

VISION FOR ILLINOIS AGRICULTURE

Vision for Illinois Agriculture: Introduction

For members of Illinois' food and agriculture industries, now is a critical time to be involved in planning for the future. The United States food, agriculture, and bio-based product industries are growing and presenting many new opportunities and challenges. Illinois is in a unique position to leverage its strengths and position itself for a viable and successful future in feeding the world's need for food and fuel. A few of the strengths Illinois possesses include highly productive farmland, strong transportation infrastructure and geographic proximities, extensive research base and supportive research academic institutions, capital availability, access to global markets, proximity to a large consumer base, and potential to partner with other regional states. When aligned and acting in harmony, these strengths allow for a differential advantage for Illinois food and agriculture to thrive in the future.

In an effort to prepare Illinois for future success, representatives of Illinois food and agriculture organizations launched the Vision for Illinois Agriculture. This industry-wide effort is aimed at increasing the competitiveness of Illinois in the global marketplace. To guide the efforts, the planning committee defined the vision statement:

"To be a global leader of profitable food and agricultural production."

Additionally, three goals were established for the future of the Illinois food and agriculture industry. These goals were to:

1. Grow agricultural production and exports to a top three ranking in the United States through the growth of both commodity and value added production
2. Enable food manufacturing growth to a top three ranking in the United States
3. Lead the United States as the alternative bio-based outcomes leader through the adoption of new technologies

Strategic Planning Process and Structure

The Vision for Illinois Agriculture planning committee met over a five month period to identify and prioritize important needs for the state of Illinois and solutions for satisfying these needs. This information created a hierarchy consisting of a vision, goals, and specific strategic themes to guide the initiative moving forward. This document uses the same structure to organize the information into a



single overarching vision supported by goals and foundational strategic themes aimed at creating a competitive advantage for the state. Within the overarching vision reside three specific primary goals, each supported by strategic themes that will act as an umbrella to executable strategies and initiatives for the state to embrace and implement.

These three primary goals will be considered the major components of the state's portfolio for success. Supporting all three goals are five strategic themes that begin to show actionable activities to support the goals.

Exhibit 1 Structure of the Illinois Agriculture Vision



Major Trends for the United States Food and Agriculture Industries

Trend: Influence of consumer-driven food system and declining public confidence in food safety

Today, the food system is a commodity based supply chain motivated by operational efficiency and declining public confidence in safety of food supply. As a result, consumers enjoy a reliable, safe, and relatively low cost food supply. Moving forward, domestic and international consumer demands for product differentiation will drive unique, high value food chains. Numerous opportunities for input suppliers, producers, originators, and processor/marketers will emerge as the food system becomes somewhat more differentiated in the future.

Trend: Emerging global food demands

Increasing global affluence in underdeveloped and developing countries creates new opportunities for agriculture and food products. Demands for higher value products and meats grow when income increases. Higher levels of disposable income in these regions will spur growth of entirely new food supply chains. This effect is multiplied by the expected 50% increase in world population by 2050.

Trend: A strong, but deteriorating transportation infrastructure

The current Illinois food and agriculture production, processing and distribution industries are supported with the world's most efficient transportation infrastructure. However, transportation costs are dramatically increasing due to fuel costs and deteriorating transportation infrastructure. Other countries are investing significant amounts of capital to improve their transportation systems.

Trend: An aging and changing agriculture workforce

As the entire workforce ages, agriculture will need to increase focus and effort on recruiting and retaining top talent. Food and agriculture will need a coordinated effort to leverage the tremendous growth potential in the energy and food sectors to attract the most capable talent. The current seasonal workforce in agriculture consists of an estimated 70% undocumented workers (based on analysis completed by Senator Larry Craig's staff and corroborated by other studies).

Trend: Shifts in producers and production

Farm consolidation continues to place greater land control and purchasing power into fewer hands. Financial pressures motivate farmers to either dramatically increase scale or simplify farming operations and seek off-farm income. Therefore, farmers are becoming increasingly sophisticated and demanding in their input and output business relationships. Moving forward, farmers will pursue a wider range of business strategies to maintain profitability in the future.



Trend: Technology innovation and commercialization

Production, information and bio technologies have enabled significant efficiency and profitability enhancements to food and agriculture industries for many years. Research dollars have shifted tremendously in the past decade from public to private sources. New technology innovation and adoption will help to take US and global food and agriculture industries to the next level of production and distribution efficiency.

Trend: Ethanol and biodiesel industries have experienced substantial growth in the past few years

Government policies are likely to increase demands on the ethanol industry moving forward. Illinois has been and is expected to continue to be an active player in both ethanol and biodiesel. Neither industry segment is without risks associated with global competition, price volatility, government policy changes, and changing sources of feedstock.

Trend: Evolution of production agriculture

Agriculture input manufacturers across multiple segments have and will continue to consolidate. Manufacturers seek increasing profits through economies of scale when new product innovations, and accompanying high gross margins, no longer dominate. Additional market leverage is secured as a result of greater scale and ability to deliver a broader portfolio of business solutions. Growers' and channel partners' needs become increasingly challenging to fill with only one core value proposition; additional scale affords suppliers the opportunities to design and deliver segment specific value propositions.



Vision for Illinois Agriculture

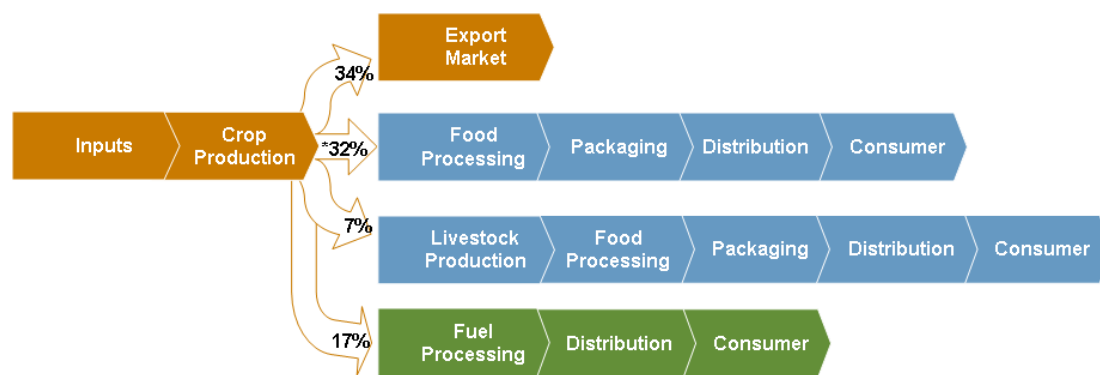
To be a global leader of profitable food and agricultural production

Rationale:

For the scope of this document, the portfolio of Illinois' food and agriculture includes crop export, food processing, and alternative bio-outcomes (animal production is included in the food processing value chain). The variables to be considered when analyzing these major components are the values of each outcome and the percentage allocation of crop production. Our analysis is sensitive to the balance necessary to play to the strengths of the state, but identifies potential opportunities for achieving the vision.

The global market has continued to provide huge opportunity for the United States to maintain its lead in commodity production efficiency. Countries such as Brazil are continuing to research ways to produce grains at a cost advantage to the United States as their supply of grain continues to increase. To offset these efforts, it will become necessary to identify more value added outcomes in the food chain. The following is a high level depiction of one agriculture value chain and the distribution of grain crops (Exhibit 2). It should be noted that inputs into the value chain include agronomy, agriculture equipment, seed, crop nutrients and protection, and financing. Players in these categories will be impacted by an increase in portfolio value through additional sales to producers. In affect, this will increase additional jobs, and improve economies where these input businesses reside.

Exhibit 2 Agriculture to Food/Fuel Value Chain within Illinois (Corn as Example)



**Percent total includes industrial use*

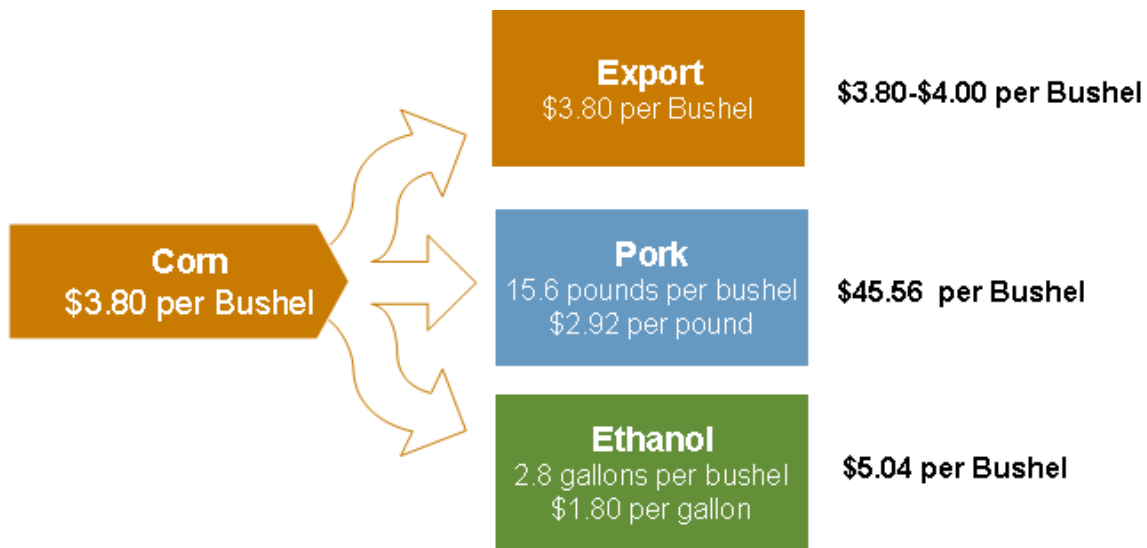
Note: Percentage totals do not sum to 100%. Corn residuals make up approximately 10% of corn the crop. Corn is used as an example of percentage distribution.



Each step in the chain creates additional economic value for the state of Illinois through increased margins from higher value products, additional jobs, and taxes. The magnitude of this value is affected by the value of the product created. For example, if corn is directed to the export market, there will be a greater addition to the gross domestic product, GDP (consumption + investment + government spend + (exports – imports)), as profit per acre increases (vegetables versus corn). Also, as agricultural products are directed through longer in-state value chains there will typically be an increase in economic value for the state (finished pork exports versus corn exports). See Appendix A for more information regarding gross domestic product.

The following diagram gives an example of how value is added in the in-state value chain. The values provided are absolute values and encompass all costs included in the value added processes. It should be recognized that these additional costs are comprised of inputs such as capital equipment investment, labor, and other variable inputs. The example uses one bushel of corn as a basis and shows three scenarios: Export, Pork, and Ethanol (Exhibit 3).

Exhibit 3 Comparison of Agriculture and Food System Value vs. Output (Example)



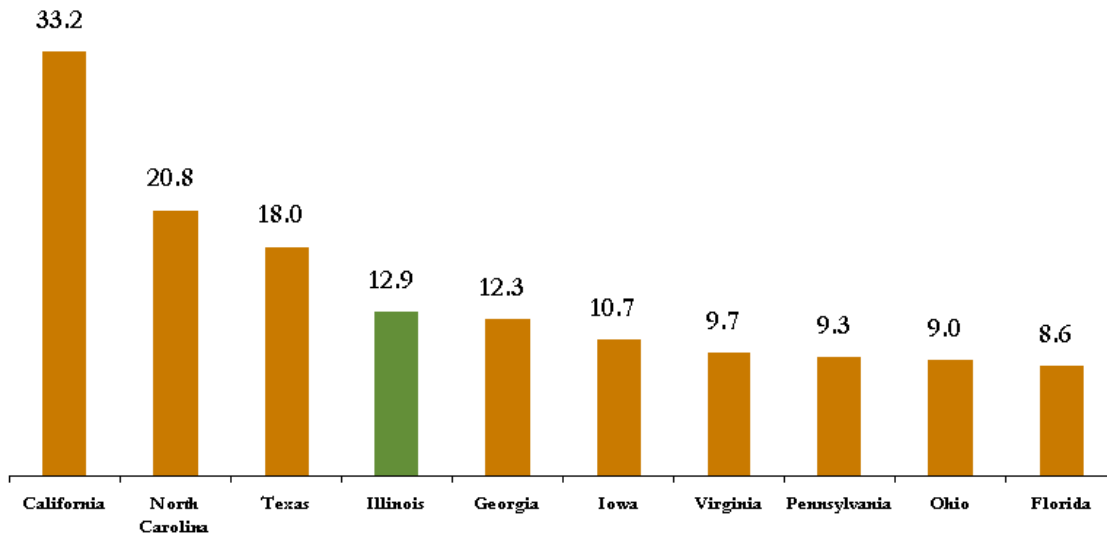
Source: Export – CBOT; Pork – USDA, National Corn Growers Association; Ethanol – RFA, CBOT

As discussed above, a portfolio of outcomes should be created to improve the economy and mitigate the risks of the state. The example above shows that the largest use of crop production, exports, contributes to the lowest value added to the state's gross domestic product. By increasing livestock and alternative outcomes (renewable fuels, higher value crop outcomes, bio-based chemical products) the state will benefit from additional jobs and a higher value use of the finite land.



Illinois was ranked fourth in 2004 GDP when combining the categories of Food Manufacturing and Crop and Animal Production. The GDP of renewable fuels and other higher value crop outcomes is currently not tracked and will need further investigation (Exhibit 4).

Exhibit 4 2004 Total GDP – Food Manufacturing/Crop and Animal Production (\$B)



Source: Bureau of Economic Analysis

Note: Does not include ethanol production

Illinois Agriculture Vision Goals

The following represent the three goals for the future of the Illinois food and agriculture industry:

1. Grow agricultural production and exports to a top three ranking in the United States through the growth of both commodity and value added production
2. Enable food manufacturing growth to a top three ranking in the United States
3. Lead the United States as the alternative bio-based outcomes leader through the adoption of new technologies

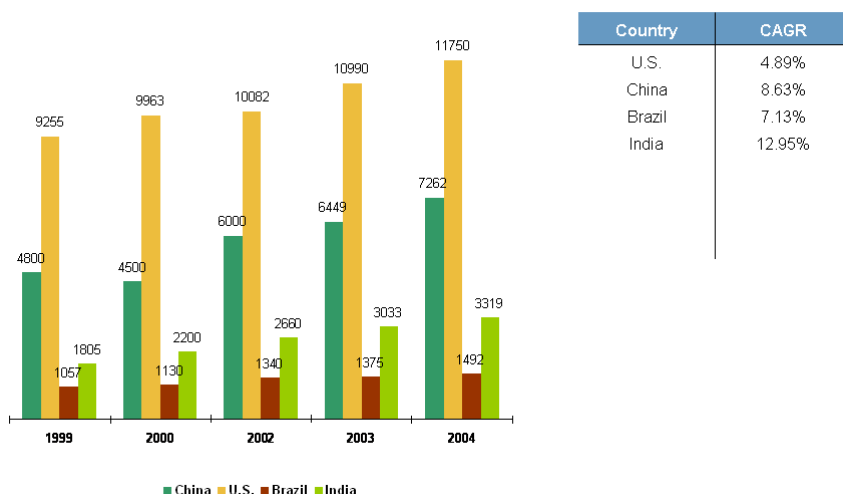


Goal #1: Grow agricultural production and exports to a top three ranking in the United States through the growth of both commodity and value added production

Rationale:

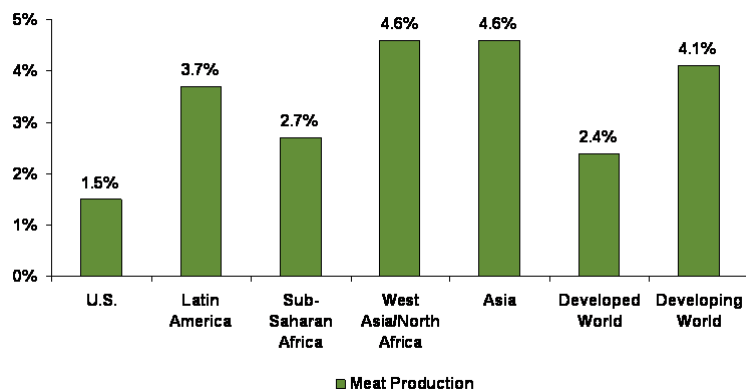
Global trends show developing countries continuing their economic growth and this has resulted in an increased demand for food consumption. Although the United States remains the leader in total GDP, other countries have experienced greater growth rates (Exhibit 5). Historically, as a country's GDP continues to grow, so does its demand for more complex food and thus agricultural inputs (Exhibit 6).

Exhibit 5 GDP Growth (United States Compared to Developing Countries)



Source: FAOSTAT/USDA, Forbes.com

Exhibit 6 2000 Meat Production Growth (Annual Growth Rate)

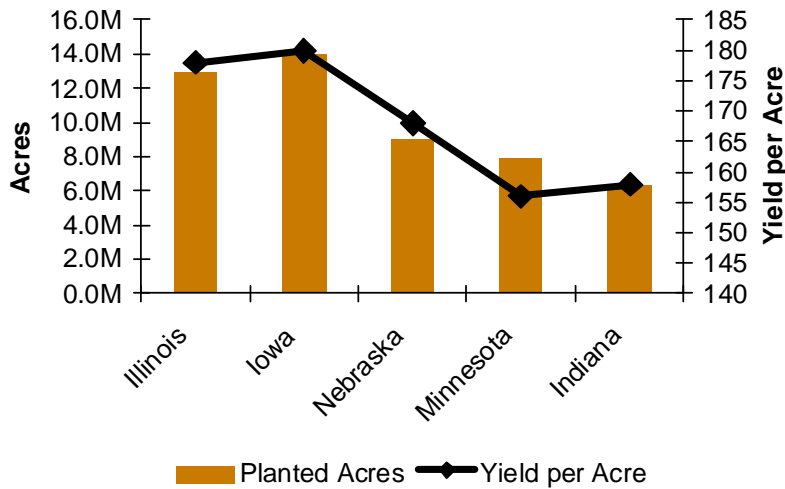


Source: Based on FAOSTAT data (FAO 2000a); FAS/USDA/FAOSTAT



The local agriculture infrastructure of developing countries has not kept up with this growth, which has increased the strain on the international markets. The United States remains one of the most efficient producers of grain products (Exhibit 7) and Illinois stands in the top two of US states with its inherent combination of transportation and fertile land (Exhibit 8). Competition from countries such as Brazil remains strong. However, the costs of inputs, land and labor remain low in Brazil and similar countries, though none can match the fertile land and current delivery mechanism of the United States heartland.

Exhibit 7 2005 Corn Productivity by State



Source: USDA/NASS

Exhibit 8 Production and Transportation Costs to Rotterdam, Netherlands (Soybeans)

	U.S. Heartland 2006	Brazil (Mato Grosso) 2006	Difference U.S. Vs. Brazil
Total Prod costs per bushel (2006)	\$ 5.32	\$ 3.87	\$ 1.45
Transportation costs per bushel (2006)	\$ 0.87	\$ 3.05	(\$ 2.18)
Total cost per bushel	\$ 6.19	\$ 6.92	(\$ 0.73)

Source: ERS/USDA; Swenson and Haugen; Duffy and Smith; Richetti and Augusto; AMS/USDA 2006 Brazil Soybean Transportation Guide



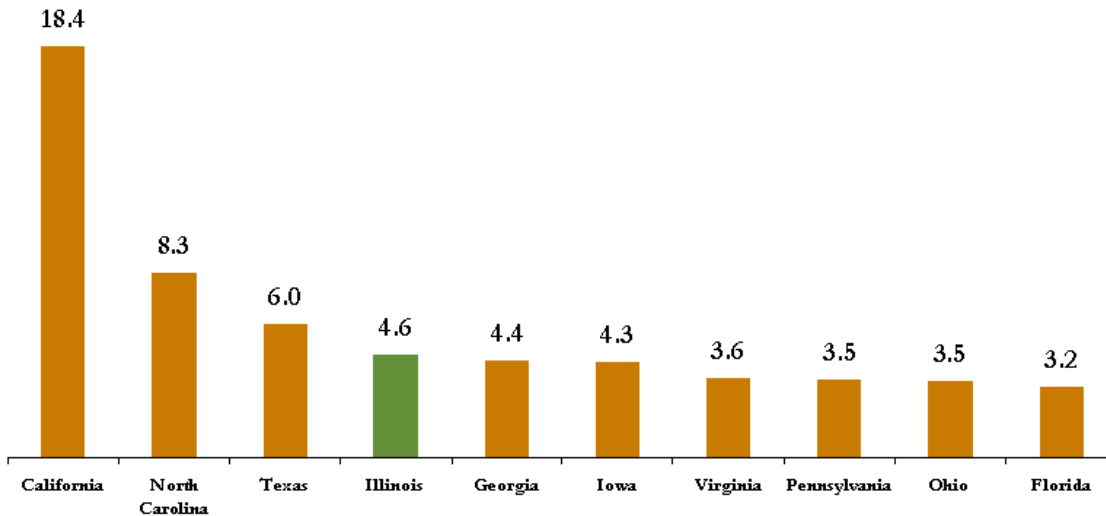
This is not to say Illinois' transportation advantage will continue. Brazil has recognized the opportunity in feeding the growing world. They have started to develop their infrastructure to overcome their higher transportation costs. Investments include:

- \$415MM highway project expected to decrease the cost per soybean bushel up to \$1.00
- Amazon River improvements to improve barge traffic and decrease transportation costs by 75%
- \$173MM rail project to purchase 40 locomotives and 1,000 freight cars over 5 years

To continue to be competitive, Illinois will need to focus on strategies to enhance current strengths. Infrastructure can benefit from modernization and technology to provide low transportation costs. Biotechnology proves to increase productivity, but the cost of doing so needs to be examined and optimized. Labor remains a higher cost and the issue of immigrant labor needs political attention. Additionally, the state needs to find ways to efficiently process inputs and use by-products.

As it stands, Illinois is ranked fourth in the United States in total value of crop and animal production (Exhibit 9). Information for the break out of crop production is not available.

Exhibit 9 2004 Total Value of Crop and Animal Production (\$B)



Source: Bureau of Economic Analysis

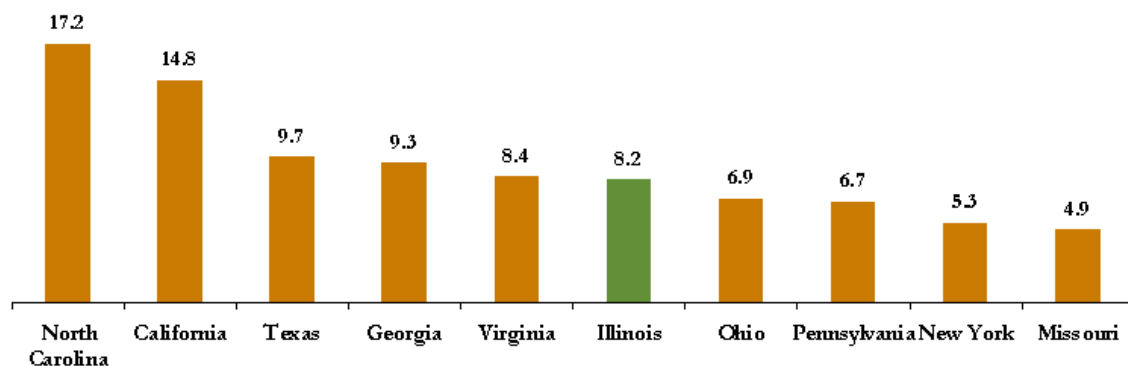


Goal #2: Enable food manufacturing growth to a top three ranking in the United States

Rationale

The state of Illinois is well positioned to create a competitive advantage over other states in the area of food manufacturing. In 2004, the state's GDP was ranked sixth in the United States (Exhibit 10). The number one food manufacturer in the country, Kraft, and six other top one hundred manufacturers are located in the state. The city of Chicago also provides a high demand for food. The definition used for the GDP measurement includes the full continuum of the food value chain, from processing and ingredients to consumer goods. A full explanation of the North American Industry Classification System (NAICS) included in Food Manufacturing is included in Appendix B.

Exhibit 10 2004 GDP – Food Manufacturing (\$B)



Source: Bureau of Economic Analysis



Goal #3: Lead the United States as the alternative bio-based outcomes leader through the adoption of new technologies

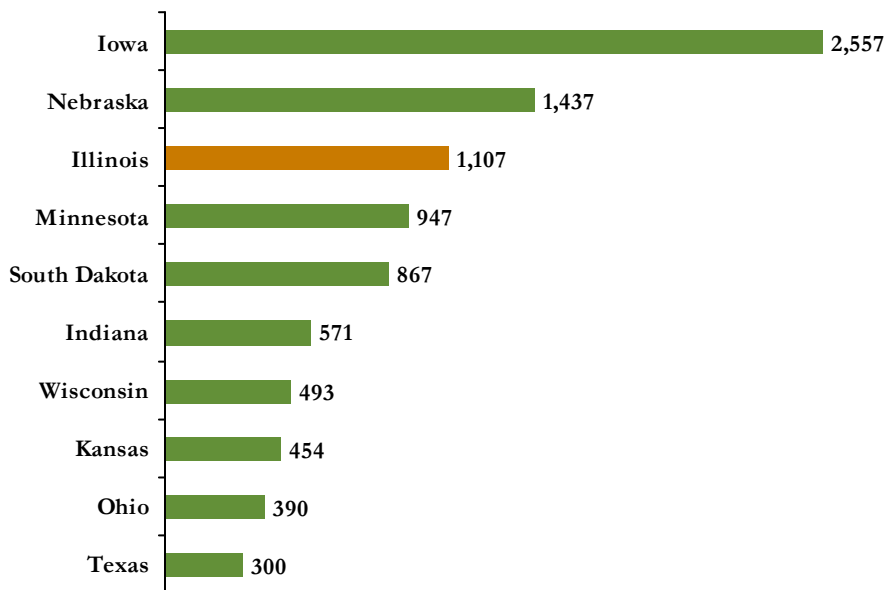
Rationale:

As populations grow in number and affluence there will be an increasing demand for bio-based outcomes such as energy, chemicals, and food. Petroleum depletion and its environmental effects have motivated research and development to reduce and replace its consumption. Food sources will require additional innovation to support the demand of the growing population and its interest in health. These trends demonstrate an opportunity for economic growth in the area of research and innovation in agriculture.

Ethanol

While Illinois has the second largest production of corn, the state is third in ethanol production capacity in the United States (1,107 MGY) behind Iowa (2,557) and Nebraska (1,437). Although the two states are at near parity for corn production, Iowa has twice the ethanol production capacity of Illinois (Exhibit 11).

Exhibit 11 Top 10 Ethanol States by Capacity (Millions of Gallons per Year)



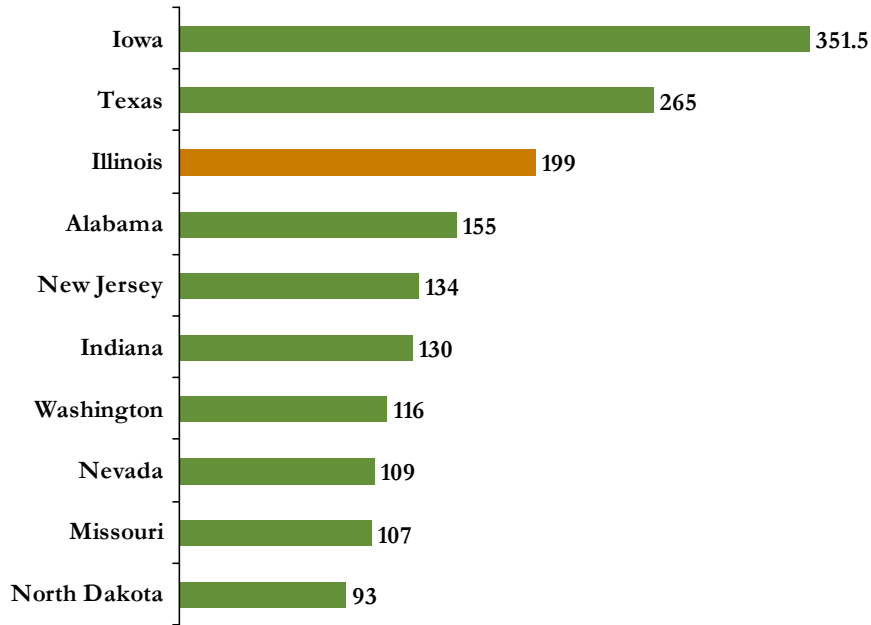
Source: Businessweek Magazine



Biodiesel

Although Illinois is second in soybean production, the state is third in biodiesel production capacity (Exhibit 12). Illinois has an opportunity to further grow biodiesel capacity and thus advance processing soybeans and increasing the state's GDP. Furthermore, six of the top ten states for biodiesel production are not located within the Midwest. This provides Illinois with a competitive advantage of having production close to input supply.

Exhibit 12 Top 10 Biodiesel States by Capacity (Millions of Gallons per Year)



Source: Biodiesel Magazine, September 2007

Strategic Themes

This section includes five strategic themes that command attention to accomplish the established goals. These strategic themes are necessary for improving many industries and are critical for each of the three goals. High priority, next step activities are highlighted in **red**.

1) Attract and Train the Necessary Human and Capital Resources to Support Initiatives Aimed at Growing the Food and Agriculture Industries

1. Develop a collaborative state-wide partnership to provide education and workforce development direction and oversight in the food and agriculture segment
 - a. Create a task force to study and recommend key areas of substantial workforce skills deficit that allows for the development and mastery of essential growth strategies of existing and new programs**
 - b. Encourage expanded leadership programs, such as the Illinois Agriculture Leadership Program and the Ag Leaders of Tomorrow, and develop new leadership development programs**
 - c. Develop a clearinghouse to align business workforce needs and job opportunities with post-secondary graduates
 - d. Develop a stronger partnership between post-secondary education and workforce development to increase funding for food and agriculture workforce development and placement
 - e. Leverage the potential of a diversifying population for the future workforce in the food and agriculture sector
2. Define and deliver effective methods to attract and retain a larger share of highly qualified or top talent in the state's food and agriculture sector
 - a. Create a task force to conduct analysis and better understand key factors in attracting human talent into food and agriculture careers in Illinois and to position Illinois as a destination for top talent**
 - b. Develop a public and private partnership to broaden and promote the image of the food and agriculture sector and career opportunities in Illinois' large metropolitan regions**
 - c. Study and determine the impact of the migration patterns of the Illinois population
 - d. Develop a better understanding of compensation competitiveness verses other states at all job levels in the food and agriculture sector
 - e. Market the advantages of Illinois' vibrant regional partnerships and local communities to attract new talent



- f. Create a working group to address immigration laws and their impact on future workforce needs in Illinois
- 3. Attract capital and investment to the state
 - a. Organize a task force of key firms and institutions with a stake in Illinois' food and agriculture industries to raise initial resources, to develop and strengthen essential connections, and draft a roadmap for what must be done to attract capital and investment to the food and agricultural sector
 - b. Create a state-wide detailed analysis and business plan demonstrating the optimistic outlook of food and agriculture investment opportunities
 - c. Develop creative and novel incentive plans to lower the risk of investment in the state of Illinois
 - d. Identify and collaborate with potential national and international partners to identify and attract investment
 - e. Inventory existing programs and identify new ways to utilize matching funds between private/public sectors

2) Create a Favorable Business Environment to Nurture Economic Development in the State

- 1. Encourage and act on public/private partnerships to communicate and build the case for the importance of food and agriculture to the state's economic development growth
 - a. Inventory critical business climate issues including comparison of best practices in other states through an independent evaluation**
 - b. Create proactive education and communication programs for public officials showcasing the emerging needs and economic impact of the food and agriculture industry to the state of Illinois**
 - c. Provide incentives for innovation and new technology companies within the food and agriculture sector by working with the Department of Commerce and Economic Development (DCEO) and the Illinois Department of Agriculture (IDOA)**
 - d. Establish a forum between agriculture and food manufacturers to discuss emerging consumer issues and needs and identify ways to create stronger, more meaningful relationships between agriculture and the food manufacturing industries**
 - e. Create an interworking system of members in the value chain through association collaboration and information technology



2. Advocate reforms to achieve fiscal integrity and encourage food and agriculture business growth
 - a. **Develop and utilize a government and business code of conduct to create level of trust between communities and business**
 - b. Review, develop, and implement the recommendations for favorable tax reform for the food and agriculture industry
3. Collaborate with non-food and agriculture business groups in a non-partisan fashion to increase awareness of implementing and developing solutions to improve the business climate
4. **Reform and streamline regulatory policy**
 - a. **Create public/private task force to analyze best practices of other states, and recommend process improvement steps**
 - b. Improve transparency and understanding of regulatory policy
5. Optimize natural resources
 - a. Take inventory of existing natural resources and create projections around resource allocation (water, land, air, energy)
 - b. Collaboratively pursue results of projections with government and business and create incentives for optimizing natural resources
6. Create incentives for technology innovation and commercialization
 - a. Build awareness of current program and funding opportunities available to corporations, associations, and communities
 - b. Identify national best practices and promote policy to support those practices
 - c. Expand the role of DCEO or the IDOA to include food and agriculture in the overall economic development of the state
 - d. Encourage establishment of TIF (tax incremental financing) districts in communities in the state
7. Strengthen infrastructure (rail, roads, water, communication)
 - a. Lead and participate in existing multi-state efforts to assess current and future infrastructure needs
 - b. Work collaboratively with non-agriculture industries to improve infrastructure in the state and region
 - c. Address increasing rail, port, and road congestion issues with Chicago to improve infrastructure in the Chicago-land area



3) Improve Community Vitality

1. **Collaborate with USDA Rural Development to launch an annual community vitality forum showcasing best practices and success stories from various parts of the state (inventory similar experiences to eliminate repetition of past efforts)**
2. Establish a Grow Rural Illinois initiative aimed at bringing stakeholders together to develop a long-range plan for ensuring rural and community vitality in the future; focus efforts towards:
 - a. Increasing broadband access
 - b. Improving services and convenience
 - c. Growing entertainment and cultural opportunities
 - d. Advocating for proper community development and planning
 - e. Increasing access to healthcare services
3. Lead efforts in establishing regional and community strategic plans
4. Develop community based mentoring programs
5. Develop and implement tools to support business growth in small communities

4) Advance Intellectual and Innovation Resources

1. Position Illinois as both a product and market innovation center for food and agriculture
 - a. **Identify and support organizations and initiatives charged with complementary innovation strategies (i.e – IBIO's Strategic Plan)**
 - b. Organize and align leadership of innovation organizations to more effectively address initiatives aimed at increasing product and market innovation
 - c. Review past initiatives to determine success levels and lessons learned to better understand the most effective methods for establishing innovation centers
 - d. Support market entry and expansion for food and agricultural innovations that create new or additional value for the sector
2. Encourage technology commercialization in food and agricultural domains
 - a. Examine innovation centers and determine the best practice methods for establishing and incenting current and potential participants
 - b. Provide educational assistance to technology start-ups focused on attaining the necessary funding for creating long lasting businesses
 - c. Develop incentive plans to attract and retain food and agricultural businesses in Illinois
 - d. Develop a process for identifying and analyzing innovation start-ups to effectively support high potential, market changing technologies



3. Attract and retain top R&D and management level talent from a global marketplace
 - a. Create a forum for education, business, and government leaders to discuss and solve problems with attracting talent
 - b. Conduct benchmarking analysis against other states to determine gaps in creating the ideal workplace for top R&D and management personnel
 - c. Create a task force to identify the most effective methods for leveraging large metropolitan areas in the pursuit of attracting top R&D and management talent
 - d. Create incentive packages to keep top graduates who exhibit entrepreneurial and discovery potential

5) Act as a Catalyst in Forming Strategic Partnerships Aimed at Growing and Sustaining the Food and Agriculture Industries

1. Invest in building the current and future leadership capacity of the state
 - a. **Establish a food and agribusiness networking organization with an emphasis on participation from the Chicagoland area**
 - b. **Establish a forum for Midwestern States to discuss and explore areas of common interest (public education, collaboration on federal programs, etc.)**
 - c. Encourage the expansion of character development and leadership programming to secondary education and post-secondary students
 - d. Build a support and networking structure for young and new workers
 - e. Encourage and groom leadership capable of serving on advisory boards and as directors of corporations in the food and agriculture supply chain
2. Build partnerships with agriculture and non-agricultural organizations throughout the world
 - a. Improve and enhance communications to support the Vision for Illinois Agriculture within and outside of the food and agricultural sector at the state, national and international levels
 - b. Constantly evaluate, analyze, and take inventory of opportunities outside of the state that allow for successful partnering
 - c. Reach out to potential partners to better understand specific, frequently encountered issues
 - d. Collaborate with and leverage the strength of the collective Midwestern States to capitalize on international opportunities (raw material sourcing and procurement, market entry, etc.)
 - e. Support and utilize the University of Illinois Extension to help bridge gaps with other industry sectors, e.g. manufacturing



Appendix A Ag-Bio Leadership Summit (ABLS) Strategic Framework for Agricultural Biotechnology in IL

This report summarizes the background, conduct, and output of the Ag-Bio Leadership Summit (ABLS). The ABLS has developed a strategic framework for pursuit of agricultural biotechnology within Illinois.

Background

On April 5-9 of 2006, the Biotechnology Industry Organization, the national association for promotion of biotechnology worldwide, conducted the BIO International Convention in Chicago. BIO 2006 as it was known marked the first time the convention was held in the U.S. Midwest. It previously shifted between the east and west coasts, which contain well-recognized (mostly pharmaceutical-related) biotechnology centers such as Cambridge, the Research Triangle area, the Bay Area, and San Diego. Conference organizers considered bringing the show to the Midwest a major risk; they had serious concerns over whether or not the event could be properly supported in Chicago.

BIO 2006 broke every financial, attendance, programming, and participation record in the event's 14-year history. The BIO organization promptly announced that it would return the conference to Chicago in 2010, the quickest return to a venue in the show's history.

One reason for the enormous success of BIO 2006 was a highly-effective partnership of Illinois' public, private, and academic/research organizations, which together prepared Illinois and the Midwest for the conference. Another important ingredient in its success was a strong showing of agricultural biotechnology products, as well as agriculture-derived industrial and environmental offerings.

Agricultural and ag-based economic sectors offer some of the greatest growth prospects for application of biotechnology's growing toolkit. "Ag-bio", the deployment of biological and related science techniques to industrial processes includes enhanced crop traits, including crop-protective traits, production of renewable energy, improvements/ efficiencies in agricultural processing, environmental protection and remediation, food safety offerings, nutritionals, livestock cloning/transgenics, plastics and other materials, dyes, lubricants, and ag-based pharmaceuticals, among others.

In the course of orchestrating the Illinois community's preparations for BIO 2006, the Illinois Biotechnology Industry Organization, better known as iBIO, learned that although Illinois is one of the



top US agricultural states—measured by revenues, exports, research, varieties of products, advances in biotechnological applications, and financial services—the state possessed no coordinated strategy for exploiting biotechnology in these sectors. The company’s education and research subsidiary, the iBIO Institute, determined to remedy this situation starting in 2007. The project—which became known as the Ag-Bio Leadership Summit—was approved unanimously by the iBIO and iBIO Institute Boards of Directors, which also approved financing of the effort.

The Ag-Bio Leadership Summit (ABLS)

On March 27, 2007, a member of the iBIO Institute’s Board of Directors, Dr. Robert S. Easter, Dean of the University of Illinois’ College of Agricultural, Consumer and Environmental Studies (ACES), convened representatives of a broad based group of leading agricultural organizations for the first meeting of the Ag-BIO Leadership Summit. The Summit’s purpose was to develop an ag-bio strategic framework which can guide the state’s efforts.

Many of the organizations joining the Summit provided representatives at very senior levels, including presidents, vice presidents, chief operating officers, executive directors, directors and others.

Represented organizations included:

ABG (see below)

Archer Daniels Midland

American Farmland Trust

Argonne National Laboratory

BMO Capital Markets Food Group

C-FAR (the Council on Food Agricultural Research)

Dupont-Pioneer

Growmark

iBIO and the iBIO Institute

Illinois Agricultural Leadership Foundation

Illinois Beef Association

Illinois Corn Growers

Illinois Corn Marketing Board



Illinois Dept. of Agriculture
Illinois Dept. of Commerce and Economic Opportunity
Illinois Farm Bureau
Illinois Fertilizer & Chemical Association
Illinois Pork Producers
Illinois Seed Trade Association, Inc.
Illinois Soybeans Association
Illinois State University
John Deere & Company
Monsanto Company
National Corn-to-Ethanol Research Center
Renessen (a company owned by Monsanto and Cargill)
Southern Illinois University
Tate & Lyle
USDA -- National Center for Agricultural Utilization Research
University of Illinois
Valent Biosciences
Western Illinois University

The Institute conducted three facilitated sessions during 2007. The full group met on March 27, a subset of the group met on June 27, and the full group met again on November 27. Between the second and third sessions, about 75% of the participants took part in an on-line prioritizing exercise. At the November session, ABLS participants honed a final draft of the strategy presented here.

During mid-late summer of 2007, the Illinois Farm Bureau, Department of Agriculture, and College of ACES employed ABG, a consulting group, for the purpose of developing a general strategy for agriculture in Illinois, called *Vision for Illinois Agriculture*. Work on this effort began in late summer.

The iBIO Institute saw synergy in the two strategic exercises, and invited additional representatives of the Farm Bureau and ABG to the ABLS November 27 session. Institute representatives, in turn, have been participating in the Vision project, and the iBIO Institute contributed financially to help the Farm Bureau offset its costs.



The *Vision for Illinois Agriculture* plan ultimately incorporated most of the major elements of the ABLs plan and chose many as near-term priorities for implementation. The Vision plan also explicitly called for support of initiatives with complementary innovation strategies, naming the iBIO-led strategic plan, and incorporated the ABLs strategic framework verbatim as an addendum.

Given the strong similarities between the two plans, the overlap in organizations which authored them, and a desire to join forces for optimal implementation of their provisions, the leadership of the two efforts agreed to move forward as one group under the *Vision for Illinois Agriculture* banner.

Mission for Illinois Agricultural Biotechnology

The mission is to make Illinois the world's top ag-bio center. Candidate qualitative and quantitative measures of the mission's achievement include:

- Revenue generated by ag-bio applications (products and services)
- Number of applications (products, services, processes) generated
- Number and dollar value of collaborations by outside entities with Illinois research and private sector organizations
- The dollar value of investments in Illinois ag-bio applications
- Trade and general business press recognition of Illinois as an ag-bio powerhouse

It may be necessary to rely on some of the qualitative (reputation-based) measurements for some time, because development of national, standardized product and company-type categories necessary for tracking the economic metrics lags the rapidly developing range of products and services enabled by biotechnology.

Activities “Necessary and Sufficient” to Fulfill the Mission

The ABLs conferees view the activities outlined in the balance of this report “necessary and sufficient” to achieve the mission. That is:

- Each of the categories of activities is necessary. The mission will not be achieved if any of these activities is omitted.



- These activities are sufficient to accomplish the mission. That is, if all these things are done, the mission will be realized; there is nothing else we need do as a state to become the world's top ag-bio center.

Illinois' Ag-Bio Strategy

The following outline advances five key categories of activity. This strategic framework identifies thirteen specific initiatives supporting the categories; others will no doubt be identified to support the activity categories over time.

A. Develop state and federal public policies which support ag-biotech development

1. Create an ongoing educational campaign for legislators explaining what biotechnology is, and its benefits for the state. Key features of the campaign:
 - Content must include all the players in the Ag-bio space
 - Education must also support the emotional acceptance of Ag-bio – the facts are not enough
 - Focus on both economic benefits and the science of Ag-bio
 - Engage the state delegations as advocates of Illinois programs in the federal agencies
2. Develop and execute a program for improvement of the Illinois business climate and regulatory environment.
3. Develop and press for enactment of a package of state and federal incentives for Ag-bio.

Legislation that

- a) Nurtures and grows Ag-bio startups
- b) Encourages development of innovative products and services in Illinois by large and small companies
- c) Funds Illinois research centers adequately to compete for top talent world wide
- d) Maintains and upgrades the physical infrastructure

B. Build an education / training system which prepares students and workers for high technology work in agriculture and Ag-bio related sectors

4. Determine ag research, producer, processor and other Ag-bio education and training requirements for current and near-term positions



5. Run pilot projects at existing ag sciences schools, universities aimed at:
 - Specifying core learnings, industry interaction, problem solving
 - Costing out scale-up across state
6. Establish an innovation learning standard that promotes students working in collaborative teams for problem solving
7. Secure funds from state, federal, and philanthropic sources for extending, scaling up of successful programs, curricula

C. Team industry, academia, and government to improve the quality and pace of commercializable innovation

8. Develop a “one stop shop” for access to new technologies developed at universities and research centers.

D. Position Illinois as a preferred location for Ag-bio endeavor at all levels: discovery, entrepreneurship, product testing and development, commercialization ramp-up

9. Develop marketing piece based on current initiatives- hardcopy and electronic
 - a) Summarize existing programs and strengths
 - b) Feature Illinois’ broad array of currently available products, existing industry / university collaborations
 - c) Emphasize infrastructure already in place to support future Ag-bio products and services
 - d) Consider developing in key languages of target markets: European, Asian, Latin American
10. Develop PR program w/ common look and feel to marketing piece
 - a) Use for publicizing new government initiatives, new university grants, honors, and news from the private sector
 - b) Program should be international in scope
11. Exploit business meetings as showcases for Illinois Ag-bio
 - a) BIO International Convention
 - b) World Congress on Industrial and Environmental Biotechnology (BIO)
 - c) Midwest Alternative Energy Venture Forum
 - d) Midwest Venture Summit



E. Establish Illinois as the lead/center for the Midwest in pursuing issues of common concern across the region, particularly in public and governmental education.

12. Convene a regional workshop of public, private, and academic/research sector participants to explore common interests
13. Develop a mechanism for regional pursuit of common objectives

Appendix B Gross Domestic Product (GDP)

The monetary value of all the finished goods and services produced within a state in a specific time period, though GDP is usually calculated on an annual basis. It includes all of private and public consumption, government outlays, investments and exports less imports that occur within a defined territory.

$$GDP = C + G + I + NX$$

Where:

"C" is equal to all private consumption, or consumer spending, in a state's economy

"G" is the sum of government spending

"I" is the sum of all the state's businesses spending on capital

"NX" is the state total net exports, calculated as total exports minus total imports. (NX = Exports - Imports)

GDP is commonly used as an indicator of the economic health of a state, as well as to gauge a state's standard of living.

Appendix C Food Manufacturing Defined

NAICS Code	Titles	Examples of Companies with Operations in Illinois
<u>311119</u>	Dog and Cat Food Manufacturing	
<u>311119</u>	Other Animal Food Manufacturing	ADM
<u>311211</u>	Flour Milling	ADM, Bunge, Corn Products International
<u>311212</u>	Rice Milling	
<u>311213</u>	Malt Manufacturing	
<u>311221</u>	Wet Corn Milling	ADM, Bunge, Corn Products International
<u>311222</u>	Soybean Processing	Bunge



NAICS Code	Titles	Examples of Companies with Operations in Illinois
<u>311223</u>	Other Oilseed Processing	Bunge
<u>311225</u>	Fats and Oils Refining and Blending	ADM, Bunge
<u>311230</u>	Breakfast Cereal Manufacturing	
<u>311311</u>	Sugarcane Mills	Corn Products International
<u>311312</u>	Cane Sugar Refining	Corn Products International
<u>311313</u>	Beet Sugar Manufacturing	Corn Products International
<u>311320</u>	Chocolate and Confectionery Manufacturing from Cacao Beans	ADM
<u>311330</u>	Confectionery Manufacturing from Purchased Chocolate	Wrigley, John B Sanfillippo & Sons
<u>311340</u>	Nonchocolate Confectionery Manufacturing	Wrigley
<u>311411</u>	Frozen Fruit, Juice, and Vegetable Manufacturing	OSI Group
<u>311412</u>	Frozen Specialty Food Manufacturing	
<u>311421</u>	Fruit and Vegetable Canning	
<u>311422</u>	Specialty Canning	
<u>311423</u>	Dried and Dehydrated Food Manufacturing	Kraft, Sara Lee
<u>311511</u>	Fluid Milk Manufacturing	Prairie Farms
<u>311512</u>	Creamery Butter Manufacturing	Prairie Farms
<u>311513</u>	Cheese Manufacturing	Kraft
<u>311514</u>	Dry, Condensed, and Evaporated Dairy Product Manufacturing	Prairie Farms
<u>311520</u>	Ice Cream and Frozen Dessert Manufacturing	Prairie Farms
<u>311611</u>	Animal (except Poultry) Slaughtering	OSI Group
<u>311612</u>	Meat Processed from Carcasses	Kraft, Sara Lee, OSI Group



NAICS Code	Titles	Examples of Companies with Operations in Illinois
<u>311613</u>	Rendering and Meat Byproduct Processing	
<u>311615</u>	Poultry Processing	OSI Group
<u>311711</u>	Seafood Canning	
<u>311712</u>	Fresh and Frozen Seafood Processing	OSI Group
<u>311811</u>	Retail Bakeries	
<u>311812</u>	Commercial Bakeries	Sara Lee
<u>311813</u>	Frozen Cakes, Pies, and Other Pastries Manufacturing	Kraft
<u>311821</u>	Cookie and Cracker Manufacturing	
<u>311822</u>	Flour Mixes and Dough Manufacturing from Purchased Flour	OSI Group
<u>311823</u>	Dry Pasta Manufacturing	Kraft
<u>311830</u>	Tortilla Manufacturing	
<u>311911</u>	Roasted Nuts and Peanut Butter Manufacturing	John B. Sanfilippo & Sons
<u>311919</u>	Other Snack Food Manufacturing	
<u>311920</u>	Coffee and Tea Manufacturing	Kraft, Sara Lee
<u>311930</u>	Flavoring Syrup and Concentrate Manufacturing	Wrigley, Corn Products International
<u>311941</u>	Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing	
<u>311942</u>	Spice and Extract Manufacturing	
<u>311991</u>	Perishable Prepared Food Manufacturing	
<u>311999</u>	All Other Miscellaneous Food Manufacturing	Quaker Oats

