

Chapter 9

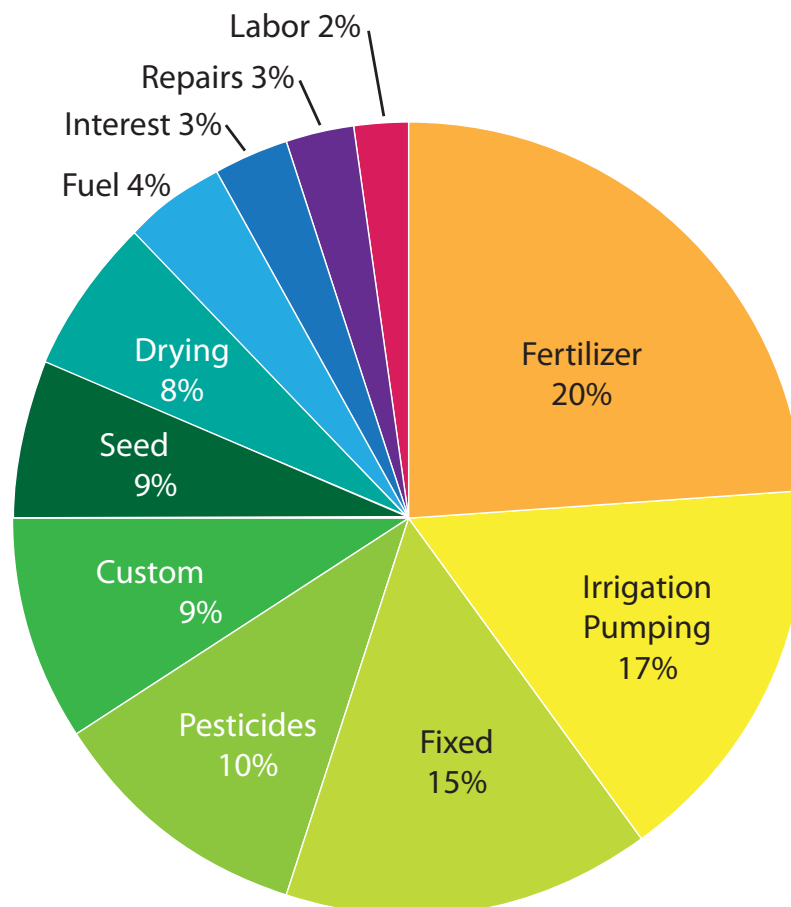
Rice Production Economics

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Rice is produced in Louisiana under several different types of agronomic production systems. It may be water-seeded by airplane onto a flooded field or drill-seeded by tractor and grain drill on a dry field or broadcast onto a dry seedbed by air or ground equipment. It may be produced in a crop rotation, following soybeans, crawfish or some other commodity, or it may be produced following a fallow year. Tillage options include conventional tillage or stale seedbed. Rice variety produced may be conventional, herbicide-resistant or hybrid. Source of irrigation water may be from a deep well groundwater source or a surface canal source. All of these production system

options have a direct impact on rice production costs.

The figure below provides a general percentage breakdown of the major production cost items associated with rice production in Louisiana. Irrigation pumping cost (17 percent), fertilization cost (20 percent), pesticide cost (10 percent) and fixed equipment cost (15 percent) comprise the major cost items associated with rice production in southwest Louisiana. Irrigation pumping costs are generally lower for surface water sources in southwest Louisiana and for both water sources in northeast Louisiana. Total variable production costs for rice in Louisiana are in the range of \$550 to \$600 per planted acre. Total fixed equipment production costs are the range of \$75



to \$100 per acre. In southwest Louisiana, a portion of the rice acreage is ratoon cropped each year. This second production period following the first crop harvest generally entails application of N, reflooding the field for a period of time, then draining the field just prior to harvest.

Most of the rice acreage in production in Louisiana is produced on leased land. Share rental arrangements are the most prevalent type of crop lease arrangement being utilized. Under these types of rental arrangements, the producer and the landlord each pay a specified portion of the production expenses. One survey of rice producers in the state indicated that the two most common types of rice share rental arrangements were: (1) an 80/20 arrangement where the grower received 80 percent of the crop market and government program income and paid all variable production expenses, including irrigation pumping cost, with the exception of 20 percent of drying expenses paid by the landlord who received 20 percent of the crop market and government program income; and (2) a 60/40 arrangement where the grower received 60 percent of the crop market and government program income and paid all variable production expenses, excluding irrigation pumping cost and 40 percent of fertilization, pesticide and drying expenses paid by the landlord who received 40 percent of the crop market and government program income. Some rice tracts are leased under a cash rental arrangement. In these cases, the producer generally pays all production expenses and receives 100 percent of the crop market and government program income. Average rice cash rental rates, based upon the same survey data, were in the range of \$75 to \$100 per planted acre.

Farm Program

Rice is one of several commodities produced in the United States whose price/income is supported by the federal government through various farm programs, commonly referred to as farm bills. Previous farm bills, which have included program provisions for rice price and income support activities, have included the Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) and the Federal Agriculture Improvement and Reform Act of 1996 (1996 Farm Bill). Current rice farm program provisions are speci-

fied in the Food, Conservation and Energy Act of 2008 (2008 farm bill). Although the specific mechanisms to support rice market prices have varied from one farm bill to the next, the basic farm policy tools utilized over the years has remained relatively similar. Listed below are definitions of several terms associated with rice farm program provisions.

Target price = the maximum level of income support on a price per yield unit basis. Income support program payments to rice producers are determined as the difference between the target price and some lower price level. If market prices are above the target price, certain program payment values fall to zero.

Loan rate = the minimum level of income support on a price-per-yield unit basis. The loan rate represents a floor price. In general, if market prices fall below the loan rate, the government will purchase rice at the loan rate value and take ownership of the commodity. In an effort to prevent the federal government from accumulating stocks of commodities such as rice, the marketing loan program was developed, which basically pays the rice producer the difference between the loan rate and a lower market price and allows the producer to maintain ownership of the commodity for direct sale in the marketplace.

Base acres = the acres of established rice base on which price/income support payments are based. Regardless of whether actual planted rice acreage in a given year exceeds or is less than established base acres, rice program payments are always based and paid on a percentage of base acre.

Payment acres = the portion of established base acres on which rice price/support payments are determined and paid. For the past several farm bills, program payments for rice, as well as for other program commodities, were paid on 85 percent of established base acres, which are referred to as program payment acres.

Program yield = the yield per acre value that is used in determining rice program payments. Program payments that have represented income support above the loan rate (direct payments,

counter-cyclical payments, deficiency payments, market transition payments) have all been paid based upon established program yields rather than actual yields.

Decoupled payment = a general class of program payments that are based on established program yields and price levels rather than actual market prices and production yields.

Direct payment = program payments that are decoupled from market price and actual production. These payments are based on a fixed payment rate and an established program yield.

Counter cyclical payment = program payments that are not decoupled from market price. These payments vary inversely with the market price level and serve to stabilize rice farm income. These payments are, however, paid on established program yields.

Loan deficiency payment = program payments made to rice producers when market prices are below the loan rate. In the case of rice, when the world rough rice market price is below the loan rate, loan deficiency payments are made to producers as the difference between the loan rate and the world market price. Unlike other rice program payments, loan deficiency payments are paid on actual production rather than established program acres or yield.

Marketing

More than half of the rice produced in the United States is marketed domestically, with the remainder being exported to foreign countries. The domestic rice market has more than doubled over the past 25 years. Approximately 75 percent of domestic rice use is for food use, both directly and in processed

foods. Direct food use of rice accounts for about 60 percent of total use, while use of rice in processed foods (package mixes, cereal and rice cakes) accounts for about 15 percent of total use. Of the remaining domestic use of rice, roughly 10 percent is used in pet foods and 15 percent is used in beer production.

About 65 percent of rice exported is in milled form and the remaining 35 percent exported is as rough rice. Latin America is the primary export market for U.S. rice. Specific countries that have top U.S. rice export markets include Canada, Costa Rica, Guatemala, Haiti, Honduras, Japan, Iraq, Mexico, Nicaragua and Panama. Because such a large portion of U.S. rice production is exported, the global rice market has a significant impact on U.S. domestic price levels. The United States is essentially a price-taker in the world rice market, with Thailand and Vietnam driving world market forces.

Futures contracts for U.S. rough rice are traded on the Chicago Board of Trade (CBOT). The main functions of a futures market are price risk management and price discovery. Price risk can be managed by hedging rough rice contracts on the exchange. Hedging provides an opportunity to lock in a rough rice price, as gains or losses in the cash market are usually offset by positions held in the futures market. Use of the futures market to manage price risk is available to rice producers, mills, merchandisers, food processors, exporters and importers. The futures market also provides a means of price discovery for the rice industry. Daily quotes of rough rice prices for future delivery serve as predictions of what buyers and sellers in the rice market expect prices to be at that time. Contract specifications for the rough rice futures contracts traded on the CBOT, along with grades for rough and milled rice, are shown in the Appendix (Tables 3,4 & 5).