.75	15.00	15.00	14.70	14.75	14.75	15.25	15.40	15.40	16.75	15.45
1989/90	17.20	16.65	15.95	15.45	15.25	15.40	15.50	15.50	15.50	15.50	15.50	15.50	15.75
1990/91	15.25	14.75	14.50	14.65	14.75	14.75	15.75	15.75	15.90	16.60	17.00	17.00	15.55
1991/92	16.60	16.10	16.10	16.70	16.65	16.65	16.65	16.35	16.40	15.65	15.35	15.25	16.20
1992/93	15.50	15.45	15.40	15.40	15.05	13.55	13.65	13.70	13.75	13.40	13.25	13.25	14.30
1993/94	13.25	13.50											
California													
Medium 3/:													
1984/85	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25
1985/86	15.25	15.60	16.00	15.95	15.90	16.00	15.75	15.75	15.75	15.59	15.25	15.25	15.65
1986/87	15.00	14.50	13.75	12.65	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	13.00
1987/88	12.50	13.00	16.15	17.00	17.00	16.85	18.50	18.50	18.50	18.00	18.00	18.00	16.85
1988/89	17.85	17.75	16.25	15.75	15.75	15.50	15.50	16.45	17.25	17.25	17.25	17.90	16.70
1989/90	18.45	18.25	17.50	16.55	16.00	15.75	15.75	15.70	15.50	14.90	15.00	15.25	16.20
1990/91	14.80	14.90	14.25	15.25	15.25	15.60	16.25	16.25	16.25	18.10	18.25	17.90	16.10
1991/92	17.65	17.50	17.00	17.80	18.00	18.00	18.05	18.25	18.25	18.25	18.35	18.50	17.95
1992/93	18.25	18.25	18.25	18.25	18.25	18.25	18.25	18.05	17.50	17.50	17.30	17.00	17.95
1993/94	16.80	16.20											
California													
Short 3/:													
1984/85	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25
1985/86	15.25	15.60	16.00	15.95	15.90	16.00	15.75	15.75	15.75	15.60	15.25	15.15	15.65
1986/87	15.00	14.50	13.75	12.80	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	13.00
1987/88	12.50	13.00	16.15	17.00	17.00	16.85	18.50	18.50	18.50	18.00	18.00	18.00	16.85
1988/89	17.85	17.75	16.25	15.75	15.75	15.50	15.50	16.40	17.25	17.25	17.25	17.90	16.70
1989/90	18.20	18.25	17.50	16.55	16.00	15.60	15.75	15.70	15.50	14.90	15.00	15.25	16.20
1990/91	14.80	14.90	14.25	15.25	15.25	15.60	16.25	16.25	16.25	18.10	18.25	17.90	16.10
1991/92	17.65	17.40	17.00	17.80	18.00	18.00	18.05	18.25	18.25	18.25	18.25	18.25	17.95
1992/93	18.25	18.25	18.25	18.25	18.25	18.25	18.25	18.05	17.50	17.50	17.30	17.00	17.95
1993/94	16.80	16.20											

1/ September 1993 data are preliminary. 2/ U.S. No. 2--broken not to exceed 4 percent. 3/ U.S. No. 1.

Source: Rice Market News, Agricultural Marketing Service, USDA.

Appendix table 14--Rice byproducts: Monthly average price, Southwest Louisiana

Year and type	Aug.	Sept. 1/	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Simple average
Milled second head: \$/cwt, bagged 2/													
1983/84	9.75	10.25	10.25	10.25	10.25	10.25	10.25	10.80	10.20	10.00	10.00	10.00	10.20
1984/85	8.50	8.75	8.80	8.00	8.00	8.00	9.00	9.20	9.25	10.00	10.25	10.25	9.00
1985/86	10.25	10.25	10.17	10.00	10.00	10.00	10.25	10.25	8.80	7.75	7.75	7.75	9.45
1986/87	7.75	7.75	7.75	7.65	7.75	7.75	7.75	7.70	7.60	7.60	5.85	5.65	7.40
1987/88	5.75	6.00	6.90	7.50	7.50	7.75	7.70	7.75	7.75	7.75	7.85	8.25	7.40
1988/89	8.15	8.10	8.50	8.00	8.00	8.00	10.05	9.70	9.70	10.70	10.60	10.45	9.15
1989/90	9.95	9.65	9.00	8.10	8.00	8.00	8.50	8.50	8.50	8.50	8.50	8.40	8.65
1990/91	7.75	7.50	7.50	7.50	7.50	7.50	7.90	7.50	8.50	8.60	9.00	9.15	8.00
1991/92	8.65	8.50	9.20	9.50	9.50	9.50	9.15	8.75	8.80	8.75	9.00	9.00	9.05
1992/93	9.00	9.00	8.90	8.90	8.75	8.40	7.80	7.75	7.65	7.50	7.35	7.35	8.20
1993/94	7.35	7.35											
Rice bran, f.o.b. mills: \$/ton 3/													
1983/84	62.15	70.00	94.00	108.35	120.85	98.50	57.50	50.00	67.50	60.00	NQ	59.00	77.10
1984/85	69.15	49.50	45.15	53.75	69.15	85.00	77.50	53.25	40.50	45.67	45.00	47.50	56.75
1985/86	43.35	40.00	20.00	42.50	62.50	86.00	65.00	51.65	NQ	25.75	20.00	18.35	43.20
1986/87	16.25	23.80	26.50	34.00	53.15	50.00	36.70	28.40	23.50	20.65	18.80	17.00	29.05
1987/88	19.50	27.40	46.70	54.50	54.20	68.35	49.65	47.25	60.00	45.00	44.20	85.00	50.15
1988/89	64.00	58.10	64.00	64.00	70.65	71.40	52.25	64.10	65.00	45.85	46.65	48.75	59.55
1989/90	55.75	55.40	60.25	69.00	76.20	84.40	51.00	49.65	51.50	71.50	75.35	75.90	64.65
1990/91	72.25	52.40	50.75	52.00	56.00	66.40	51.75	48.65	57.65	47.35	50.25	57.50	55.25
1991/92	42.85	36.80	43.00	54.50	72.00	75.00	56.50	44.65	41.40	40.90	42.25	45.40	49.60
1992/93	43.75	38.40	41.15	58.60	72.65	79.25	59.50	51.50	49.40	31.50	40.00	43.90	50.80
1993/94	37.10	41.65	41.67										
Rice millfeed, f.o.b. mills: \$/ton 3/													
1983/84	24.00	25.40	33.30	42.10	61.65	53.00	22.50	24.75	31.20	21.25	25.00	27.75	32.65
1984/85	23.50	18.75	18.65	19.40	24.50	31.75	34.70	22.00	17.00	16.90	15.00	14.50	21.40
1985/86	13.00	13.00	8.00	15.40	19.50	34.10	NQ	19.50	20.85	8.50	5.00	4.50	14.65
1986/87	5.15	10.00	10.00	11.25	15.00	13.75	8.15	6.15	4.50	3.50	3.65	4.25	7.95
1987/88	8.50	9.50	21.35	22.70	21.50	28.35	17.40	18.85	22.50	16.00	19.50	40.00	20.50
1988/89	21.50	17.90	18.00	21.50	24.00	23.60	20.00	19.00	20.00	15.00	15.65	16.00	19.35
1989/90	17.15	16.75	14.00	22.65	23.70	27.70	14.20	14.65	16.50	22.40	25.00	25.00	19.95
1990/91	28.75	19.00	19.25	19.00	21.50	25.25	17.15	18.50	17.50	13.85	14.25	16.30	19.20
1991/92	12.15	11.20	13.40	19.90	39.50	37.15	17.50	14.65	14.75	14.15	15.00	16.15	18.80
1992/93	14.75	13.50	14.50	17.50	27.40	37.15	25.40	18.70	17.00	8.90	8.80	8.75	17.70
1993/94	10.50	11.85											

NQ = Not quoted.

1/ September 1993 data are preliminary. 2/ U.S. No. 4 or better. 3/ Prices quoted as bulk.

Source: Rice Market News, Agricultural Marketing Service, USDA.

Appendix table 15--Brewers' prices: Monthly average price for Arkansas brewers' rice and New York brewers' corn grits

Year and state	Aug.	Sept. 1/	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Simple average
Arkansas 2/:													
1983/84	6.50	6.75	7.00	7.00	6.90	6.76	6.63	6.50	6.62	6.70	6.90	7.10	6.80
1984/85	7.25	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.15	7.00	6.80	6.75	7.15
1985/86	6.75	6.70	6.50	6.50	6.50	6.30	6.00	6.00	5.75	5.50	5.50	5.50	6.15
1986/87	5.20	5.00	4.75	4.75	4.65	4.45	4.20	4.20	4.20	4.20	4.10	3.75	4.45
1987/88	4.00	4.15	6.00	6.20	6.10	6.10	6.95	7.25	7.25	6.90	7.40	8.35	6.40
1988/89	8.50	8.70	8.75	8.75	8.75	8.60	10.45	10.20	10.20	11.00	11.00	10.65	9.65
1989/90	9.65	9.00	8.50	8.00	7.75	7.75	7.75	7.45	6.85	6.60	6.60	7.05	7.75
1990/91	7.00	6.10	6.20	6.50	6.25	6.05	6.65	7.10	8.00	8.00	8.00	8.00	7.00
1991/92	8.00	8.40	8.70	9.00	9.00	8.90	8.50	8.65	8.25	8.25	8.25	8.25	8.50
1992/93	8.25	8.25	8.25	7.90	7.30	7.20	7.00	6.90	6.40	6.25	6.00	6.05	7.00
1993/94	6.00	6.00											
New York 3/:													
1983/84	12.85	13.06	12.77	12.64	11.96	11.81	11.95	12.58	12.99	12.95	13.19	13.01	12.65
1984/85	12.90	12.64	11.49	11.33	11.03	11.20	11.50	11.86	11.42	11.45	11.54	11.46	11.65
1985/86	11.40	11.59	10.62	10.83	11.11	10.91	10.71	10.81	10.75	11.12	11.26	10.98	11.01
1986/87	10.30	9.84	9.85	9.84	9.46	9.40	9.20	9.42	9.60	10.02	9.97	9.48	9.70
1987/88	9.22	9.34	9.51	9.56	9.52	9.66	9.76	9.78	9.81	9.82	11.42	12.23	9.97
1988/89	11.67	11.50	11.56	11.37	11.54	11.47	11.32	11.56	11.37	11.99	11.47	11.54	11.53
1989/90	11.23	11.35	11.50	11.55	11.47	11.49	11.51	11.66	12.01	12.19	12.17	12.09	11.69
1990/91	11.83	11.61	11.62	11.63	11.60	11.61	11.71	11.70	11.78	11.52	11.39	11.29	11.61
1991/92	11.71	11.50	11.55	11.41	11.45	11.44	11.75	11.77	11.51	11.56	11.84	11.48	11.58
1992/93	11.25	11.30	11.21	11.29	11.25	11.20	11.18	11.44	11.65	11.63	11.49	11.77	11.39
1993/94	11.72	11.48											

1/ September 1993 data are preliminary.

Sources: 2/ Rice Market News, Agricultural Marketing Service, USDA.
3/ Milling and Baking News.

Appendix table 16--Thailand milled rice prices, f.o.b. Bangkok 1/

Type	1988/89		1989/90		1990/91		1991/92		1992/93		1993/94	
	\$/metric ton											
	BOT 2/	NPQ 3/	BOT	NPQ	BOT	NPQ	BOT	NPQ	BOT	NPQ	BOT	NPQ
100% 1st grade:												
August	355	NA	504	NA	315	NA	353	NA	328	NA	290	NA
September	355	NA	390	NA	312	NA	350	NA	322	NA	293	NA
October	355	NA	374	NA	318	NA	340	NA	311	NA		
November	355	NA	356	NA	314	NA	339	NA	310	NA		
December	340	NA	355	NA	310	NA	328	NA	311	NA		
January	335	NA	355	NA	361	NA	325	NA	315	NA		
February	NA	NA	355	NA	378	NA	325	NA	314	NA		
March	324	NA	343	NA	371	NA	325	NA	301	NA		
April	348	NA	341	NA	343	NA	327	NA	291	NA		
May	357	NA	332	NA	341	NA	327	NA	269	NA		
June	383	NA	318	NA	344	NA	329	NA	277	NA		
July	410	NA	310	NA	350	NA	330	NA	290	NA		
Average	356	NA	361	NA	338	NA	333	NA	303	NA		
100% 2nd grade:												
August	315	274	373	337	285	268	325	309	303	278	240	218
September	315	279	360	328	282	269	325	300	297	267	244	216
October	315	279	344	314	288	290	315	284	286	260		
November	315	278	326	271	287	279	314	283	285	261		
December	300	265	325	279	285	272	303	277	286	265		
January	290	268	325	284	336	312	300	284	290	270		
February	285	276	325	307	353	336	300	287	289	267		
March	294	282	313	297	346	321	300	286	276	243		
April	318	302	311	284	318	295	302	287	261	216		
May	327	316	304	267	328	298	302	284	239	194		
June	353	337	288	264	319	302	304	278	237	199		
July	380	357	280	NA	325	315	305	289	240	209		
Average	317	293	323	NA	313	296	308	287	274	244		
5% broken:												
August	305	269	363	332	274	260	315	298	293	269	230	210
September	305	274	350	320	272	259	315	290	287	256	234	206
October	305	273	334	304	278	281	305	277	276	250		
November	305	272	316	264	276	271	304	274	275	252		
December	290	260	315	272	275	264	293	270	276	256		
January	280	264	315	277	326	305	290	276	280	262		
February	275	269	315	300	343	326	290	278	279	254		
March	284	277	303	289	336	311	290	277	266	230		
April	308	298	301	276	308	286	291	279	251	206		
May	317	310	290	260	306	288	292	275	229	185		
June	343	331	278	NA	309	292	294	268	227	189		
July	370	351	270	NA	315	306	295	279	230	201		
Average	307	287	312	NA	301	287	298	278	264	234		

NA = Not available.

1/ Includes export premium, export tax, and cost of bags. Packed in bags of 100 kg net. 2/ Thailand's posted board of Trade prices. 3/ Nominal price quotes, Bangkok. In mid-1984, price quotes began to vary significantly from the posted Board of Trade prices. Since then, the nominal quotes have appeared to be more representative of known actual prices than those posted by the Board of Trade for most grades of rice.

Appendix table 17--Milled rice: Average cost and freight ARAG quotations 1/

Type	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94 4/
\$/metric ton							
U.S. no. 2 milled 4%, container, FAS 2/:							
August	316	325	354	306	364	332	272
September	349	303	357	287	373	336	281
October	NQ	303	324	284	379	333	
November	415	310	314	314	381	314	
December	413	300	312	325	380	305	
January	442	292	338	333	379	289	
February	496	290	356	349	378	276	
March	493	290	348	364	363	263	
April	455	292	342	372	343	248	
May	420	317	338	380	333	243	
June	329	356	336	389	313	245	
July	355	368	333	378	322	258	
Average	408	312	338	340	359	287	
Thai SWR 100% Grade A, bulk 3/:							
August	300	380	448	401	415	408	365
September	312	380	433	395	413	400	365
October	349	378	407	402	401	400	
November	341	375	384	395	388	400	
December	338	375	376	400	382	400	
January	365	360	379	418	379	398	
February	395	360	395	439	385	399	
March	396	360	394	428	388	385	
April	383	365	371	398	397	367	
May	377	400	379	398	399	351	
June	366	412	396	391	402	350	
July	383	437	399	395	408	358	
Average	359	382	397	405	396	385	
Thai SWR 100% Grade B, bulk 3/:							
August	250	322	386	311	357	328	255
September	280	320	369	310	341	319	255
October	316	320	359	330	323	307	
November	303	320	331	321	320	302	
December	304	320	322	304	319	304	
January	328	315	328	359	322	308	
February	357	320	350	386	325	313	
March	359	325	343	365	326	289	
April	340	328	326	335	325	269	
May	340	360	309	344	327	246	
June	311	389	308	347	320	242	
July	324	402	307	350	328	249	
Average	318	337	336	339	328	290	

NQ = Not quoted.

1/ ARAG = composite of ports near Rotterdam. 2/ FAS, container, gulf port quote. All other prices are C & F ARAG.
 3/ Thailand prices changed to bulk quote on May 15, 1985. Prior to this date Thai prices were quoted by the bag.
 4/ September 1993 data are preliminary.

Source: Rice Market News, Agricultural Marketing Service, USDA.

Appendix table 18--World rice supply and utilization

Year	Area harvested	Yield 1/	--Production 2/--		Exports 3/	Total use 4/	Ending stocks 5/	Stocks-to-use ratio 6/
	Million hectares	Mt/ha	Rough	Milled				
1961/62	115.7	1.86	215.7	147.3	6.3	149.2	8.5	5.7
1962/63	119.6	1.91	228.2	155.2	7.3	151.3	12.4	8.2
1963/64	121.5	2.04	248.4	169.1	7.7	165.2	16.2	9.8
1964/65	125.4	2.12	265.6	180.8	8.2	179.8	17.3	9.6
1965/66	124.0	2.04	253.5	172.9	7.9	172.2	18.0	10.4
1966/67	125.7	2.08	262.1	179.0	7.8	178.4	18.6	10.4
1967/68	127.0	2.18	276.9	188.9	7.2	186.5	20.9	11.2
1968/69	128.7	2.22	285.8	194.9	7.5	191.0	24.8	13.0
1969/70	131.5	2.25	295.2	201.1	8.2	199.7	26.1	13.1
1970/71	132.7	2.35	312.5	213.0	8.6	210.4	28.8	13.7
1971/72	134.9	2.35	316.6	215.8	8.7	216.2	28.4	13.1
1972/73	132.7	2.31	306.2	208.9	8.4	213.9	23.4	10.9
1973/74	136.4	2.45	333.8	227.6	7.7	222.4	28.5	12.8
1974/75	137.9	2.40	331.1	225.7	7.3	226.0	28.2	12.5
1975/76	143.0	2.50	357.4	243.1	8.4	232.5	38.9	16.7
1976/77	141.5	2.45	346.8	235.8	10.6	236.9	37.8	16.0
1977/78	143.6	2.57	368.7	250.6	9.6	244.5	43.9	18.0
1978/79	143.8	2.68	385.4	262.4	11.9	252.2	54.1	21.5
1979/80	141.4	2.66	376.6	256.8	12.1	258.1	52.8	20.5
1980/81	144.2	2.73	393.8	267.8	12.0	272.7	47.8	17.5
1981/82	144.9	2.81	407.6	277.4	10.8	281.4	43.7	15.5
1982/83	140.4	2.96	416.1	283.6	11.0	283.9	43.4	15.3
1983/84	144.1	3.11	448.5	305.3	11.5	301.9	46.8	15.5
1984/85	144.1	3.22	463.6	315.9	10.7	307.2	55.5	18.1
1985/86	145.0	3.22	466.6	317.5	11.7	318.0	55.0	17.3
1986/87	145.1	3.21	465.5	316.7	12.9	320.8	50.9	15.9
1987/88	141.7	3.27	463.8	314.5	11.2	319.9	45.5	14.2
1988/89	145.5	3.35	487.5	330.1	13.9	327.7	47.8	14.6
1989/90	146.6	3.45	506.6	343.1	11.7	336.4	54.5	16.2
1990/91	146.8	3.53	518.0	350.7	12.0	345.7	59.5	17.2
1991/92	145.7	3.54	515.1	348.4	14.0	352.9	54.9	15.6
1992/93 7/	144.9	3.58	518.9	351.0	13.9	354.1	51.8	14.6
1993/94 8/	145.3	3.52	511.4	345.2	14.9	354.8	41.2	11.6

1/ Yields are based on rough production. 2/ Production is expressed on both rough and milled basis; stocks, exports, and utilization are expressed on a milled basis. 3/ Exports quoted on calendar year basis. Trade data has been adjusted (July 1993) to exclude EC intra-trade for the years 1980 to the present. 4/ For countries for which stock data are not available, utilization estimates represent apparent utilization, i.e., they include annual stock level adjustments. 5/ Stocks data are based on an aggregate of different market years and should not be construed as representing world stock levels at a fixed point in time. Stocks data are not available for all countries and exclude the former USSR, North Korea, and parts of Eastern Europe. 6/ Stocks-to-use represents the ratio of marketing year ending stocks to total utilization. 7/ Preliminary. 8/ Forecast as of October 1993.

Source: World Grain Situation and Outlook, Foreign Agricultural Service, USDA.

Appendix table 19--World rice production and stocks: Selected countries or regions 1/

Country or region	Crop year 2/								
	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94 4/
Million metric tons									
Production:									
Bangladesh	22.6	23.1	23.1	23.3	26.8	26.8	27.4	27.0	27.0
Burma	11.5	11.8	11.4	12.5	13.5	13.7	12.8	13.4	14.7
China	168.6	172.2	173.9	169.1	180.1	189.3	183.8	186.2	177.1
India	95.7	90.6	85.3	105.7	110.4	111.4	110.5	108.8	110.3
Indonesia	39.0	39.0	41.5	42.3	44.7	45.2	44.7	47.3	48.2
Japan	14.6	14.6	13.3	12.4	12.9	13.1	12.0	13.2	10.3
South Korea	7.9	7.9	7.6	8.4	8.1	7.7	7.4	7.3	6.4
Pakistan	4.4	5.2	4.9	4.8	4.8	4.9	4.9	4.6	4.8
Thailand	20.3	18.9	18.4	21.3	20.2	17.2	20.4	19.4	19.7
Subtotal	384.6	383.3	379.4	399.8	421.5	429.3	423.9	427.2	418.5
Australia	0.7	0.6	0.8	0.8	0.8	0.8	1.1	1.0	1.1
Brazil	9.8	10.6	11.8	11.0	8.0	10.0	10.1	10.1	10.1
EC-12	2.0	1.9	1.9	2.0	2.1	2.4	2.3	2.2	2.1
All others	63.4	63.1	64.0	66.4	67.2	68.4	70.6	70.3	72.1
Total non-U.S.	460.5	459.5	457.9	480.0	499.6	510.9	508.0	510.8	503.9
United States	6.1	6.0	5.9	7.3	7.0	7.1	7.1	8.1	7.5
World total	466.6	465.5	463.8	487.4	506.6	518.0	515.1	518.9	511.4
Ending stocks 3/:									
Total foreign	52.5	49.2	44.5	46.9	53.6	58.7	54.0	51.3	44.0
United States	2.5	1.7	1.0	0.9	0.9	0.8	0.9	1.1	0.9
World total	55.0	50.9	45.5	47.8	54.5	59.5	54.9	52.4	44.9

1/ Production is rough basis, but ending stocks are milled basis. 2/ World rice harvest stretches over 6-8 months and varies widely across countries and hemispheres. 3/ Stocks are based on an aggregate of different local marketing years, and should not be construed as representing world stock levels at a fixed point in time. In addition, stocks data are not available for all countries. 4/ Projected as of October 1993.

Source: World Grain Situation and Outlook and World Agricultural Production, Foreign Agricultural Service, USDA.

Appendix table 20--World rice trade (milled basis): Exports and imports of selected countries or regions

Country or region	Calendar year							
	1987	1988	1989	1990	1991	1992	1993 1/	1994 2/
1,000 metric tons								
Exports:								
United States	2,444	2,241	2,967	2,420	2,197	2,106	2,500	2,800
Argentina	150	21	36	53	75	250	175	170
Australia	338	417	450	470	400	500	500	775
Burma	493	368	456	186	176	185	275	500
China	1,301	698	315	326	689	933	1,100	800
Taiwan	241	104	68	79	229	188	225	225
EC-12	362	228	239	271	391	376	300	275
Egypt	105	108	32	85	159	209	200	200
Guyana	69	56	41	51	54	114	145	160
India	389	350	400	505	711	500	450	500
Indonesia	150	0	104	50	0	60	350	0
Pakistan	1,226	923	789	904	1,297	1,358	900	1,200
Thailand	4,344	4,791	6,036	3,938	3,988	4,776	4,300	4,600
Uruguay	204	273	260	288	260	300	350	400
Vietnam	153	97	1,383	1,670	1,048	1,914	1,900	2,000
Other	677	566	401	365	335	268	263	270
World total	12,646	11,241	13,977	11,661	12,009	14,037	13,933	14,875
Imports:								
Bangladesh	724	394	583	113	24	15	20	0
Brazil	85	110	147	493	776	450	350	350
Canada	85	113	111	154	185	173	180	190
China	429	421	1,042	57	67	100	100	50
Cuba	168	162	164	238	264	138	200	250
Eastern Europe	220	151	169	135	160	209	262	262
EC-12 3/	535	590	561	500	481	463	575	625
India	8	697	627	61	10	0	130	0
Indonesia	131	50	385	77	192	650	50	50
Iran	895	400	1,000	850	565	950	950	750
Iraq	515	547	448	388	252	434	500	550
Ivory Coast	445	212	305	303	417	270	320	350
North Korea	0	0	0	0	200	10	150	100
Kuwait	90	90	90	90	90	90	100	100
Madagascar	125	70	130	155	60	100	100	100
Malaysia	196	289	378	298	367	444	400	400
Mexico	1	1	189	148	173	385	350	400
Nigeria	642	344	164	224	296	440	200	350
Peru	115	19	237	233	340	325	220	300
Philippines	1	175	185	538	91	0	150	0
Saudi Arabia	510	510	525	547	533	625	550	600
Senegal	263	209	432	332	433	360	385	400
South Africa	268	242	292	295	360	375	385	400
Sri Lanka	108	184	338	139	208	330	250	300
Syria	90	125	74	101	123	48	140	150
Turkey	175	67	221	203	146	292	250	250
U.A. Emirates	289	224	333	317	248	376	250	250
Russia	NA	175	185	100	100	500	400	500
Other	4,187	3,408	3,933	3,324	3,405	4,135	5,257	5,743
Unaccounted 4/	1,346	1,262	729	1,248	1,443	1,350	759	1,105
World total	12,646	11,241	13,977	11,661	12,009	14,037	13,933	14,875

NA = Not available.

1/ Forecast. 2/ Projected as of October 1993. 3/ EC-12 rice trade has been adjusted (July 1993) to exclude EC intra-trade for the years 1980 to the present. 4/ This represents exports not accounted for in reports from importing countries. Because this is recurring, it is taken into account in the assessment of the year ahead.

Source: World Grain Situation and Outlook, Foreign Agricultural Service, USDA.

Appendix table 21--U.S. rice exports by type 1/

Crop year	Regular milled 2/	Brown	Parboiled	Rough	Brokens	Total
1,000 metric tons						
1977/78	1,478.8	244.9	502.5	46.4	43.2	2,315.8
1978/79	1,416.5	276.0	627.3	90.5	20.8	2,431.1
1979/80	1,537.5	475.3	598.4	54.5	40.1	2,705.8
1980/81	1,011.7	1,202.5	781.7	13.5	18.0	3,027.4
1981/82	976.8	502.5	1,000.9	188.9	12.7	2,681.8
1982/83	993.2	354.3	846.5	18.7	5.9	2,218.6
1983/84	972.3	334.2	821.8	105.7	37.6	2,271.6
1984/85	1,009.3	169.6	630.8	103.1	46.8	1,959.6
1985/86	950.3	272.0	523.8	53.4	80.1	1,879.6
1986/87	1,541.2	245.1	659.7	264.0	5.7	2,715.7
1987/88	1,279.7	178.0	642.9	37.3	152.9	2,290.8
1988/89	1,425.0	313.8	834.4	127.3	81.4	2,781.9
1989/90	1,165.5	311.4	943.9	51.3	65.3	2,537.4
1990/91	874.0	423.2	823.3	155.1	42.7	2,318.3
1991/92	754.3	314.4	776.5	203.9	74.4	2,123.5

1/ Categories have not been converted to the same basis. 2/ Total minus sum of other categories.

Source: U.S. Bureau of the Census.

Appendix table 22--U.S. rice exports by program

Fiscal year	PL 480	Section 416	CCC credit programs 1/	CCC African relief exports	EEP 2/	Export programs 3/	Exports outside specified export programs	Total U.S. rice exports	Export programs as a share of total exports
-----1,000 metric tons-----									
									Percent
1975	747	0	48	0	0	795	1,419	2,217	36
1976	509	0	101	0	0	610	1,340	1,953	31
1977	691	0	15	0	0	705	1,614	2,317	30
1978	530	0	50	0	0	580	1,696	2,276	25
1979	486	0	42	0	0	528	1,868	2,396	22
1980	540	0	168	0	0	708	2,247	2,955	24
1981	360	0	452	0	0	812	2,360	3,172	26
1982	374	0	14	0	0	388	2,523	2,911	13
1983	475	0	328	0	0	803	1,473	2,276	35
1984	464	0	571	49	0	1,084	1,209	2,293	47
1985	577	0	359	4/ 180	0	4/ 1,116	4/ 856	1,972	4/ 56
1986	313	0	477	0	23	813	1,569	2,382	34
1987	426	60	636	0	28	1,150	1,304	2,454	47
1988	321	29	443	0	120	913	1,220	2,173	42
1989	408	0	826	0	20	1,254	1,787	3,041	41
1990	350	0	663	0	0	1,013	1,484	2,497	41
1991	372	0	183	0	76	631	1,764	2,395	26
1992	381	0	220	0	358	919	1,360	2,279	40

1/ Quantities and values shown are based on reports supplied by the export trade and may not completely reflect exports made under these programs. 2/ Sales not shipments. 3/ Adjusted for estimated overlap between CCC export credit and EEP shipments. 4/ Estimated.

Sources: Agricultural Stabilization and Conservation Service, and Export Credits, Foreign Agricultural Service, USDA. Table provided by Commodity Trade Programs Section, ERS-CED, (202) 219-0821.

Appendix table 23--Top-10 U.S. rice export markets

Rank	FY 1992		FY 1991		FY 1990		FY 1989		FY 1988		FY 1987	
	Country	% of total exports 1/	Country	% of total exports	Country	% of total exports	Country	% of total exports	Country	% of total exports	Country	% of total exports
1	Saudi Arabia	11.7	Saudi Arabia	11.1	Iraq	12.1	Iraq	18.8	Iraq	21.4	Iraq	22.1
2	Canada	7.8	Brazil	8.2	Saudi Arabia	9.5	Saudi Arabia	8.7	Saudi Arabia	14.2	Saudi Arabia	13.1
3	Turkey	7.4	Canada	6.8	Mexico	7.5	Belgium-Luxembourg	5.1	Belgium-Luxembourg	6.3	Belgium-Luxembourg	6.0
4	Republic of South Africa	6.1	Haiti	6.1	Peru	6.3	Turkey	4.4	Philippines	5.9	Haiti	4.7
5	Brazil	5.9	Turkey	5.7	Canada	5.4	Spain	4.3	Canada	5.3	Canada	4.4
6	Haiti	5.5	Republic of South Africa	4.9	Turkey	5.3	Mexico	3.8	Republic of South Africa	4.5	Republic of South Africa	3.4
7	Mexico	5.3	Switzerland	4.1	Haiti	4.3	Canada	3.5	Haiti	3.3	Guinea	2.7
8	Switzerland	3.8	Liberia	3.9	Republic of South Africa	4.1	Switzerland	3.2	Switzerland	3.0	Netherlands	2.5
9	Ivory Coast	2.9	Netherlands	3.5	Belgium-Luxembourg	4.1	Haiti	3.1	Jamaica	2.9	Liberia	2.4
10	Belgium-Luxembourg	2.9	Mexico	3.5	Jordan	3.7	Republic of South Africa	3.1	Bangladesh	2.7	Turkey	2.4
	Sub-total	59.4		57.8		62.4		58.1		69.3		63.7
-----Million dollars-----												
Value of U.S. rice exports	757		749		829		955		734		551	

1/ Percent calculated as proportion of total value of U.S. rice exports.

Sources: U.S. Bureau of the Census.
FATUS, Foreign Agricultural Trade of the U.S., USDA, various issues.

