

# **Louisiana Economic Development: Identification of Value-Added Agriculture Opportunities**

## 1. EXECUTIVE SUMMARY

### 1.1. SCOPE AND OBJECTIVE OF THIS STUDY

Louisiana Economic Development (“LED”) commissioned Informa Economics, Inc. (“Informa,” formerly Sparks Companies, Inc.) to identify opportunities for value-added agricultural activities in Louisiana. These opportunities might partially overlap the sub-clusters toward which LED is already devoting development efforts under its Agriculture, Forestry and Food Technology Cluster, but the project was mainly intended to expand on the current list of sub-clusters.

For this report, Informa reviewed trends and developments in the U.S. agriculture sector and identified opportunities where Louisiana likely would have a distinct, sustainable competitive advantage. Informa constructed an outlook for the relevant commodities and processing industries and then determined which industries are likely to be the most favorable opportunities for Louisiana. Since Informa’s expertise is in crop and livestock/poultry markets and related agribusinesses, it was agreed that the Informa project would exclude work related to the Forestry-Related Sub-Cluster, though analysis was conducted on the ethanol industry, which would fall under the Renewables/Biomass section of the Forestry-Related Sub-Cluster.

Extensive analyses are contained in this report for the following subsectors of Louisiana’s agriculture and food economy: poultry, dairy, aquaculture, cotton, rice and sugar. Additionally, three special situations in agricultural processing were investigated as potential opportunities for Louisiana: pet food, sweet potato processing and ethanol. During the course of the study, Informa considered a range of other commodities and industries but determined that their low probability of success did not merit more extensive analysis; for those commodities and industries that currently have significant roles in Louisiana and explanation of why further consideration was not given is contained in the main body of this report.

### 1.2. TRENDS IN LOUISIANA LIVESTOCK, POULTRY & DAIRY

Food animal production in Louisiana is dominated by the broiler industry, which accounted for 45% of the gross farm value generated by animal enterprises in Louisiana in 2003, excluding aquaculture and marine enterprises. Excluding horse operations, the broiler industry would have accounted for 59% of the total value, and the overall poultry subsector would have accounted for 63%.

#### 1.2.1. Poultry

Over the remainder of the decade, U.S. broiler production is expected to continue its long-term upward trend, though at a moderately slower pace than in the past. In 2003, production of broilers was estimated at 32.7 billion pounds on a ready-to-cook (RTC) basis, equating to roughly 45.3 billion pounds live weight; by 2009, RTC production is expected to hit 37.7 billion pounds, equivalent to 52.2 billion pounds live weight. This represents annual growth of 2%, compared to 5% in the 1990s. Exports are forecast to expand from 5.0 billion pounds RTC in 2003 to 5.9 billion pounds.

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The broiler industry has been a bright spot in Louisiana's animal production subsector. Live production nearly doubled from 626 million pounds live weight in 1991 to 1.1 billion pounds in 2000, before receding to 978 million pounds in 2003, hurt in the 2000-2002 by problems that affected the overall U.S. industry. Louisiana was one of the few states to experience widespread expansion in broiler production between the U.S. Agricultural Censuses of 1997 and 2002, whereas most other states in the Southeast had growth in some counties essentially offset by reductions in other counties.

It is assumed that Louisiana's share of U.S. slaughter will not change markedly through 2009, implying that Louisiana's industry will grow in line with U.S. growth, though it is possible that a concerted effort by LED could attract additional processing infrastructure and, likely in response, live broiler production growth above national trends.

### **1.2.2. Dairy**

The U.S. dairy industry has been characterized by transition over the last twenty years. As milk production continues to move westward, processing capacity follows. This has been a result of several factors, including the demographics of milk producers in traditional areas (smaller, family farms), economies of scale enjoyed by larger Western producers, lower land values in the West, and environmental concerns, among others. Some of these factors also generally apply to Louisiana.

From 1992 to 2003, production in Southeastern states (excluding Florida) declined 33%, while Louisiana lost 46% of its production. With the decline in milk production has come a decline in milk processing capacity. Despite the fact that average herd sizes have increased considerably in Louisiana as the result of consolidation, the average herd size of 96 cows was far behind California's average of 703 cows in 2003. Another factor in the landscape of Louisiana's milk production is poor cow productivity, mostly attributable to Louisiana's heat and humidity, and secondarily to feed quality and availability.

The demand that currently does exist for milk production in Louisiana is for fluid bottling. It is estimated that Louisiana's population consumes approximately 726 million pounds of fluid milk per year, whereas milk production in the state was only 519 million pounds in 2003. The fact that fluid uses are the highest valued outlet for milk supplies implies that there is very little milk left over for processing into dairy products such as cheese or butter. Any expansion in milk production that does occur in Louisiana in the near future will likely be used for fluid purposes; otherwise, the prospects for expanded dairy processing in the state are not high. Any processing opportunities would appear to be limited to selective niche markets or highly differentiated products that are closely linked to other successful food products for which the state is known.

### **1.3. AQUACULTURE**

Given Louisiana's location on the Gulf of Mexico, the harvesting and sale of finfish and shellfish have always constituted an important business for the state, first through wild catch and increasingly in the form of aquaculture. In 2003, aquaculture and marine fisheries generated \$410 million in gross value in Louisiana, nearly 10% of the value from all crop and animal activities in the state.

In the U.S., the wild catch remains ten times the size of aquaculture. However, the wild catch actually peaked in 1987 at 5.7 million metric tons and began receding in the mid-1990s.

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On the other hand, aquaculture has grown at an average annual rate of 2% over the last decade. Unfortunately, given how fast the global aquaculture industry is growing relative to the U.S., the U.S. share of aquaculture output has fallen from 3% in the mid-1980s to 1% today.

Catfish still represent 80% of U.S. output of freshwater aquaculture species, while crawfish and trout account for most of the remainder, at 7-8% each. Catfish and crawfish dominate Louisiana aquaculture; nearly equal quantities of catfish and crawfish were produced in Louisiana in 2002. However, given the less favorable economics of catfish production in 2003, largely due to competition from imports, catfish production fell while crawfish production grew.

In terms of sales value, Louisiana's aquaculture subsector is considerably more diverse. Between 1998 and 2003, catfish and crawfish sales combined accounted for between half and two-thirds of the value of aquaculture products sold in any given year. Farm-raised oysters accounted for almost one-third of the value of the state's aquaculture output as recently as 1998, but in recent years their share has fallen to generally 17-19%. Interestingly, the share of aquaculture value accounted for by farm-raised alligators has increased from 7% in 1998 to 13% in 2003.

In the coming years, U.S. aquaculture production is expected to continue to expand, though imports will be a constraint on the rate of growth. In 2001, the U.S. experienced a large increase in catfish imports from Vietnam. The U.S. government subsequently imposed anti-dumping duties, and catfish imports have fallen in response, but fillet prices reportedly have still not recovered. Furthermore, the strategy that was successful (from the standpoint of the U.S. producer) in developing measures to prevent the infiltration of Vietnamese product likely will not be effective in holding back the increasing availability of Chinese product. This is mainly due to the fact that Vietnam grows different species (Basa) than the U.S., but China is growing the same species, so current measures will have little to no effect on Chinese catfish. In addition to these issues for catfish production, around the turn of the millennium, the crawfish processing industry in Louisiana was decimated by an influx of imports and a drop in the state's production due to a severe drought.

U.S. aquaculture producers and processors are likely to face continued competition from overseas producers, particularly in markets that can be served with frozen fillets. The U.S. advantage will continue to be in providing fresh fillets, significantly further processed products and/or branded/differentiated products to the market, particularly involving species for which grain constitutes a substantial portion of the ration.

### **1.4. TRENDS IN MAJOR LOUISIANA CROPS**

The area planted to major row crops and hay in Louisiana (excluding sugarcane) has fallen from 4.9 million acres in 1982 to 2.9 million acres in 2003 – a very substantial 41% reduction. Roughly half of the loss in row crop acreage in Louisiana since 1982 occurred during the national farm financial crisis of the mid-1980s, and almost all of the decline has come from soybean acres.

Excluding soybeans, the area planted to other major row crops in Louisiana has been relatively steady since 1984. A modest reduction in wheat acreage has essentially been offset by a rise in corn acreage. Cotton and rice are both important cash crops grown in Louisiana. In terms of crop area, cotton has on average accounted for approximately 21% of total Louisiana crop area over the past

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five years, while rice has accounted for 17% of Louisiana crop area. Relative to the U.S., Louisiana accounted for only 3.9% of total cotton area in 2003 but 15.1% of U.S. rice area.

### 1.4.1. Cotton

U.S. cotton production currently enjoys a high level of government support under the 2002 Farm Bill. However, the federal government is running a sizable budget deficit, and if future deficits turn out to be severe, Congress might not spare farm programs from spending cuts when the next Farm Bill process is scheduled in 2007. Renewed efforts to cap payments to farmers can be expected if farm-state lawmakers are asked to reduce farm program expenditures, with Southern cotton farmers bearing a disproportional burden. There is also a risk that reductions in government subsidies will be even more severe, due to a recent World Trade Organization (WTO) dispute settlement panel ruling in favor of Brazil in its case against U.S. export subsidies for cotton.

These factors are likely to have a negative impact on U.S. cotton in the coming years.

The U.S. has historically been a major exporter of cotton to the world market, but price supports play a large role in keeping U.S. cotton competitive. From a global standpoint, the U.S. is a high-cost producer, and therefore any reduction of subsidies would be expected to have a negative impact on exports and trade.

On the demand side, the U.S. domestic cotton subsector is likely to continue recent trends, with reduced domestic mill use and expanded textile imports. The five-year forecast calls for an average 2% annual reduction in domestic demand through 2008. At the same time, U.S. exports of raw cotton are projected to hold about flat in a range of 10.5 to 11.0 million bales annually. This outlook for the U.S. does not seem to support a case for an expanding value-added industry in Louisiana.

### 1.4.2. Rice

Like cotton, rice also receives a significant level of price support under the current government policy system. In addition to producer assistance programs, a number of export programs are administered by USDA and the U.S. Agency for International Development (USAID). In the coming five-year period, these export programs could come under additional review if they are found to provide unfair support to U.S. producers.

The U.S. typically exports just under half of the rice it produces, while domestic consumption accounts for just over half of usage. These proportions have held relatively steady as rice production has expanded over time. Rice acreage has been essentially flat, but yield increases over time have resulted in production growth.

Since the mid-1990s, direct food use (i.e., consumption of milled rice that has not been further processed) has been mostly flat. Direct food use will likely play a modest role in any expansion of the domestic consumption of rice in the future. There has been considerable expansion in the processed food use of rice (i.e., beyond milling) over the last few decades; even though the rate of growth slowed after 1994, it still increased by an aggregate 17% through 2001/02. Over the last decade, the most dramatic increase in the use of rice in processing operations has been in pet food.

The domestic outlook for rice suggests continued demand growth in the next five years, with U.S. use forecast to rise by 2% annually, moderately higher than population growth. Several food use categories appear to have solid prospects for growth in the future. The categories include pet foods,

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package mixes, crackers and snacks and, to a lesser extent, cereals. With these supporting sources of demand, there does appear to be some potential for rice-processing growth in Louisiana.

### **1.4.3. Sugar**

Sugar crop cultivation in the U.S. (by growers) and sugar production (by cane mills, raw cane sugar refineries, and sugar beet factories) is economically feasible because the

U.S. sugar program shields domestic growers and processors from the low world market prices that have resulted from production-supporting government policies in a number of countries. The modern U.S. sugar program is based on above-world market price supports and trade barriers to keep imported sugar from undermining U.S. sugar prices.

The outlook for Louisiana's sugar cane industry is clouded by potential risks, in terms of potential trade commitments and sugar consumption growth in the U.S. Domestic sugar consumption peaked in 2000/01, declining at an average annual rate of 1.4% in the last three years. Growth of 1% is expected for 2003/04. It is assumed that sugar consumed by domestic food and beverage industries will grow at an average 0.5% per year through 2008/09, which remains below the population growth rate of just under 1%.

Sugar imports (excluding those for re-export) are seen remaining below 1.532 million strv until 2008/09, by which date it is assumed that a U.S.-Mexico sweetener trade settlement will be implemented. It is expected that this would provide 300,000 metric tons of Mexican sugar access into the U.S. market. Otherwise, there is expected to continue to be a strong commitment by Congress to ensure that sugar will not receive extensive access to the U.S. market in any "free trade" agreements with any individual countries or blocs. Additionally, it is assumed that any significant access under a Doha Round WTO agreement would occur no sooner than five years from now.

The U.S. sugar cane sector enters 2004/05 with a large quantity of "blocked" sugar stocks, and both the Florida and Louisiana industries are forecast to build significant quantities of blocked stocks in 2004/05. This is an important development for the Louisiana industry, which historically has not held stocks.

Sizable cuts in crop area are required for both Florida and Louisiana mills to avoid additional stocks after 2004/05. Sugar cane acreage harvested for sugar production in Louisiana is projected to decline by 16% by 2006/07 and only rebound slightly by 2008/09.

Value-added opportunities are limited. Louisiana sugar, raw or refined, is a commodity, competing with other domestically produced sugar, imported sugar, corn sweeteners, and increasingly popular artificial sweeteners. Low-carbohydrate diet trends appear to be receding, but consumers are expected to remain leery of food with high amounts of added refined sugar. As such, the market for natural semi-refined or milled cane sugar is expected to grow, but its overall size will remain a negligible part of the U.S. sugar market. That specialty segment is reportedly well supplied.

## **1.5. SPECIAL SITUATIONS IN PROCESSING**

### **1.5.1. Pet Food**

Pet food may not involve the vast quantities of feed that the livestock and poultry subsectors do, but the pet food manufacturing industry has been aggressively pursuing enhanced value-added

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processing activities, and it is one of a limited number of agribusiness subsectors that are experiencing significant growth. The number of companion pets owned in the U.S. has risen steadily throughout the 1990s and through 2002. In 1991, there were approximately 62.4 million companion cats and 53.2 million companion dogs in the U.S. By 2002, animal numbers had increased to 76.8 million cats and 60.7 million dogs. Maintaining similar companion pet growth rates as experienced in the 1990s, the U.S. cat population would grow to 91.3 million and dogs to 68.5 million. The implication is that there will need to be an increase in the volume of pet food produced in the U.S. to meet the expected population growth. Additionally, the

U.S. export market for pet foods has shown significant growth during the last decade. Louisiana produces a range of ingredients that are utilized extensively in pet food manufacturing. Two ingredients that are particularly noteworthy are poultry processing byproducts and rice. The consumption of rice (often in the form of brewer's rice) in pet food has increased dramatically over the last two decades, rising to 7.4 million cwt in 2001/02. The average annual increase in volume was 4.6% for the five years ending in 2002/03. According to the Census of Manufacturing, which is conducted every five years, the volume of poultry feather and byproduct meal consumed by the dog and cat food industry nearly tripled from 320,000 tons in 1997 to 915,800 tons in 2002. The value of poultry feather and byproduct meal purchased for use in pet food increased accordingly. A range of other ingredients available in Louisiana is also utilized in pet foods, including fishmeal, soybean meal, sugar solids and grains.

### 1.5.2. Sweet Potato Processing

The national market for fresh sweet potatoes has been fairly well established for some time, though per capita consumption of fresh sweet potatoes declined during the period from 1970 to the mid-1990s and has been flat at best since then. On the other hand, there has not been an extensive effort to develop new, viable value-added markets for potatoes that do not "make the fresh grade." These process grades often receive low prices and end up as inputs into the canning industry.

Consumption of sweet potatoes per capita is highest in the African-American and Puerto Rican ethnic groups. Importantly, more than half of consumption by African-Americans is in the form of processed sweet potato products, while Puerto Ricans consume primarily fresh sweet potatoes. This could provide an advantage to a Louisiana-based processing facility, given proximity to the large African-American population in the South in general and especially along the Delta area following the Mississippi River northward past Louisiana.

Louisiana has a unique advantage in the development of value-added processing of sweet potatoes. The state has already carved out brand awareness for its Louisiana Sweet Potato, and that brand is synonymous with quality in the some consumers' minds. It would appear that the sweet potato processing industry is still small and somewhat fragmented, with the exception of canneries. The assessment of the competitive landscape is that it would be relatively easy for a new processor to enter the market and gain access to distribution channels.

### 1.5.3. Ethanol

The U.S. ethanol industry is in the midst of an unprecedented period of growth, increasing capacity by roughly 70% since the turn of the millennium. Total capacity has now reached 3.4 billion gallons, in response to a combination of:

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- Periods of high margins (i.e., low grain prices fostered by the last two Farm Bills, combined with periodically high energy prices), and
- Impending bans on the usage of the competing fuel additive methyl tertiary butyl ether (MTBE) in California and New York that were implemented at the start of 2004, as well as bans in 17 other states, many of which already have taken effect.

Nineteen states have announced that they would ban the use of MTBE. Most notably, bans went into effect in California and New York at the beginning of this year. Both states use vast amounts of gasoline and contain large metropolitan areas that are required to participate in the Reformulated Gasoline Program and, to a lesser extent, the Oxygenated Fuels Program – programs that were established by the Clean Air Act Amendments of 1990 to combat automotive pollution.

Notably, Baton Rouge was slated to be designated as a non-attainment area for ozone as of June 23, 2004, and was slated to switch to reformulated gasoline. However, city and state government agencies have been fighting this requirement. The 5th U.S. Circuit Court of Appeals temporarily halted the requirement and has sent the issue back to the EPA for a review. Still, to place the Baton Rouge debate in context, the potential size of the ethanol market in the metropolitan area has been reported at 35 million gallons per year, which is slightly less than the capacity of a typical size new ethanol facility.

The omnibus Energy Bill that the U.S. Congress has been attempting to pass in various forms over the last few years contains several provisions related to renewable fuels. It would phase out the usage of MTBE nationally and allow waivers from the oxygenate requirement in the programs established by the Clean Air Act Amendments. Perhaps most importantly it would establish a national Renewable Fuels Standard (RFS). Under this standard, gasoline sold or dispensed to consumers in the U.S. is to contain increasing volumes of renewable fuel, reaching 5 billion gallons by 2012.

A key question is whether a facility in Louisiana could be competitive in the ethanol industry, given that Louisiana is not one of the major corn-producing states. Louisiana's corn production in 2003 was 67 million bushels, whereas a typical 40-million-gallon facility built today requires roughly 15 million bushels. Additionally, Louisiana produced 14 million bushels of grain sorghum in 2003. In addition to indigenous production, millions of bushels of corn pass by the corn-growing area in Northeast Louisiana every year – mainly by barge but also by rail – on their way to export ports. A competitive market exists for barge corn, though it does trade at a higher price than corn in surplus production areas of the Corn Belt, due to transportation costs.

Still, Informa's analysis indicates that well-positioned ethanol facility in a grain-deficit area can be competitive with a segment of Corn Belt facilities, if that facility meets both of two conditions:

- It has access to a strong market for distillers grains, the co-product of ethanol processing; and
- It has low-cost energy, particularly natural gas, compared to the Midwest.

Given the large energy sector in Louisiana, the state certainly meets the second criterion. As for distiller's grains, U.S. exports of distillers grains have been increasing over the years, and proximity to export ports could offset the lack of large-scale cattle production in Louisiana. Additionally, to the extent that gasoline prices remain relatively high, then the value of ethanol will be supported. With the access to low-cost natural gas and export markets for distiller's grain, as well as prospects

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for continued moderate corn prices and relatively strong oil prices, ethanol production in the state may be economically viable.

### 1.6. CONCLUSION

Based on the preceding analysis, the following subsectors merit further consideration for development efforts by LED, as they offer the highest prospects for success:

- Broiler production and processing;
  - Pet food manufacturing;
  - Sweet potato product manufacturing;
  - Further processing of rice;
  - Ethanol;
  - Selective opportunities in aquaculture; and
  - Possibly the bottling of fluid milk.
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For a complete copy of *Value-Added Agriculture Opportunities in Louisiana* published in September 2004 and an updated addendum published in July 2007, contact:

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