

A FOOD AND AGRICULTURE ROADMAP FOR ILLINOIS



MAY 2015





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May 19, 2015 Illinois and the Chicago region are poised to lead the world with solutions to the demands being placed on food and agriculture. Marked shifts in consumer preferences, environmental degradation, climate change, and a growing world population require new thinking and bold approaches in the sector. The farmers, scientists, business and civic leaders, government officials, and entrepreneurs in our state and region are uniquely able to drive forward-thinking strategy and innovation for our nation and the world.

Illinois' diverse food and agriculture sector is one of the largest sectors of the state's economy in terms of financial impact and employment. Working together, the Chicago region and the state have the opportunity to become the leading global center for food and agriculture innovation. FARM Illinois, a multistakeholder collaboration, provides the pathway.

When the Leadership Council of FARM Illinois first convened in September 2014, no one imagined the enormity of the work it would undertake in the ensuing months. The outcome represents the collective thought of the brightest minds on this issue in Illinois: a plan that leverages the state's considerable assets to secure and strengthen its food and agriculture sector for the future. The plan presents preliminary findings and recommendations, with the promise of much more to come in the months and years ahead.

FARM Illinois relied on the dedication and superlative effort of council members and staff, in addition to noteworthy contributions of time and knowledge by numerous participants throughout the planning process. Over the course of nine months, an extraordinary amount of information and comprehensive perspectives were collected from stakeholders across the food and agriculture sector, including farmers, producer associations, processors, distributors, retailers, educators, advocates, regulators, policy makers, government agencies, financial institutions, and more. This plan synthesizes information important to all of these diverse stakeholders and lays out a roadmap to a more vibrant and sustainable future for Illinois.

Illinois' food and agriculture economy is fortified by the depth of our farming roots and the innovation of our industry. By making the food and agriculture sector a priority, we ensure the state remains competitive in the global marketplace, builds local food economies, and preserves a proud and industrious heritage. Beyond that, and even more important, we are firmly convinced that Illinois can and must play a key role to meet the food and nutrition needs of a global population growing to 9 billion or more by midcentury. The FARM Illinois plan provides the tools to make that happen.

Sincerely,

A handwritten signature in black ink, appearing to read "Terry Mazany", written in a cursive style.

Terry Mazany

President and Chief Executive Officer

The Chicago Community Trust

Greetings from the FARM Illinois Leadership Council

As cochairs of the Leadership Council, we are pleased to support the release of the FARM Illinois report. This report offers a comprehensive approach to advance the economic, social, and ecological sustainability of one of Illinois' most prominent sectors and position the state and the Chicago region as the epicenter for global food and agriculture system innovation. We welcome FARM Illinois' transformative recommendations and support an action plan for quick implementation that will sustain the state's economy, inhabitants, and environment.

Gary Ash

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The Chicago Council
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Marc Schulman

President
Eli's Cheesecake Company

Alejandro Silva

Chairman and Chief
Executive Officer
Evans Food Group

Adele Simmons

President
Global Philanthropy
Partnership



The objective of FARM Illinois is to develop a comprehensive strategic plan to enable Illinois and the Chicago region to become the leading global hub for food and agriculture system innovation and ensure their leadership in sustainably meeting the 21st-century challenge of global and local food security.

FOREWORD



I left the office shortly after a FARM Illinois conference call in April and spent the remainder of the daylight hours planting my “early” garden—lettuce, spinach, beets, Swiss chard, mustard greens, and turnips, among others. This must be my 54th or 55th garden. I took up initial responsibilities for the family garden at age ten and except for the four years at Texas A&M and time in the Army have always produced a portion of my food. My wife came from a similar hardscrabble background and during our early lean years we “canned” a fair share of our food supply. By the end of May our garden will grow to more than a quarter acre, and we’ll nurture that along with the fruits on our 40 or so trees.

Why, one might ask, do we do it? I really enjoy very fresh vegetables and fruit. There is nothing like it, and I identify strongly with those who advocate for local foods. And, in part I garden to maintain my legitimacy when I travel to other places around the globe; I can sit down with a group of small-holder farmers and identify with their challenges in ways that I could never do otherwise. My hands are callused in the same places as theirs and I understand their world. And finally and perhaps subtly I’m driven in part as one who grew up one generation removed from the Texas frontier and at the feet of an ancient great uncle who, in his early teen years, joined one of the last cattle drives from southwest Texas to New Mexico. I am a bit of a rugged individualist. I just don’t like to depend on products from California, Chile, or somewhere else in the world for my food.

As much as I love my garden, I thoroughly enjoyed the banana (possibly from Honduras) and the Honeycrisp apple (possibly from Chile) that I regularly have for breakfast. And with that enjoyment comes the realization that the world today is reliant on a food supply that is global in nature, just as the modern world derives its energy supply from an interconnected web that spans the planet. Just as I appreciate and place great value on the power-generating windmill I can just see on my horizon in Urbana, I also depend on the fuel in my tank that may have originated in the Middle East or Venezuela.

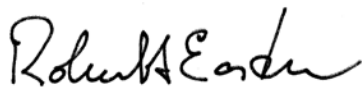
My points are obvious: there is no question that all tiers of the food and agriculture system—local, regional, and global—are essential for our collective wellbeing. The benefits of local food go far beyond great flavor and include societal values and employment opportunities that simply don’t emerge from a sealed container of food delivered from halfway around the world. But, there is a place and need for both local and global.

It is simply reality that there will be a global city where those who manage the internationally integrated food supply will cluster and develop innovative production, processing, marketing, distribution, management, and other technologies. Chicago, drawing on an incredible and unique network of Illinois' assets statewide, has to be that place.

We begin from a position of strength, as Chicago and Illinois have long been leaders of innovation throughout the food and agriculture system. But, to borrow a phrase from Daniel Burnham, this is a time “to make no small plans.” And so FARM Illinois was conceived to do just that, to develop an inspiring, forward-thinking vision and, most important, to make it a reality. This plan lays out a comprehensive set of recommendations centered on coordinated leadership—including the creation of the Illinois Council for Food and Agriculture.

I have been honored to chair the FARM Illinois Leadership Council. Our members worked together for the better part of a year to understand the challenges we face and the strategies that will position Illinois and Chicago as the epicenter of the global, national, regional, and local food and agriculture systems for generations to come.

This plan represents not an end, but a beginning. I look forward to continuing to work alongside stakeholders across the state, including farmers, business owners, manufacturers, researchers, policy makers, and nonprofit leaders, to build on the progress we've made in developing this plan and to bring its recommendations to fruition.



Robert A. Easter

Chairman

FARM Illinois Leadership Council

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EXECUTIVE SUMMARY



Our global food and agriculture system is in the midst of unprecedented change. World population growth has accelerated, rising from 2.5 billion in 1950, to 6 billion in 2000, to a projected 9 billion by 2050, putting the world's food and agriculture system capacity under increasing stress. At the same time, globalization and the development of emerging markets have produced a burgeoning global middle class with more disposable income. Adding to the complex, fluid environment, climate change threatens to disrupt the global and local food supply chains. All of these factors will contribute to a dramatic and sustained increase of agricultural exports of all kinds—including commodities and processed foods—to global markets.

The United States is at the forefront of feeding the world through the production and export of commodity crops, specialty crops, and livestock. States or regions with strong food and agriculture systems stand to benefit if they can significantly and sustainably increase their volume of production and exports to meet growing needs. Illinois has the history and the expertise to thrive in this new era of food and agriculture. Our state is at the center of the Midwest, one of the world's most fertile and productive regions, and is home to Chicago, one of the world's top global cities and a hub for trade. The Chicago metropolitan area, with more than 9 million consumers, is also a strong market driver of enterprise and innovation around local and resilient food systems and a partner for the state in developing the technologies and business models to address new consumer expectations and evolving regulatory standards.

Illinoisans, like others around the United States and the world, are focused on the nutrition, safety, and sustainability of the food they eat. They view the food and agriculture system as a vital component of the fabric of successful rural and urban communities.

Illinois has long been a leader in food and agriculture. However, the state cannot rest on its impressive laurels. The evolution in the global food and agriculture system will require coordinated leadership to foster new understanding, new approaches, and new cooperation if Illinois is to not only remain competitive but also seize the reins and lead that change. Progress could confer a range of benefits for the state's citizens, its economy, and its environment. Furthermore, Illinois has an opportunity to be a leader in reducing food insecurity in Illinois and around the world.

Overcoming entrenched challenges

For Illinois to succeed in the years ahead, several barriers must be recognized and removed. A lack of coordination in the food and agriculture system, particularly between Chicago and statewide food and agriculture interests, impedes the state's ability to unlock the full potential of its assets. The state's current business climate and an absence of policies to promote innovation are obstacles to expansion and investment in food and agriculture. An inadequate pool of qualified workers and a lack of awareness of the food and agriculture system's evolution could undermine its sustainability and long-term growth.

Meanwhile, macrorends—a rising global population, evolving diets, increasing incidence of diet-related diseases, and climate change—will continue to add stress on Illinois' natural resources and its food and agriculture system. The state's mature infrastructure has been hampered by underinvestment and poor coordination, which threatens to restrict the flow of Illinois' food and agriculture products to market. And the low visibility of Illinois' food and agriculture sector is a major obstacle to expansion in existing and new markets, both at home and abroad.

A food and agriculture roadmap for Illinois

Today, Illinois must pursue a shared vision and roadmap to realize the full potential of its unique combination of assets. A defined strategy, greater collaboration, and successful execution will enable stakeholders to exert more influence on policy and investment priorities to ensure the sector has the infrastructure and support to excel.

FARM Illinois (Food and Agriculture RoadMap for Illinois) was conceived to develop that vision and provide a comprehensive roadmap for the state to ensure that all stakeholders—farmers, industry, research institutions, government, and nonprofits—work together in a coordinated fashion to advance the state's interests. This roadmap is the result of a nine-month effort to develop a comprehensive and integrated strategic plan to ensure statewide, sustained, innovative leadership in the broad and diverse food and agriculture sector.

A detailed, aggressive effort will strengthen the preeminence of Illinois and the Chicago region as the epicenter of the global, national, regional, and local food and agriculture systems for generations to come. We have grouped our strategic recommendations into six categories that address the full scope of food and agriculture in Illinois.



Leadership for innovation

Goal

Develop an integrated, statewide, long-term, public-private strategy for achieving the goals of FARM Illinois.

Strategies

Establish the Illinois Council for Food and Agriculture to spearhead ongoing strategic development and implementation of FARM Illinois

Host a Global Food and Agriculture Symposium starting in 2018 to establish Chicago and Illinois as global leaders in addressing 21st-century food and agriculture issues

Promote food and agriculture system innovation through multi-disciplinary research and policy development

Support initiatives to strengthen the roles played by the Chicago region and the State of Illinois in local and regional food and agriculture systems



Business development and entrepreneurship

Spur business growth and investment by making Illinois the preferred destination for food and agriculture companies of all sizes.

Improve the state's business climate to attract, nurture, and retain farmers and food and agriculture companies

Expand financing opportunities and information for farmers and entrepreneurs throughout the food and agriculture system

Develop a succession planning strategy to retain talent and economic activity in farms and communities throughout the state

Establish and enhance food and agriculture clusters across the state

Support entrepreneurs and attract investment to food and agriculture



Workforce and education

Develop a high-quality workforce for food and agriculture and educate Illinois policy makers and the general public on sector innovation.

Ensure that Illinois' labor pool is sufficient to serve the food and agriculture system

Increase the emphasis on food and agriculture in primary and secondary education

Establish a higher-education food and agriculture consortium to attract the best student talent, strengthen programs, and eliminate duplication

Build awareness of Illinois' food and agriculture system



Resource management



Ensure that Illinois is sustainably protecting and managing its natural resources.

Support existing efforts to encourage sustainable production, increase resilience to climate change, and reduce nutrient runoff

Demonstrate demand for existing Federal Farm Bill programs and establish new farm protection programs to preserve farmland

Reduce significant waste streams all along the food and agriculture system value chain, including cutting the amount of food waste from farm to fork

Promote renewable energy development and energy-saving efficiencies

	Goal	Strategies
 <p>Infrastructure</p>	<p>Ensure Illinois' infrastructure is capable of supporting the state's ability to sustainably meet its own needs while being a global leader in food and agriculture.</p>	<p>Improve resource allocation by adopting a comprehensive, intermodal, and multijurisdictional approach to planning and investment</p> <p>Modernize transportation infrastructure vital to agriculture and food distribution</p> <p>Promote the growth and development of the region's transportation and logistics business sector</p> <p>Enable every household and business in the state to connect to broadband service</p>
 <p>Branding and market development</p>	<p>Develop larger and more diverse local, regional, national, and international markets for Illinois' agriculture and food products by raising Illinois' profile.</p>	<p>Raise Illinois' profile to boost domestic markets and increase exports for the full range of food and agriculture products</p> <p>Create an Illinois "brand," inclusive of the food and agriculture system, and implement a strategic marketing plan</p>

Next steps

For some recommendations, such as leadership and coordination, stakeholders can begin working together to achieve meaningful progress in the short term. The creation of a council that will enable statewide coordination and collaboration among the entire food and agriculture sector will be instrumental in achieving the strategies laid out in this plan. In other areas such as infrastructure, the impact of sustained efforts will be felt over the coming years. The state's branding and market development initiatives will amplify improvements across Illinois' food and agriculture system and reinforce its contributions to the state's economy. The proposed council will prioritize steps moving forward, develop performance measures to track and evaluate progress, and update the plan as needed to ensure it remains current and relevant to events that create continuous change. ●

Defining “the food and agriculture system”

For this effort, “the food and agriculture system” is defined as a highly complex and interconnected web of activity encompassing all parts of the value chain in food, agriculture, and related industries, including:

The production of commodity, specialty, and other crops and the raising of livestock

The processing, manufacturing, and retailing businesses and know-how to take food and agriculture products to markets locally and around the world

The physical, business, regulatory, and social infrastructure required to produce and move food and agriculture products to traders, processors, and manufacturers

The financial infrastructure and services required to support development in food and agriculture-related activities

The human capital, science, and policy that support innovative, efficient, and sustainable food and agriculture production

Defining “food and agriculture system innovation”

The food and agriculture system has long been a primary focus of innovation, and Illinois has contributed a steady stream of both revolutionary and evolutionary inventions, from the Illinois and Michigan Canal to the refrigerated boxcar to the mechanical reaper to the Chicago Board of Trade. Today, the need for scale and profit increasingly collides with global and local challenges, including complex supply chains, pressures on natural resources, and issues of health and nutrition, among other things. Technological advances in farm equipment, sensors, IT-enabled advanced-manufacturing techniques, and supply chains are transforming how food is grown, processed, and transported to markets around the world. At the same time, new practices and research such as agroecology are yielding new farming systems that increase biodiversity and reduce the need for inputs. Investing in innovation is thus critical to the long-term success of Illinois’ food and agriculture system.

For purposes of this plan, “food and agriculture system innovation” is defined as the process in which individuals and groups come together to collaborate on new ideas, technologies, and processes that, when successful, spread through communities and societies. Innovations can come in a wide variety of forms, such as products or processes that improve the effectiveness and efficiency of responding to economic, social, or environmental challenges. Others can be institutional, such as enhancing and streamlining business practices and coordination, or in the form of public-private ventures. In all its forms, innovation needs to be inclusive of all stakeholders—including but not limited to farmers; producer associations; local and state government; research, education, and extension institutions; processors and manufacturers; financial institutions; and civic organizations—so that all necessary actors have ownership in the process and share in the outcomes.



OVERVIEW OF FARM ILLINOIS



FARM Illinois (Food and Agriculture RoadMap for Illinois) is the result of a nine-month effort to develop a comprehensive and integrated strategic plan to ensure statewide, sustained, innovative leadership in the broad and diverse food and agriculture sector (see *Defining the food and agriculture system* on [page 11](#)). The plan evaluates the current state of the sector and recommends clear goals, strategies, and policy improvements that will position Illinois and the Chicago region as leaders in food and agriculture system innovation while addressing the overall well-being of the state through the application of economic development, community health, and environmental sustainability.

Historical context for a new strategic plan

FARM Illinois is an outgrowth of the Illinois Food and Agriculture Summit held on October 21, 2013, by the Vision for Illinois Agriculture at the University of Illinois at Chicago. The summit gathered Illinois' top agriculture, business, and economic leaders to discuss and advocate for the implementation of a comprehensive and integrated plan for Illinois and the Chicago region that would ensure Illinois is meeting the 21st-century challenge of global food security.

The Vision for Illinois Agriculture was established in 2008 to develop a plan for growth in the food and agriculture sector of Illinois. The effort outlined goals and significant steps

to address the state's needs, including human and capital resources, business environment, community vitality, innovation, and collaboration. While tackling those issues, it became clear that civic and business communities throughout the state, especially in major metropolitan areas, have common interests with the food and agriculture community. At the same time, the Illinois Local and Organic Food and Farm Task Force, established by the Illinois Food, Farms and Jobs Act of 2007, was “given the duty of developing a plan containing policy and funding recommendations for expanding and supporting a State local and organic food system and for assessing and overcoming obstacles to an increase in locally grown food and local organic food production.”

The FARM Illinois initiative was championed by Chris Kennedy, former chairman of the Board of Trustees of the University of Illinois. In early 2014, FARM Illinois became a much broader effort than either of the earlier initiatives when The Chicago Community Trust, the Illinois Farm Bureau, and Kinship Foundation partnered together. Envisioning a strategic plan that encompassed the entire food and agriculture sector—linking local and global markets, urban and rural communities—this partnership provided the support and encouragement needed to establish and promote FARM Illinois as the future vision for food and agriculture. The Chicago Community Trust served as the secretariat for the initiative.

Strategic plan development process

FARM Illinois was overseen by a Leadership Council chaired by Dr. Robert Easter, president emeritus of the University of Illinois. The Leadership Council comprised 39 distinguished leaders with renowned experience in agriculture, international markets, global food security, sustainability, community development, and related issues. Five separate committees were formed to plan content and contribute to a rigorous analysis of the region's strengths and weaknesses, both broadly and in-depth. The committees focused on:

- **Innovation and education**
- **International markets and global food security**
- **Production and supply chain**
- **Sustainability and community/workforce development**
- **Transportation, logistics, physical, and financial infrastructure**

These five committees consisted of members of the Leadership Council as well as more than 100 outside expert stakeholders (see [pages 80–83](#) for a full list of FARM Illinois participants). Collectively, these members touch different aspects of the food and agriculture system, from policy to advocacy, research to industry, and production to consumption. It was the participation of these individuals that enabled FARM Illinois to create a holistic strategic plan.

Over the course of nine months, project management staff worked with these stakeholders as well as other researchers, advisers, consultants, interns, and volunteers to assemble and analyze data, review research findings, and develop and comment on draft goals, objectives, strategies, priority recommendations, and ultimately an action plan and communications strategy to support implementation. More than 20 in-depth committee working sessions were held, and a detailed environmental scan of Illinois' food and agriculture sector was conducted to assess its strengths and weaknesses. The consolidated scan and individual committee meetings acted as a repository of collective thinking that helped frame priority areas and recommendations in the plan. The Leadership Council worked to synthesize these findings and create a roadmap that mirrors the interconnection of stakeholders across the food and agriculture system.

FARM Illinois represents a collaborative partnership among Illinois' food and agriculture producers, civic organizations, businesses, governmental agencies, and universities. This initiative provided an opportunity for these diverse stakeholders to come together at both the Leadership Council and committee levels to critically evaluate the state's opportunities and challenges and create a fully comprehensive and integrated roadmap to propel Illinois and the Chicago region toward a more sustainable future. ●

*Family farmers of the
Liberty Prairie
Foundation's Farm
Business Development
Center in Grayslake,
Illinois*



© Courtesy of Liberty Prairie Foundation

Learn more about the Vision for Illinois Agriculture at
<http://www.illinoisagriculturevision.org/>.

Read the *Local Food, Farm and Jobs* report at
<http://www.agr.state.il.us/newsrels/taskforcereport-outside.pdf>.

Economic, ecological, and social sustainability

Sustainable development is often discussed through three lenses: the economy, the environment, and society. All three elements guided the development of this plan.

With input from stakeholders across the food and agriculture system, FARM Illinois' plan was developed to bolster the state's *economic sustainability*. The food and agriculture sector already makes a huge economic impact in cities, towns, and counties across the state: a recent report by Decision Innovation Solutions found that total production agriculture and related industries accounted for 9.6 percent of Illinois' total output in 2012. The same report found that crop production and processing is responsible for almost 200,000 jobs, while livestock production and processing contributes more than 50,000 jobs. It's clear that these industries provide a base for a large swath of Illinois' economy. As such, the economic sustainability of the state and the future growth of the tax base depend on strengthening the food and agriculture system supply chain.

Ecological sustainability promotes resilience through the strategic use of natural resources and biodiversity while limiting negative environmental effects. Given agriculture's dependence on natural resources, the system requires careful stewardship of Illinois' land and water. Ecological sustainability will help meet future societal needs without compromising the health of ecosystems.

Finally, sustainability is intimately tied to community and social issues, particularly public health and human services. A strong food and agriculture system provides jobs in both urban and rural areas, promotes social equity, fosters education about food, and offers a foundation for current and future generations to build and live healthy lives. City and state officials have a significant role to play in using the food and agriculture system to support *social sustainability*.



Wind turbines in
McLean County



© Courtesy of 1st Farm Credit Services

INTRODUCTION

A historic opportunity for Illinois food and agriculture



Our food and agriculture system is in the midst of unprecedented change. Historically, most food production and processing has occurred in close proximity to markets. As populations urbanized and natural, commercial, and regulatory barriers were reduced, food production and processing moved to the areas that have had comparative advantages, whether nearby or far away. We will continue to see this dynamic, both in developing countries with reasonable production and distribution capacity and in developed economies, where consumer demand for locally produced foods is growing.

At the same time, demand for food produced halfway across the world will also remain strong, supported by transnational supply chains that can move massive amounts of food and agricultural products anywhere in the world thanks to preservation technologies and efficient transport and storage systems. These supply chains are increasingly managed from headquarters located in global cities, which are naturally positioned to optimize natural, technological, and labor resources. Their reliability, however, is increasingly vulnerable to disruption, particularly when global supplies are tight or when the safety of supplies is called into question. In all areas of the world, concerns about the impact of what we eat on human health, the environment, and the resilience of communities will require adaptation across the entire supply chain.

Feeding the urgency of the situation, world population growth has accelerated, growing from 2.5 billion in 1950, to 6 billion in 2000, to a projected 9 billion by 2050—putting the world's food and agriculture system capacity under increasing stress. At the same time, globalization and the development of emerging markets have produced a burgeoning global middle class with more disposable income. The Organisation for Economic Co-operation and Development (OECD) forecasts that the global middle class will increase from 1.8 billion people in 2010 to 3.2 billion by 2020, with 85 percent of this growth occurring in Asia. As wealth increases, these consumers are transitioning from a diet of grains to one that favors animal proteins and processed foods. Despite new investments in production capacity, food technology, farming methods, and equipment, nations will struggle to keep up with rising and changing demand.

The United States is at the forefront of feeding the world through the production and export of commodity crops, specialty crops, and livestock. US food and agriculture exports to China (including Hong Kong)—which receives 20 percent of total US farm exports—reached nearly \$30 billion in 2014, led by soybeans, and exports to other regions have also increased significantly. From 2002 to 2012, US agriculture exports to sub-Saharan Africa grew by more than 200 percent. The US Department of Agriculture (USDA) estimates that from 2012 to 2022, demand in South Asia will increase by more than 80 percent; in sub-Saharan Africa,

\$8.1 billion

in agricultural products exported from Illinois to foreign countries in 2014—**\$4 billion** of which went to three countries

Illinois' growth in international exports has been rapid, with 2014 agricultural and food export value **almost doubling** since 2007.

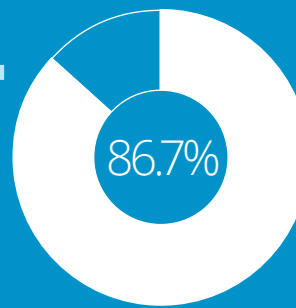


Illinois ranks **5th** among US states by food and agriculture export value

Note: WISERTrade approximation of USDA HS6 commodities.

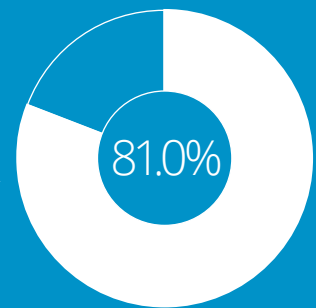
The Midwest region is one of the most fertile areas for agriculture cultivation in the world.

In **2014**
the Midwest
produced



of the US corn crop

&



of the US soy crop

Note: In this report, “Midwest” is defined by the 12 Midwestern states of Illinois, Iowa, Indiana, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

nearly 60 percent; in Southeast and East Asia, 55 percent; in the Middle East, 45 percent; in North Africa, South America, and Central America and the Caribbean, more than 40 percent. As a result, agriculture exports of all kinds—including commodities and processed foods—to these markets will enjoy a dramatic and sustained rise. States or regions with strong food and agriculture systems stand to benefit if they can significantly and sustainably increase their volume of production and exports to meet growing needs. (For more on the moral and economic imperative of addressing world hunger, see sidebar, *Working toward global food security*, on [page 30](#).)

However, success is far from guaranteed: the global market, from both a supply and a demand standpoint, is constantly evolving. The United States remains a leader in corn and soybean exports, but we face heightened competition from both developed and emerging markets, some of which have expanded their production capacity in recent years. China and the European Union lead in pork production (though much of the former’s meat is consumed domestically), and Brazil is a top soybean exporter that will become more competitive as increased investments are made to shore up its poor infrastructure. Meanwhile, China and India are facing increases in domestic consumption and have been investing in agricultural capacity in South America and Africa.

The food and agriculture system brings together the strengths of the state—75.8 percent of which is farmland—with the resources of Chicago as a global city to enable Illinois to be a uniquely strong player in the space, from production through consumption.

Food and agriculture's impact on the Illinois economy

1 of every 17 jobs

9.6% of the state's economic output,
totaling **\$120.9 billion** in 2012

Adding to the complex, fluid environment, climate change threatens to disrupt the global and local food supply chains. Environmental changes reduce access to reliable water sources and energy—two critical inputs that have a direct impact on the cost structure and viability of farming.¹ Throughout the United States, the risk posed by climate change is readily apparent: from 1980 through 2014, the country endured 178 serious weather events, with 16 occurring in 2011 alone—the busiest year on record. The increasing frequency of such events will threaten access to natural resources and overwhelm the capacity of existing infrastructure. Given future climate change scenarios, there is increased urgency for the implementation of practices that promote land and water health.

Why Illinois?

Illinois' food and agriculture system has been a driving force of the state's economy for centuries. From the mid-1800s, when grain milling and meatpacking helped to establish the sector; to the creation of the Chicago Board of Trade; to private-sector leadership in food processing, packaging, and foodservice, Illinois' geographic location and innovation throughout the entire food and agriculture system have enabled the creation of the modern agriculture and food industries of the 20th century.

In the coming years, Illinois must have a proactive plan to respond to the evolving global demand for food and agriculture products as well as Illinoisans' increasing demand for locally produced food, all while balancing threats to our natural resources such as climate change. Most important, as partners in the state's future, Illinois and Chicago need a shared vision to play a leadership role in innovation in the 21st century.

¹ For more detail on how climate change will affect the productivity of Midwest agriculture, see *Risky business: The economic risks of climate change in the United States*, January 2015, <http://riskybusiness.org/reports/midwest-report/executive-summary>.



*Agriculture price
boards on the trading
floor of the Chicago
Board of Trade, 1970s*

Perhaps more than any other sector, the food and agriculture system brings together the strengths of the state—75.8 percent of which is farmland—with the resources of Chicago as a global city to enable Illinois to be a uniquely strong player in the space, from production through consumption. Indeed, Illinois is a leader in the production of agricultural commodities and is where a significant amount of processing, packaging, and distribution occurs; the state ranks first by processed food sales and fifth by food and agriculture exported product value.

At the same time, Illinois has a burgeoning opportunity to supply its own residents with healthy, nutritious food. The state's local and regional food and agriculture systems represent a largely untapped resource; according to a 2010 report by FamilyFarmed.org, of the \$14.6 billion spent annually on fruits and vegetables in Illinois, less than 5 percent was for goods produced in Illinois. Major companies such as Bon Appetit, Chipotle, Roundy's, Walmart, and Whole Foods are competing for a scarce supply of foods produced in Illinois. That demand can be supplied without converting acres currently committed to commodity crops. A 2010 study conducted by the Leopold Center at Iowa State University found that Illinois residents' demand for 28 fruits and vegetables could be met by production on just 69,000 acres, or 0.3 percent of the state's cropland, producing 5,400 jobs and \$988 million in retail sales. Currently, Illinois production for local markets suffers from inadequate infrastructure and insufficient access to investment for expanded production, resulting in missed opportunities for farmers, retailers, and customers.

Illinois' food and agriculture assets

Access to natural resources

The Great Lakes system holds

84%

of North America's fresh water



21%

of the world's surface fresh water

Illinois has

87,110 miles

of **interior streams**, plus natural state borders of **1,089 miles** of Mississippi, Ohio, and Wabash **rivers**

Variation in soil types, climate, and topography across the state allows farmers to produce **a wide variety of commodities, livestock, and specialty crops**



Illinois has **nearly 27 million acres** of farmland; the state ranked **3rd** among US states in 2007 by **total acres of prime farmland**

Superior transportation and logistics system

Rail network is the

2nd largest

in the country

Illinois' **waterways, rail, and highways** remain

critical export channels

for US agricultural commodities

Lake Michigan,

the **second largest** of the Great Lakes by volume, connects Illinois to the Atlantic Ocean and the Gulf of Mexico

Historic farming communities

More than

96%

of Illinois farms are **family-** or **individually** run or in a partnership

12 counties

derive at least

1 in 5 jobs

from agriculture and agriculture-related industries

Agriculture is the **backbone** of communities across the state, from Rockford to Cairo

Chicago

Unique proximity of farmland to a **global magnet for world-class businesses, institutions, and universities**

Major hub for transportation (rail, water, highway, air) that **connects Illinois' food and agriculture system with the rest of the world**

The **largest** concentration of **consumers** in the Midwest

Financial services (including CME Group) and a burgeoning startup community

Food processing and manufacturing cluster is the **second largest** of US metropolitan areas (by employment)



Major universities and research institutions

The **University of Illinois** is one of the nation's

top agricultural research universities

Illinois is a leader in

biotechnology and **agroecology** research and innovation

Other leading research assets include:

Argonne National Laboratory

Fermi National Laboratory

Northwestern University

Southern Illinois University

University of Chicago

USDA's National Center for Agricultural Utilization Research (NCAUR)

A strong manufacturing base

Illinois is **1st** in the nation for **processed food sales**

The volume of exported processed food, worth more than **\$2 billion** per year, places Illinois **6th in the nation**

Food and agriculture processing, support, and input manufacturing account for more than **330,000 jobs** in the state

Illinois is a leader in **agriculture** and **construction equipment** manufacturing and exporting

Industry-leading agriculture and food businesses such as

Archer Daniels Midland
Caterpillar
Deere & Company
Hillshire Brands
Ingredion

Kraft
McDonald's
Mondelēz
Tate & Lyle
WW Grainger

Specialty crops

Illinois is the nation's leading producer of

pumpkins
and **horseradish**



Among the **top ten** states by acreage of **cantaloupes, green peas, sweet corn, and lima beans**

106,000 acres

of farmland are dedicated to specialty crops, which generated **\$470 million in sales** for Illinois farmers in 2012

Illinois is home to at least **50 community-supported agriculture (CSA) organizations** and more than **375 farmers markets**

Note: The 2014 Farm Bill defines specialty crops as "fruits and vegetables, tree nuts, dried fruits, horticulture, and nursery crops (including floriculture)."

Nation-leading agriculture and livestock output (based on 2014 figures)

1st

in the country for soybean production



2nd

for corn production



4th

for hog inventory and sales



Challenges

To realize the potential of its already sizable and globally connected food and agriculture system, Illinois must tackle several challenges within its own borders. Today, Illinois' food and agriculture businesses and farms are not always integrated with the broader business community, especially in metropolitan areas. This disconnect is particularly evident between the production sector across the state and Chicago-based businesses, organizations, and consumers. Specifically, the Illinois food and agriculture sector does not always view Chicago as highly relevant to its business interests, nor does Chicago perceive the state's food and agriculture strength as either a key to its future economic growth or as a significant source of its food. Disparate interests and efforts have meant that some components of the system have rarely come together to collaborate on issues of importance—until now.

A comprehensive understanding of the obstacles facing Illinois' food and agriculture system sets the stage for the recommendations of FARM Illinois.

A lack of coordinated leadership

Illinois faces a systemic challenge: it currently has no overarching entity to coordinate efforts across the food and agriculture system. Several organizations within the state, from general farm and commodity groups to the local and regional food actors, are vocal advocates. Illinois state government agencies often focus on their own constituents and communities rather than on what can be achieved by collaborating on a statewide level. The urban-rural divide exacerbates these issues and creates a significant barrier to pursuing opportunities for state-wide collaboration. This lack of coordination leaves stakeholders—including the myriad government agencies at the state, county, and municipal levels; industry organizations; non-governmental organizations (NGOs); and community development agencies involved in administering programs—to pursue their own agendas.

Illinois has the potential to be a prominent voice in the dialogue around food and agriculture issues both regionally and globally—but it currently lacks a unified platform. Improved coordination across the state is the foundation for translating the state's food and agriculture system assets into a cohesive system that produces cutting-edge research and sector-changing innovation.

Poor business and financial conditions for food and agriculture

Illinois has the reputation, real or perceived, of having an unwelcoming business environment. In general, companies seek consistency and stability to justify long-term investments, and the state's poor fiscal condition, uncertain tax outlook, and regulatory environment are deterrents to investment. In the agriculture and food sector, funding for the relevant state agencies and programs could be further reduced as a result of budget pressures. In addition, existing tax credits and incentives are ineffective or misaligned in promoting growth and investment in food and agriculture. Farmers and business owners often can't take advantage of programs such as the Economic Development for a Growing Economy (EDGE) tax credit,



*A farmers market in
Bloomington, Illinois*

Enterprise Zone tax assistance programs, and tax increment financing (TIF), and the state lacks production- or investment-based tax credits that could attract companies and investment to the state. For example, Illinois' R&D tax credit for companies is similar to every other state's offering and so provides little incentive for investment.

In the pursuit of food and agriculture innovation, Illinois' research institutions are leaders in agricultural sciences and biotechnology—but there's an absence of strategic policies and investments to drive research and commercialization. Global trends have increased opportunities to establish and build agriculture and food companies, but venture-capital firms and startups often lack the familiarity with the food and agriculture system to make investments. From 2006 to 2014, life sciences and agriculture generated just 3 of the state's 122 startups from technology transfer at universities, although these innovations are being shared with food and agriculture businesses through extension and outreach functions.

Illinois has the opportunity to be a hub of food and agriculture business and innovation—but these obstacles must be addressed. If Illinois is to spur business growth, create jobs, and invest in innovation, the state must take concrete steps to become the preferred destination for innovators and companies of all sizes.

Inadequate efforts to educate the public and develop, attract, and retain a qualified food and agriculture workforce

Despite food and agriculture's long-term growth prospects, students and workers are not always aware of the full breadth of careers in the sector. Even individuals raised in farm families can have a limited understanding of the entire food and agriculture system, from commodity, livestock, and specialty crop production to biotechnology, food processing, and global trade. A lack of formal or informal programming at some primary and secondary schools across the state, as well as high teacher turnover, have undercut efforts to expose students to the breadth of food and agriculture careers. And while the University of Illinois

and other four-year schools, as well as some innovative community colleges, have robust food and agriculture programs, other investments are needed to adapt higher-education curriculums to train students on the wide variety of career opportunities that exist in the sector. Further, Illinois' uncoordinated set of workforce development programs are missing an opportunity to match workers of various skill levels, including veterans, the formerly incarcerated, and other nontraditional populations, with good-paying jobs across the state.

Among many groups in the state—communities, county economic development commissions, consumers, venture capitalists, educators, students—there is a general lack of awareness of the full economic impact of food and agriculture. Despite being the largest contributor to the Illinois economy and touching the lives of nearly every resident on a daily basis, agriculture and food-related industries are not heralded in any prominent way.

The food and agriculture system is already a leading economic driver in Illinois. A high-quality workforce and well-informed public will ensure the system's viability for generations to come—but the proper educational programming and initiatives must be put in place today.

Need for enhanced programs, best practices adoption, and long-term planning for resource management

Illinois' farmers are often at the forefront of commitments to protect our environment. However, conservation practices need to be more widely adopted in Illinois. Currently, the state is the number-one contributor of both nitrogen (16.8 percent of the total in the Mississippi watershed) and phosphorus (12.9 percent) delivered to the Gulf of Mexico. According to the Illinois Nutrient Loss Reduction Strategy draft, this “nutrient loss and runoff is a major threat to water quality in Illinois.”² Furthermore, soil is a nonrenewable resource. Soil research has found that developing one inch of topsoil takes at least 100 years,

*An open house at
Patriot Renewable
Fuels, an ethanol
producer in
Annawan, Illinois*

²For more on the strategy, visit <http://www.epa.illinois.gov/topics/water-quality/watershed-management/excess-nutrients/nutrient-loss-reduction-strategy/index>



An assessment by the University of Illinois in support of the Illinois Nutrient Reduction Strategy reports that achieving the necessary reductions in nutrient loading will require adoption rates of nutrient-retention techniques on 10 to 50 percent (depending on practice) of Illinois farmland.

depending on climate, vegetation, and other factors. It is critical that best management practices be implemented to reduce soil erosion in Illinois as much as possible.

The relationship between urban sprawl and the retention of prime farmland also poses a concern. According to 2010 National Resources Inventory estimates compiled by American Farmland Trust, from 1982 to 2007 more than 442,000 acres of Illinois' prime agricultural land was converted to developed land. The federal government and many states have Purchase of Agricultural Conservation Easement (PACE) programs that seek to preserve valuable farmland. Illinois has never implemented its own PACE effort nor a tax credit to protect farmland. Conservation of farmland will therefore require a more concerted and creative effort to reverse this trend in Illinois and address the needs of farmers.

On a broad scale, the impact of climate change on the world as a whole and agriculture in particular has the potential to overshadow all other environmental factors. Already, prolonged droughts in much of the United States have significantly affected agricultural production and increased the cost of fresh water for farm operations. For example, a 2012 drought—one of the worst in recent memory—both decreased Illinois' crop yields and impeded the transport of goods on waterways, with water levels on the Mississippi and Ohio rivers too low to accommodate normal barge traffic. Further, agriculture is a contributor to greenhouse gases, a significant driver of climate change: livestock and manure management accounts for 9 percent of the nation's total methane emissions. As livestock production ramps up to meet global demand, agriculture's impact on climate change will increase.

The future for food and agriculture in Illinois holds tremendous potential, but the state must take a leadership role to ensure that its natural resources are being managed sustainably. The good news is that Illinois is in a prime position to harness the work of producers, businesses, and organizations across the state to make progress on several fronts simultaneously—but the work must escalate now.

Underinvestment in physical infrastructure

Infrastructure is critical for the effective movement of Illinois products to global as well as local markets, and Illinois is fortunate to have a superior transportation and logistics system

that has allowed it to grow as a leader in food and agriculture distribution. However, the state's infrastructure is aging and severely underfunded, putting Illinois at risk of losing its competitive edge to countries such as Argentina and Brazil, who are making large investments in ports, rails, and roads. Whether it is port facilities for export or cold-chain management for specialty crops destined for local markets, Illinois faces a deficiency of logistics assets that is preventing the state from fully meeting consumer demand. There are not enough ships in our ports to handle the ever-increasing volume of grain grown in Illinois and the region, and Illinois' locks, dams, and levees require maintenance and upgrades to keep pace with traffic. Choke points in both trucking and rail impede the movement of food and agriculture products. And roads and bridges are in need of repair in many parts of the state.

Further, some individuals and businesses in both rural and urban areas across Illinois still lack high-speed broadband Internet, and additional investment is needed to support the integration of new, cost-saving technologies into agriculture operations. USDA reports that while 70 percent of farms have adopted broadband—the same proportion as Illinois households—just 53 percent of farms use computers for business purposes. Investments in physical and broadband infrastructure throughout the state could ease delays and congestion, improve the tangible backbone of the food and agriculture system, and benefit individuals and businesses in other industries. Several of these projects are ongoing and will take years; coalescing around priorities will help ensure that Illinois can compete at home and abroad.

Low visibility of Illinois food and agriculture

Illinois' international agricultural exports totaled more than \$8 billion in 2014, but efforts to promote the state globally remain insufficient and fragmented. Illinois is represented by a multitude of state government agencies, led by the Illinois Department of Agriculture (IDOA), which seeks to increase exports and market access for Illinois producers and processors through industry shows and trade missions to select countries. Federal agencies and industry trade organizations such as Food Export Midwest also have similar goals. In all, 59 different organizations champion Illinois commodities and food products. These efforts have failed to distinguish Illinois from its neighboring states, in part because individual organizations lack the funding and resources to fully realize their goals. Greater coordination is clearly needed.

The number of Illinois farms fell from 98,000 in 1982 to 75,000 in 2012. This industry consolidation poses a challenge in the opportunity for off-farm employment in rural communities and a threat to the Illinois farming heritage if not replaced by other economic development.

Within the US market, Illinois has struggled to build a strong brand. While Wisconsin is the dairy state, Michigan is known for fruit, and Iowa is synonymous with pork production, Illinois is not associated with any one product. The state's attempts at branding—Where Fresh Is (for growers of specialty produce) and Illinois Product (geared to Illinois stores and farmers markets)—have been hindered by a lack of coordination and resources.

From expanding market access to branding Illinois' food and agriculture system, the time is right for Illinois to coordinate efforts on the international, national, regional, and local levels. The state must work to develop an overarching brand for the state under which efforts to promote food and agriculture would live.

Pursuing an opportunity for growth

Today, Illinois must pursue a shared vision and roadmap to realize the full potential of its unique combination of assets. A defined strategy, greater collaboration, and successful execution will enable stakeholders to exert more influence on policy and investment priorities to ensure the sector has the infrastructure and support to excel. Furthermore, a robust food and agriculture system in Illinois will have the resources to address food-related issues, from spurring cutting-edge innovation to ensuring food security both at home and abroad. ●

*Corn being stored
at a grain elevator in
McLean County*



Working toward global food security

Tackling world hunger is a moral and economic imperative. Illinois' food and agriculture system can address the challenge of a growing world population with changing diets by increasing production and distribution of safe, nutritious, and affordable food.

According to the United Nations' Food and Agriculture Organization (FAO), approximately 805 million people—11 percent of the global population—are chronically hungry. Despite progress in recent years, certain regions are disproportionately affected; two-thirds of the world's food-insecure population live in Asia, and more than a quarter live in sub-Saharan Africa. Overall, more than 40 percent of Africans are undernourished.

Undernourishment is just one form of malnutrition; obesity rates are also rising, in both developed and developing countries. The World Health Organization (WHO) reports that the global obesity rate more than doubled over the past 35 years. Across the world in 2014, 600 million adults were obese. Obesity is a major factor in the rise of chronic conditions such as cardiovascular disease, diabetes, and some cancers; WHO reported in 2010 that noncommunicable diseases such as these were responsible for more than 60 percent of deaths across the world. These two factors—undernourishment and obesity—constitute a “double burden” of malnutrition.

Food security is broadly defined as ensuring that all people have the physical and economic means to procure food in order to meet their nutritional needs

and live a healthy life. The 1996 World Food Summit outlined four dimensions of food security: availability, access, stability, and utilization. In short, food must not only be available (either through markets or self-production) but also nutritionally sufficient and economically accessible at all times. Achieving this goal usually requires both strong domestic production and imports. Given that the world population is forecast to reach 9 billion by 2050, production capacity will need to increase significantly in Illinois and around the world. Poverty is of course a leading indicator of food insecurity, but other issues—including lack of effective production and distribution systems, political strife, and weather-related events—add complexity to the challenge of ensuring the first three dimensions. The fourth dimension, utilization, reflects the reality that even if safe, nutritious food is available, much of it is wasted, not everyone will eat it, and even those who do may not be able to absorb its nutrients.

FAO has stated that hunger reduction requires an “integrated approach” that includes political commitment and leadership as well as both public and private investments. Illinois' strength in commodity crop and livestock production as well as processed food production are key assets in the fight. The state

must accelerate its work to understand the issues around global food insecurity and how Illinois' food and agriculture system can help meet global demand.

The Chicago Council on Global Affairs has helped lead the effort to bring collaborators together to eradicate world hunger. In April 2015, the Council released its latest report on food security, *Healthy Food for a Healthy World: Leveraging Agriculture and Food to Improve Global Nutrition*. The report offers several recommendations for how the US government, in concert with researchers, industry,

state and local government, and non-profits, can work together to ensure our global food system is more productive, nutritious, and sustainable. The report also calls for "a bipartisan commission to tackle global malnutrition that includes members of Congress, key administration officials, and scientific and business leaders from the agriculture and health sectors." Such collaborative leadership and insight will be invaluable in the fight to end world hunger.

One in nine people across the globe does not have enough to eat.



Green bean harvest
in Mason County

Fostering local and regional food security

Illinois has an opportunity to be a leader in reducing food insecurity in Illinois and across the country.

Food insecurity has become a leading, if not the leading, nutrition-related challenge facing policy makers and program administrators in the United States. The prominence of this challenge is due, first, to the magnitude of the problem. The extent of food insecurity is at an all-time high. In 2013, almost 50 million Americans were food-insecure. Second, not only does food insecurity in and of itself present a challenge, but there are also numerous negative health and education outcomes associated with food insecurity.

In Illinois, nearly 1.8 million residents—13.6 percent of the population—are food insecure. Clients served by Illinois' food pantries and soup kitchens often have to make the choice between food and other necessities such as housing, education, utilities, transportation, and medical care. Furthermore, a 2013 survey by Feeding America found that 61 percent of Illinois households that utilized a food bank reported at least one employed person at some point during the year. The lingering effects of the Great Recession have been one contributing factor to the high food insecurity rates in Illinois.

The causes of food insecurity are multifaceted, but policies aimed at promulgating the availability, access, and

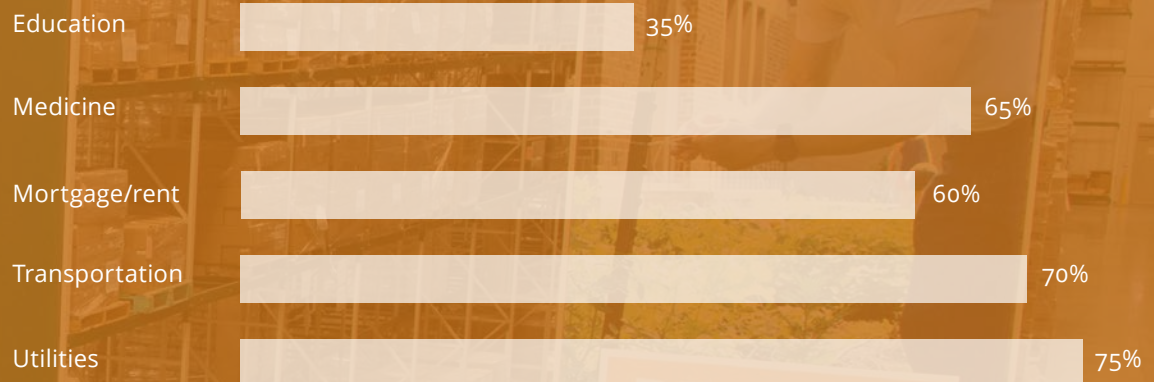
stability of nutritious food in both urban and rural areas must be part of the solution. Specifically, the elimination of “food deserts”—communities with limited access to affordable and nutritious foods—could go far to alleviate issues of malnutrition.

The proposed Illinois Council on Food and Agriculture (see recommendation on [pages 37–38](#)) will be well positioned to lead an effort to address the current state of health and nutrition throughout the state. Its Advisory Council should convene all relevant stakeholders to increase access to safe, healthy, and affordable food. Several strategies have great potential to make a huge impact without new state dollars; two are outlined below.

Connect food-insecure families with existing federal safety net programs. Education on nutrition and awareness of existing programs such as the Supplemental Nutrition Assistance Program (SNAP), school breakfast and lunch, summer feeding programs, after-school programs, and older adult meal programs, among others, can help food-insecure residents get assistance. Nearly all of these programs are underutilized in Illinois, meaning that people are not getting connected to the resources they are eligible for and could benefit from—and also that these

One in six Illinoisans is food insecure.

Client households reporting frequency of choosing between food and other necessities in the past 12 months



Source: *Hunger in America 2014: State Report for Illinois*, Feeding America, September 2014.

federal dollars aren't coming into the state. In the case of the School Breakfast Program, Illinois can do more; schools provided only 36 percent of federally funded breakfasts needed to reach low-income school children in 2013-14, leaving \$90.4 million in funding on the table because some schools do not serve breakfast. The Illinois Commission to End Hunger has made several recommendations to increase participation in child nutrition programs and SNAP.³

Create an agricultural clearance program to reduce food waste. Food banks in Illinois are an invaluable source of food for many hungry families. Often perishable items, especially produce, are the products that the banks have the hardest time stocking. And yet,

in the United States as much as half of the fruits and vegetables grown are left on trees or to rot in fields, often because they are cosmetically imperfect. The missed opportunity grows when costs of wasted land, energy, and water that went into growing that food are taken into consideration. To remedy this problem, Florida, Minnesota, and Ohio have set up agricultural clearance programs to direct surplus agricultural products from farmers, growers, and producers to food banks. A similar program in Illinois would provide money to farmers, growers, and producers at a rate below market to harvest the crops that would have been left in the field. Those products would then be transferred to food banks.

³For more information, see the Commission's 2012 report at <http://www2.illinois.gov/gov/Documents/End%20Hunger/ICEH%20Report%202012%20R.pdf>.



© Courtesy of Farm Cheese Lake Company

FARM ILLINOIS RECOMMENDATIONS

FARM Illinois' strategic recommendations are grouped into six categories that address the full scope of food and agriculture in Illinois. In some categories, such as leadership for innovation, stakeholders can begin working together to achieve meaningful progress in the short term; in others, such as infrastructure, the impact of sustained efforts will be felt over the coming years. The state's branding and market development initiatives will amplify improvements across Illinois' food and agriculture system and reinforce its contributions to the state's economy.

Six priorities of FARM Illinois



LEADERSHIP FOR
INNOVATION



BUSINESS
DEVELOPMENT AND
ENTREPRENEURSHIP



WORKFORCE
AND EDUCATION



RESOURCE
MANAGEMENT



INFRASTRUCTURE



BRANDING
AND MARKET
DEVELOPMENT

LEADERSHIP FOR INNOVATION



Challenge

A lack of coordination in the food and agriculture system, particularly between Chicago and statewide food and agriculture interests, impedes the state's ability to unlock the full potential of its assets.

Goal

Develop an integrated, statewide, long-term, public-private strategy for achieving the goals of FARM Illinois.



Illinois has no shortage of organizations and programs focused on the food and agriculture system. While individual entities—including advocacy groups, state agencies, and research institutions—are making great progress, the opportunity to transform the state, pursue innovation, and elevate Illinois' profile in the local, regional, national, and global food and agriculture space has largely gone unrealized. Instead, efforts are often duplicative or lack the resources on their own to address overarching challenges and resolve issues.

Greater coordination—within state government as well as among government agencies, NGOs, research institutions, and nonprofits—will be critical to the success of FARM Illinois' plan. Stakeholders must work collaboratively so that scarce resources are deployed most effectively. By improving collaboration and visibility, the state will be better able to help stakeholders achieve their goals, provide support to a critical mass of small and midsize businesses, and create a thriving food and agriculture system in Illinois.

FARM Illinois recommends four strategies to coordinate the leadership of Illinois' food and agriculture stakeholders:

1. Establish the Illinois Council for Food and Agriculture to spearhead ongoing strategic development and implementation of FARM Illinois
2. Host a Global Food and Agriculture Symposium starting in 2018 to establish Chicago and Illinois as global leaders in addressing 21st-century food and agriculture issues
3. Promote food and agriculture system innovation through multidisciplinary research and policy development
4. Support initiatives to strengthen the roles played by the Chicago region and the State of Illinois in local and regional food and agriculture systems

Establish the Illinois Council for Food and Agriculture to spearhead ongoing strategic development and implementation of FARM Illinois

Throughout the development of this plan, FARM Illinois has seen firsthand the value of an independent body that can act as a convener for state and local government, industry, philanthropic organizations, and foundations to promote integration and collaboration. Many of the participants of FARM Illinois, despite their shared interests in food and agriculture, had never been in the same room. These connections enable the systemwide collaboration required to unlock the full potential of food and agriculture in the state.

FARM Illinois recommends that Governor Rauner take definitive action to create the Illinois Council for Food and Agriculture. This entity will feature an organizational structure and membership that represents all stakeholder voices in the food and agriculture sector. Its Executive Committee will be composed of a chairperson, 2–3 vice chairs, and 8–10 members from leading companies, NGOs, foundations, institutions, and other individuals representing the food and agriculture sector. This body will be complemented by an Advisory Council of approximately 40 members representing the full diversity of stakeholders. The Illinois Council for Food and Agriculture will work with and designate lead state and local government officials to serve as conveners and, where necessary, as implementers of key recommendations. The council will be supported by 2–3 full-time executive and administrative staff.

The Illinois Council for Food and Agriculture will have several primary goals. It will increase visibility and coordination among state and local public and private agencies focused on food and agriculture. These stakeholders include but are not limited to the Illinois Department of Agriculture (IDOA), the Illinois Department of Commerce and Economic Opportunity (DCEO), the Illinois Department of Natural Resources (IDNR), the Illinois Department of Transportation (IDOT), the Illinois Environmental Protection Agency (IEPA), the Chicago Metropolitan Agency for Planning, the City of Chicago, Cook County, and local agencies. Drawing on the extensive expertise and knowledge of its members, the council will advise state and local governments and private bodies on policy proposals and development as appropriate and necessary.

The council will provide a platform to ensure that the food and agriculture system is recognized as a critical driver of Illinois' economic power and cultural aesthetic. It will also establish relationships with organizations and government agencies outside of Illinois to harness the full potential of the Midwest region. As noted elsewhere in this plan, Illinois already serves as the region's transport hub, so it is well positioned to elevate the Midwest's profile as a major supplier to the world.

Illinois has a rich history of public-private partnerships, and the Illinois Council for Food and Agriculture will draw on this legacy to support its operations. The council will secure funding from industry, foundations, government, and universities to ensure it has the resources to fulfill its mission over the long term.

This organization represents an innovative approach to coordinating activities across the entire food and agriculture system. No other state in the country has established such an organization; many states have entities that focus on a specific food or agriculture sector, but none has established a body with the Illinois Council for Food and Agriculture's sweeping mission and activities.

Host a Global Food and Agriculture Symposium starting in 2018 to establish Chicago and Illinois as global leaders in addressing 21st-century food and agriculture issues

As the global food and agriculture system moves into a period of historic change in both demand and supply, the power to address emerging issues in this shifting landscape lies beyond the reach or authority of any one entity or country. To spur collaboration, innovation, and the exchange of information, the Illinois Council on Food and Agriculture will host the inaugural Global Food and Agriculture Symposium in 2018. This annual gathering will draw governments, companies, universities, foundations, NGOs, and others interested in staying on top of global trends, new approaches, technological shifts, and changing markets and policy regimes. Leaders of industry, research, and trade as well as investors from around the world will convene in Chicago to focus on innovation in food security, sustainability, environment, emerging markets, and other factors that influence food and agriculture systems locally and at a global scale.

To build interest in advance of the inaugural Global Food and Agriculture Symposium in 2018—also the year of Illinois' bicentennial—Chicago will host annual food and agriculture conferences in 2016 and 2017. These events will help establish and strengthen relationships among the Illinois Council for Food and Agriculture, partner organizations, and stakeholders across the state.

To the best of our knowledge, there is currently no comparable regular gathering of all major food and agriculture stakeholders in the United States and perhaps in the world. The closest comparison, the annual World Food Prize in Des Moines, Iowa, is highly successful but focuses largely on agricultural development and attracts participation primarily from concerned governments, universities, and NGOs.

The symposium will deliver several benefits. First, Illinois and Chicago will become known and widely acknowledged as the leading global hub for food and agriculture innovation. By hosting the symposium, Illinois will gain ongoing access to the world's business, scientific, and policy leaders, and the state's companies, universities, and research institutions will forge partnerships with counterparts around the world. Last, the symposium will drive economic growth and job creation for Illinois companies and communities.

No other location in the world is better qualified to host this large and influential annual gathering. Illinois' advantages include one of the densest clusters of farms, companies, universities, and other institutions involved deeply in food and agriculture. Chicago has the

expertise as well as the public and private infrastructure needed to host large and complex international meetings and conventions, including those of organizations such as the National Restaurant Association.

A variety of organizations stand ready to be highly effective partners in organizing such a meeting. These include The Chicago Council on Global Affairs, the leading US think tank on global agriculture and who hosts an annual gathering on food security in Washington, DC; the Institute of Food Technologists, the leading organization of its type in the world; the Illinois Farm Bureau, whose farmer and grower association members sell to the world; the University of Illinois, historically and today one of the top agriculture research organizations in the world; the esteemed business schools at Northwestern University and the University of Chicago; and CME Group, the world's center of price discovery for every major global agricultural commodity. Other potential partners with relevant missions include World Business Chicago, the Chicagoland Chamber of Commerce, industry leaders, other NGOs, and many others.

Promote food and agriculture system innovation through multidisciplinary research and policy development

Creating the optimal conditions for innovation requires many components: the universities and research labs where promising technologies are first discovered; the funding, facilities, and resources from government and industry; and the policies that provide incentives for coordination and collaboration. When these elements are present, innovations can move seamlessly from laboratory and test plot to commercialization and wide adoption.

*Nutritional sciences
graduate student
Krystle Zuniga
prepares samples
for testing*



Illinois has tremendous potential to increase the impact of its research institutions. As a first step, FARM Illinois recommends that the state expand partnerships among universities, government, civic organizations, and private institutions. For example, the state should support research institutions throughout Illinois—including the Illinois Agricultural Experiment Station, Illinois Institute of Technology’s Institute for Food Safety and Health, University of Illinois Extension, and others—to expand their research network, compete for federal research funding, and increase scientific capacity. By working collaboratively with each other, the state, and federal funders (led by the United States Department of Agriculture), these stakeholders can set research priorities and propose policy innovations.

To support research, the state should invest its own resources in Illinois’ scientific capacity to secure more funding from national sources. For example, the 2014 Farm Bill created the Foundation for Food and Agricultural Research, a nonprofit that will utilize \$400 million in public and private funds to support food and agriculture research. The state could also resurrect and support the Illinois Council on Food and Agricultural Research (C-FAR), which was an important contributor in the past to research that applied specifically to problems in Illinois. To secure grants, the state should actively support its research partners in developing coordinated strategies for prioritizing major projects and submitting competitive proposals.

UI LABS, an organization dedicated to creating a platform for research collaboration and the commercialization of promising technologies, has launched two programs since 2014. Its Digital Manufacturing and Design Innovation Institute (DMDII) is supported by a \$70 million grant from the Department of Defense and \$250 million of commitments from industry. Tier-1 partners include Caterpillar and Deere & Company. With more than 500 companies, institutions, and government agencies signed up, DMDII offers a framework for bringing together stakeholders from across the innovation ecosystem. UI LABS’ second project, CityWorks, focuses on developing smart and sustainable urban infrastructure to enable cities to manage their resources more effectively. To capitalize on this progress

Good Food Financing, Innovation, and Trade Conference

Eleven years ago, Illinois-based FamilyFarmed.org launched the first sustainable local food trade show in the United States. Today, hundreds of buyers from Chicago Public Schools, Chipotle, Compass Group, Goodness Greeness, McCormick Place, O’Hare Airport, SYSCO, US Foods, Whole Foods, and many more attend. The Good Food Festival and Conference, held annually in Chicago, includes a Good Food Financing and Innovation Conference, Good Food Trade Show, School Food Summit, Food Policy Conference, and consumer-focused Festival. More than 5,000 people attend to meet, learn, get inspired, and do business with more than 180 vendors.

to date, the state should encourage UI LABS to extend this consortium model to food and agriculture by adopting biosciences as the focus of its next program. Since technology is fundamental to UI LABS' work, the biosciences program would bring together advances in biotechnology, big data, the Internet of Things, and smart products to support food and agriculture innovation. Illinois' food and agriculture companies and organizations offer a robust network for program participation and funding. This effort would also serve as a platform to draw attention to ongoing work by the state's research institutions.

The state should prioritize two other areas for expansion and collaboration: climate-smart agriculture that pulls together disparate parts of research, and landscape-scale implementation of agroecological approaches to cropping systems. As one example, the University of Illinois participates in Green Lands Blue Waters, a multistate initiative coordinating the work of scientists in Illinois, Iowa, Minnesota, and Wisconsin to promote resource-conserving cropping systems, including the development of perennial grain crops and commercially viable cover crops. Illinois could greatly increase its presence in this work by developing more robust public-private partnerships and investing in extension initiatives to help farmers integrate these crops into their farming systems.

Support initiatives to strengthen the role of Chicago and the State of Illinois in local and regional food and agriculture systems

As outlined in the introduction to this plan, Illinois presents a huge market opportunity for local and regional food and agriculture systems. FARM Illinois recognizes the value in facilitating the growth of an Illinois-based local farm and agriculture economy. With the proper support and policies, this emerging market has the potential to revitalize rural and urban communities, create jobs, and drive economic growth by making local farm and food products available to all Illinois citizens. The Illinois Council for Food and Agriculture should synchronize its efforts with the Illinois Local Food, Farms and Jobs Council to ensure that proper policy is in place to support a vibrant Illinois-based farm and food economy.

Similarly, the council should coordinate its activities with existing initiatives, organizations, and conferences such as FamilyFarmed.org's Good Food Financing, Innovation, and Trade Conference; Fresh Taste; the Illinois Farm Bureau; and the University of Illinois Extension to showcase local and regional food production across the state. These conferences and organizations promote the benefits of locally and sustainably produced food and offer a valuable platform for information sharing and collaboration. The council should strengthen support for production of food-grade grains, beans, and emerging field crops for food manufacturers and promote local markets for Illinois farm products.

Local food is also an important source of nutrition for underserved communities. Despite the strength of the state's food and agriculture system, approximately 15 percent of Illinois residents experience food insecurity (see sidebar, *Fostering local and regional food security*,



Ken Dunn plants an urban farm as part of the Resource Center, the largest nonprofit recycling organization in the Chicago area

page 32). Organizations like the Greater Chicago Food Depository prioritize local food procurement, particularly produce. By supporting the development of local and specialty growers, the Illinois Council for Food and Agriculture can increase the broader population's access to locally grown products. FARM Illinois encourages the State of Illinois to launch an agriculture surplus capture program to harvest food waste left in fields and redirect it to institutions, such as food banks and schools, which are equipped to handle perishable fresh fruits and vegetables.

Collectively, these strategies will position Illinois to become a hub for food and agriculture innovation on the local, regional, national, and global levels. Greater coordination will enable the state to unlock the full potential of its assets. The Global Food and Agriculture Symposium and a renewed focus on food and agriculture system innovation will draw the leading minds to Chicago and Illinois, placing the state at the vanguard of addressing the key issues the world faces on food and agriculture. Last, an emphasis on promoting local and regional food and agriculture systems will help Illinois apply innovation and best practices to create a sustainable supply of food and jobs for its residents. ●

BUSINESS DEVELOPMENT AND ENTREPRENEURSHIP



Challenge

The current Illinois business climate and an absence of policies to promote innovation are obstacles to expansion and investment in food and agriculture.

Goal

Spur business growth and investment by making Illinois the preferred destination for food and agriculture companies of all sizes.



With a wide array of foundational assets for Illinois' food and agriculture system, including some of the most fertile soil in the world and infrastructure to reach national and international markets, the state has a huge built-in advantage in attracting food and agriculture companies. To unlock Illinois' full potential, every effort must be made to create a more positive business climate—one that attracts investment and talent, helps existing operations expand, and nurtures innovation in all areas, including biosciences and information technology.

Large-scale producers have vastly different business models, cost structures, customers, and regulatory compliance burdens compared with small and midsize farming operations. The following recommendations aim to address the needs of both segments and ensure that every business, regardless of size, has access to the programs and resources it needs to grow. FARM Illinois seeks to ensure that the benefits of increased economic development and investment are distributed throughout the state and to both rural and urban communities.

The state has no shortage of organizations and programs focused on food and agriculture in Illinois, but their efforts are often duplicative or lack the resources on their own to address specific challenges. By improving collaboration and visibility, the state will be better able to help stakeholders achieve their goals, provide support to a critical mass of small and midsize businesses, and create a thriving food and agriculture system in Illinois.

FARM Illinois recommends five strategies to enhance Illinois' business development and innovation efforts:

1. **Improve the state's business climate to attract, nurture, and retain farmers and food and agriculture companies**
2. **Expand financing opportunities and information for farmers and entrepreneurs throughout the food and agriculture system**
3. **Develop a succession planning strategy to retain talent and economic activity in farms and communities throughout the state**
4. **Establish and enhance food and agriculture clusters across the state**
5. **Support entrepreneurs and attract investment to food and agriculture**

Improve the state's business climate to attract, nurture, and retain farmers and food and agriculture companies

The perception of Illinois as a prime destination for business has been adversely affected by the state's fiscal condition and continued negative media coverage. While addressing these fiscal problems is beyond the scope of this plan, FARM Illinois supports initiatives to improve the state's financial condition. Progress in this area will benefit all industries in Illinois, including food and agriculture.

The regulatory environment also has the potential to improve the business climate for food and agriculture companies significantly. The state can take several actions to increase business investment and enhance production capacity:

1. The state should review current regulations that affect food and agriculture production and permitting for emerging local food business models and streamline and improve existing statutes. Scientists and other experts in the food and agriculture system should be tapped for all efforts to develop and implement regulations.
2. The state should accelerate permitting for farms and new manufacturing facilities. Illinois has made progress over the past several years on speeding the permitting process, but further steps must be taken to avoid unnecessary delays, remove duplicative efforts, and expedite the establishment and expansion of businesses while maintaining protection of natural resources.
3. To support establishment of facilities that meet all necessary regulations, Illinois agencies should work together to educate the public on the economic benefits of investments in food and agriculture and the success of regulations in safeguarding surrounding communities.
4. Illinois agencies should work collaboratively to develop best practices and consistent standards for food labeling and safety that are risk and scale appropriate.

These actions will help to create a positive, welcoming environment for responsible businesses.

Illinois' current tax incentive programs must also be improved to ensure that they are effective in promoting business growth and investment in food and agriculture. The EDGE tax credit is geared primarily to companies that are considering relocating, but it could also be used to support established Illinois agriculture and food companies. Similarly, TIF is routinely used to support investments in infrastructure and attract companies, but it could be used to attract food and agriculture companies or create concentrations of farm operations in close proximity to transport infrastructure. In addition to reassessing existing tax incentives, the state should

develop and implement new production, conservation, or investment-based tax credits for agriculture and food companies seeking to bring jobs to Illinois.

Expand financing for farmers and entrepreneurs to spur innovation throughout the food and agriculture system

Increasing access to capital and financing is critical to support the establishment and expansion of food and agriculture companies and farming operations. The state can pursue policies in several areas to ensure that food and agriculture business ventures can obtain equitable financing, no matter their location or size.

Illinois has a strong financial network that provides support to the state's traditional agriculture sector. For example, the Illinois Finance Authority (IFA) has been successful in providing farmers with revenue bond financing, debt guarantees, and working capital, among other financial support. Since 2004, IFA has distributed \$685 million in loans and financial support to Illinois farmers. And through the Illinois Treasurer's Ag Invest loan program, more than 1,000 financial institutions have provided more than \$1 billion in annual and long-term loans since 1983. Expansion of these types of programs could help supplement financial resources available for underserved members of Illinois' food and agriculture system, including small farmers and business owners.

The state should also support production agriculture lending through comprehensive marketing of a statewide continuum of financial resources. By examining best practices in lending to other industries, the state could extend and significantly expand financing to young, beginning, and small farmers and farm programs. Since many federal programs offer funding, the state should maximize opportunities to tap these sources by educating farmers and food businesses and helping them to navigate the application process.

Cultivating master farmers and agriculture leaders

Illinois has a number of leadership and mentoring programs in food and agriculture throughout the state. For example, the Cultivating Master Farmers program is a unique, two-year mentoring program that provides expert farm and family guidance to young farmers by linking them with a wealth of information from Prairie Farmer's Master Farmers. A decade's worth of participants have heard from a top-notch slate of speakers, taken part in roundtable discussions, gone on industry tours, and developed long-lasting business relationships. And for more than 30 years, the Illinois Agricultural Leadership Foundation (IALF) has been cultivating leaders of American agriculture. IALF's two-year program focuses on developing knowledgeable and effective leaders to become policy and decision makers for the agriculture industry. Participants engage in seminars locally, nationally, and internationally on topics such as business, economics, communication, and leadership skill development.

Develop a succession planning strategy to retain talent and economic activity in farms and communities throughout the state

As US farms have grown larger over the past several decades, the acreage required to maintain a viable commodity farming operation has grown as well. This trend has contributed to rising prices to buy or rent land. Large sections of farmland are often too expensive for small to midsize farm businesses to purchase, and smaller tracts for specialty growers are often difficult to find. Today's farmland prices create a particular obstacle for young and beginning farmers. With farmland selling in excess of \$10,000 per acre for large tracts of land and even higher for smaller tracts in many parts of the state, the amount of capital needed to buy land is very significant. Even with low down payment financing programs available, cash-flowing—particularly for a small or new producer—can be difficult. Illinois must address these obstacles to intergenerational succession and recruitment of new farmers.

To aid in this effort, the state should improve existing tools and develop new ones, including a widely accessible technology platform that offers information about land availability opportunities as well as financial resources for the next generation of farmers. The state could also facilitate the creation of cooperatives, partnerships, and other forms of shared capital assets to enable groups of smaller farm operations to secure the land they need. Several foundations and trusts are positioned to advise the state on the best ways to enable farmers to purchase or obtain usage rights to smaller acreages when they arise.

FARM Illinois endorses land protection strategies that provide land resources for local food production. The land-trust community can play a critical role in creating land protection mechanisms that assure farmland is available and affordable for new and beginning farmers and the next generation. Supporting innovation in financing structures, land protection tools, and creative connection with conservation will be critical as these strategies are implemented. In addition, FARM Illinois encourages communities across the state to include food and agriculture in local economic development and land-use plans. Such initiatives can form part of a state branding program that highlights how people farm in Illinois, as well as what they produce.

The relative size of farmland acreage varies by operation; for commodity growers, large farm operations often are in excess of 1,000 acres or more, while small specialty crop growers can operate on acreages of less than 10 acres.

If implemented, these efforts will combine to help retain talent and economic activity in communities throughout the state.

Establish and enhance food and agriculture clusters across the state

The Chicago metropolitan region is home to a strong food processing and manufacturing cluster that contributes tens of thousands of jobs and billions of dollars annually to the economy. In addition, Rockford is part of a food processing cluster that extends through eight counties in Illinois and Wisconsin. The state should support existing innovation clusters and identify promising areas where new clusters could take root. Chicago FOOD, for example, seeks to bring together leading players in the currently fragmented food processing and packaging industries to enhance facilitation and collaboration around shared R&D, workforce training, technology, and best practices. The state should support the efforts of Chicago FOOD and other similarly focused initiatives to promote and expand clusters.

Clusters are not confined to a state's borders. For example, the Midwest region's food and agriculture system is increasingly interconnected: neighboring states rely on Chicago's global reach and Illinois' robust infrastructure to get food and agricultural products to market. What's more, industry trade groups often market the region's products rather than an individual state's output. Illinois should promote the importance of regional partnerships among its institutions and those in neighboring states to improve multistate outcomes.

Support entrepreneurs and attract investment to food and agriculture

Entrepreneurship in food and agriculture is becoming increasingly technology-centric, including online sourcing and marketing systems, GPS in farm management, biotechnology, food science, big data, and advanced manufacturing. Illinois' network of business incubators, including Chicago's 1871, the Good Food Business Accelerator, EIGERlab in Rockford, the Industrial Council of Nearwest Chicago (ICNC), Peoria NEXT, the University of Illinois Research Park, and University Park at Southern Illinois University, are well positioned to nurture promising food and agriculture startups. While these facilities have been successful in providing entrepreneurs with the facilities and programming to launch new businesses, to date their focus has been primarily on digital or technology-based ventures. Therefore, the state should work with accelerators, incubators, and training development centers to improve visibility, create efficiencies, and maximize resources while also developing and enhancing mechanisms and incentives to draw new food and agriculture entrepreneurs into the system, with a specific emphasis on programs that support new farmers, small-scale operations, and entrepreneurs throughout the food and agriculture system.

In recent years, investors and venture capital firms have awakened to the attractive returns that food and agriculture can deliver in response to growing local and global demand. Venture capital firms are exploring investment opportunities at the intersection of agriculture and technology—a substantial opportunity that Illinois should pursue. Investors are also becoming increasingly aware of opportunities in local and regional food markets. The

According to the US Cluster Mapping Project, a cluster “consist[s] of companies, suppliers, and service providers, as well as government agencies and other institutions that provide specialized training and education, information, research, and technical support.” Clusters are defined by not geography but regional concentration of businesses in the same industry.

Sustainable Local Food Investment Group, for example, is an angel investor network focused exclusively on regional businesses supplying the Chicago metropolitan area. To increase the number of startups in the food and agriculture system, the state should promote investment opportunities by capitalizing on existing conferences, forums, and networks and by touting the innovations being produced by Illinois’ businesses, universities, and research institutions.

The state should also focus on building a network of investors and technical assistance providers to support startups and early-stage companies across the entire spectrum of the sector, from farms to food processors to specialized food production and distribution. CME Group could provide a valuable platform to raise awareness and attract investment dollars. The continued presence of this globally recognized organization makes Chicago a world-leading market center for commodity and agriculture price discovery. To maintain Illinois’ position as a global center of finance and trade, Illinois could use the presence of CME Group to draw attention and promote public-private partnership, development, and expansion across the entire food and agriculture system, including startups and early-stage companies.

To promote Illinois innovation and entrepreneurship, the state should create an annual prize for the best new innovative enterprise in the state’s food and agriculture system. For example, The Chicago Community Trust, in partnership with Kinship Foundation, launched Food:Land:Opportunity, a supply-side local food system initiative that seeks to attract capital to the region’s food system. Food:Land:Opportunity is developing a prize challenge in the hopes of decreasing size as the primary barrier to bringing local and sustainable food to the marketplace. The state should develop a complementary program to recognize companies that demonstrate innovation in operations.

Case studies: Illinois' food and agriculture startups and accelerators

Our food and agriculture system has long been a driver of innovation. Today, the integration of cutting-edge technologies into everything from planting to business management is helping to revolutionize the sector. Several examples demonstrate how established Illinois businesses and startups are embracing the complexity of food and agriculture innovation.

- **Precision agriculture: 640 Labs** helps farmers optimize their operations using GPS, wireless, and mobile technologies to collect detailed information on their crops and machinery. The startup raised more than \$3 million in venture capital funding before being acquired by Climate Corp, the technology unit of St. Louis-based Monsanto, in December 2014—less than two years after its founding. Just a few years earlier, Monsanto acquired Precision Planting, an equipment and technology company based in Tremont, Illinois.
- **Foodservice data: Food Genius** collects, analyzes, and delivers menu data and analytics to help foodservice companies—including restaurants, manufacturers, and distributors—gain insight into menu analytics and how what's available to consumers changes over time. The insight provided by Food Genius can help companies develop new products, customize marketing, and boost sales. Among its clients, Food Genius counts several Illinois and national industry giants such as Arby's, ACH Foods, Coca-Cola, Grecian Delight, Kraft, and US Foods.
- **Business incubation:** Founded in 1967, **the Industrial Council of Nearwest Chicago (ICNC)** provides services to more than 1,000 companies on Chicago's Nearwest side and manages one of the world's largest incubators, with 416,000 square feet located in four buildings. Food companies—including distillers, bakers, coffee roasters, caterers, and specialty food retailers—are the fastest-growing segment of ICNC's clientele. ICNC nurtures early-stage entrepreneurs for an average of three years before they are ready to move to permanent facilities, providing business development, marketing, HR, and financial analysis services through an on-site Small Business Development Center, as well as one-on-one counseling for exporting through an on-site International Trade Center.

*A farmer using
a GPS system in
LaSalle County*



© Courtesy of 1st FarmCredit Services

Harnessing the livestock and specialty crop sectors to create jobs

One of the answers to improving rural economies is to attract and retain livestock and specialty crop production and processing in Illinois. Dairy, egg, poultry, beef, and hog production systems require a year-round labor force and processing plants within a reasonable distance. The processing plants, in turn, require year-round labor. Over the past couple decades, Illinois has sent mixed messages on regulatory and economic development fronts, causing a decline in livestock production and a relocation trend in livestock product processing (meat and dairy).

To restore economic and agricultural vibrancy across the state, the food processing and business communities must be engaged to support efforts to expand capacity of the livestock and specialty crop production sectors. As part of this effort, FARM Illinois urges support of IDOA and IEPA in their efforts to organize public information meetings on livestock siting processes. These organizations should redesign the public information meeting process as described in the Livestock Management Facilities Act to eliminate redundancy while still providing a platform for the public to express their thoughts. FARM Illinois also supports the efforts of the Illinois Livestock Development Group; the Illinois Local Food, Farms and Jobs Council; the University of Illinois Extension; and similar groups that raise awareness and promote the livestock and specialty crop industries as well as identify ways to enhance messaging and education of the public around the importance of these sectors to the Illinois economy.



*Undergraduate
student Angie Boesche
with Angus cattle*

Illinois is already one of the top producers of food and agriculture products in the world, but it hasn't been viewed as the top destination for related companies. The strategies outlined in this section would change that perception by directly addressing the state's shortcomings and creating a favorable environment for established businesses and startups alike to invest and grow. By supporting existing enterprises and attracting new talent, Illinois will further develop its robust food and agriculture system and create a virtuous cycle of economic development and growth. ●

WORKFORCE AND EDUCATION



Challenge

An inadequate pool of qualified workers and a lack of awareness of the food and agriculture system's evolution will undermine the sector's sustainability and long-term growth.

Goal

Develop a high-quality workforce for food and agriculture and educate Illinois policy makers and the general public on sector innovation.



Illinois must develop a holistic strategy to ensure the long-term viability of its food and agriculture system for future generations. In addition to high demand on Illinois' land and the high price to launch a farming operation, the sector is struggling to retain the best and brightest. Illinois needs trained professionals—farmers, scientists, chefs, marketers, and so forth—to address future demands of a growing world population and diminishing supply of natural resources.

The incorporation of information technology, smart-agriculture equipment, and data analytics into food and agriculture will create new career opportunities for qualified workers. In food processing, for example, people with technology skills are in demand—reflected in the 2012 median salary of \$59,630 for food scientists and technologists. The median income for a farmer in 2012 was \$69,300. And yet, despite pockets of exceptional programming throughout the state's higher-education institutions, food and agriculture are not marquee disciplines. Children are also missing out due to a lack of programming at the primary and secondary levels. And the general public and policy makers do not have a firm grasp on the breadth of the food and agriculture system, including the role of technology and product innovation.

Illinois needs to have a firm understanding of the trends, opportunities, and challenges facing workforce development, education, and awareness at all levels; identify appropriate ways to engage the next generation of professionals; and ensure that the public and policy makers are knowledgeable allies in food and agriculture system innovation.

FARM Illinois recommends four strategies to enhance the long-term viability of the Illinois food and agriculture system:

- 1. Ensure that Illinois' labor pool is sufficient to serve the food and agriculture system**
- 2. Increase the emphasis on food and agriculture in primary and secondary education**
- 3. Establish a higher-education food and agriculture consortium to attract the best student talent, strengthen programs, and eliminate duplication**
- 4. Build awareness of Illinois' food and agriculture system**

Ensure that Illinois' labor pool is sufficient to serve the food and agriculture system

In the realm of workforce development, the state can do much to promote the important roles food and agriculture play in local economies—rural, urban, and suburban—as well as the wide variety of job opportunities that exist at all skill levels. Enhanced communication, marketing, and awareness of available workforce development programs and resources should be implemented in a systematic way to connect qualified individuals with companies looking to hire.

Several workforce development assets exist, but coordination is key. The state should raise awareness of employment opportunities in the food and agriculture system and increase the availability of education and training programs. Illinois Pathways, for instance, includes information on courses and careers in food, agriculture, and natural resources. And new farmers receive support from farm internship and training programs such as Chicago FarmWorks, the Farm Business Development Center, Windy City Harvest, the Angelic Organics Learning Center, the University of Illinois Extensions' New Illinois Farmers, and Chicago City Colleges, to name just a few. With the support of Mayor Emanuel, Chicago City Colleges has already taken strides to align their curriculums with the food and agriculture industries and prepare their graduates for careers.

The state should also make a more concerted effort to support programs that engage non-traditional farmers—including women, refugees, veterans, the formerly incarcerated, and early- to mid-career professionals seeking occupation changes—in food and agriculture professional development and training activities. Community colleges across the state, including in Lake and McHenry counties, administer programs that have proved effective in helping these groups find meaningful work in a sector that sorely needs them. Independent organizations such as Growing Home, located in the Englewood neighborhood of Chicago, also offer a model for helping individuals with employment barriers develop the skills they need to pursue careers across the food and agriculture system, from urban growing facilities to wholesalers to restaurants.

Last, FARM Illinois strongly supports the passage of federal legislation to establish an improved program for agriculture guest workers. While much of the agriculture workforce resides in the United States, the demand for labor exceeds supply, and immigrants are important contributors to this workforce. Food and agriculture jobs in Illinois offer immigrants significant economic opportunities—yet the current H-2A visa system is inadequate and unreliable, hindering crop and livestock farmers in their efforts to find, retain, and maintain an adequate, legal, and cost-competitive labor supply. Immigration reform that streamlines the visa application system and workers' ability to secure multiyear visas would help farmers secure adequate labor during harvest and throughout the season while providing greater security to immigrant workers.

To prevent exploitation of migrant and other farm workers, it is essential that federal and state authorities commit to strong enforcement of wage, safety, and health regulations.



© Courtesy of Chicago High School for Agricultural Sciences

The Chicago High School for Agricultural Sciences has the largest FFA chapter in Illinois and the fifth-largest in the nation

Such measures would provide the farm labor workforce with humane and equitable work environments—which, ultimately, will bolster their quality of life and stabilize the supply of needed agriculture workers in Illinois and throughout the United States.

Increase the emphasis on food and agriculture in primary and secondary education

Education in food and agriculture should begin at an early age. School gardens help young people develop food skills, which can lead to interest in food-related careers. To increase interest among students in joining the sector—and in better understanding where our food comes from—the state should ensure that science, technology, engineering, and math (STEM) education programs throughout the state include food and agriculture topics and expand opportunities for youth to learn firsthand about them, both in the classroom and in the community.

In many secondary schools across Illinois, agriculture education has long been an important component of the curriculum. Support has waned in some districts while enjoying resurgence in others. The associated FFA program has evolved over time to provide exceptional leadership development and experiential learning opportunities to high school students. Today, many teachers across the state are leading the charge for the inclusion of food and agriculture curriculum in every level of education. However, such programming is often idiosyncratic, small scale, and hindered by teacher turnover and other factors. The state should focus resources on invigorating food and agriculture education and teacher development from primary through high school, with industry-informed programs that include food, nutrition, and agro-industrial themes. These professional development programs and curriculums should stress inquiry-based learning; help teachers meet new standards, including Common

Girls and women in agriculture

Women make up just over 9 percent of Illinois' principal farm operators—less than the national average of 13.6 percent. However, that figure has actually grown over the past several decades, in tandem with the increasing number of women entering all science, technology, engineering, and math (STEM) fields. Several Illinois programs are making waves as they aim to draw women of all ages into STEM fields, including agriculture.

Stellar Girls, iBIO Institute EDUCATE Center

Aimed at girls in grades three through eight—an age identified as critical to keeping girls engaged in STEM subjects—the Stellar Girls program uses hands-on, collaborative learning to spur girls' interest in STEM careers, including agriculture. The program—which included 15 schools in 2014–15—is aligned with both Next Generation Science Standards (NGSS) and the Common Core Learning Standards (CCLS) and provides activities woven through 20 after-school lessons. The lessons are run by school instructors and community members who are trained during summer professional development sessions by iBIO Institute EDUCATE Center staff.

The goals of the program are to:

- Develop educators' abilities to connect with girls about science;
- Improve girls' curiosity and self-efficacy in science and math;
- Build students' awareness of exciting careers in STEM-based industries; and
- Assess outcomes using quality measurement tools.

Women Changing the Face of Agriculture

The "Women Changing the Face of Agriculture" (WCFA) conference was conceived by the grass-roots organization Illinois Agri-Women in 2010. Organizers invited 120 high school women to join 120 college women for a series of events, including breakout sessions and a career fair focused on occupations in agriculture. The conference has since flourished; this past March, more than 1,000 people flocked to the sixth annual conference. The conference places emphasis on providing young women with direct access to women working in the agriculture industry. WCFA's mission is "Agriculture professionals planting the seed of agriculture careers for young women through career exploration, education, and leadership development."

Children learn about food and agriculture in the "Farmer's Little Helpers" exhibit at the Illinois State Fair



Core Learning Standards (CCLS) and Next Generation Science Standards (NGSS), as required by Illinois law; and reinforce the application of math and science skills to real-world jobs and innovation opportunities.

To maximize the effectiveness of these teacher development programs, they should be integrated with existing agriculture education efforts and create partnerships on a regional basis with local institutions and businesses. For example, the programs could seek the support of some of the world's leading private-sector agriculture manufacturers and processors, all of which have made significant investments in facilities and workforce resources and are willing partners to develop the next generation of the food and agriculture system workforce. The program could also increase the visibility of scientifically established institutions and programs that are conducting research on the integrity and safety of all methods of food and agriculture production.

The state should also do more to emphasize recruitment of girls and minorities into STEM fields—including agriculture—starting in the early grades. Today, women account for 47 percent of the current workforce, but only 25.6 percent of scientists, 13.7 percent of engineers, and 13.7 percent of principal farm operators. And by 2030, Hispanics and African Americans will constitute 31.1 percent of the population in Illinois. Given the current and rising demand for qualified food and agriculture workers, the state should undertake a targeted effort to prepare these individuals for jobs across the system.

As an example, the Chicago High School for Agricultural Sciences (CHSAS) is a proven model for educating students and encouraging interest in food, agriculture, research, and sustainability. The state should evaluate the potential of expanding this model in the Chicago metropolitan area and across Illinois. However, agriculture education should also be part of every classroom in Illinois—not just specialized schools. The state should therefore support agriculture education on a broader scale and include science-based programs on food, nutrition, and agriculture in curriculums and seek support of industry for the effort.

The state can take advantage of several existing initiatives, such as the Illinois Center for Urban Agricultural Education located at CHSAS, an office of the University of Illinois' College of Agriculture, Consumer, and Environmental Sciences (ACES) that supports and counsels high school students from the Chicago metropolitan area on career opportunities in food and agriculture. Many schools benefit from farm-to-school curricula developed by organizations such as Seven Generations Ahead, the Illinois state lead for the National Farm to School Network, and the Illinois Agriculture in the Classroom program, affiliated with the Illinois Farm Bureau and with USDA's National Agriculture in the Classroom program. School enrichment programs are also offered to teachers by Illinois 4-H, a program of University of Illinois Extension. The state could expand opportunities in the Illini Summer Academies offered by Illinois 4-H to include a focus on food and nutrition. And the state can work with organizations such as the Food Marketing Institute; Farm Progress Show; Good Food

Financing, Innovation, and Trade Conference; Institute of Food Technologists; and National Restaurant Association to engage students from both urban and rural areas in disciplines such as culinary arts, engineering, biology, and physics. These efforts should be coordinated with one another and with industry to achieve the best results for Illinois.

Industry support will be critical to expanding food and agriculture education in primary and secondary schools. To support the effort, the state should create an endowment or public-private partnership to expand key programs and institutions that directly educate youth about opportunities in food and agriculture, such as 4-H, FFA, agriculture education programs, school gardens, farm-to-school initiatives, and Illinois Agriculture in the Classroom (IAITC).

Establish a higher-education food and agriculture consortium to attract the best student talent, strengthen programs, and eliminate duplication

Illinois is fortunate to have a statewide network of renowned higher-education institutions. To facilitate the transition of graduates into the food and agriculture workforce, the state must encourage cooperation among Illinois' public and private universities that have food and agriculture programs (see page 57) as well as establish new connections among high schools, community colleges, and universities. Our community colleges system is a key partner; it is the third-largest in the country, with 1.7 million Illinois workers participating in credit courses in the past 12 years. Almost nine of ten Illinois community college graduates live, work, pay taxes, and raise their family in Illinois—a population that, if tapped, could provide the talent needed to sustain the state's food and agriculture system in the years to come.

Last, while many of the agriculture programs across the state are producing strong outcomes for graduates, the vast majority of Illinois' post-secondary students aren't aware of the opportunities available to those seeking a career in food and agriculture. The state should thus coordinate and expand existing learning tools and programs—including Agriscience Learning Kits (University of Illinois Extension), the Green Guide (Richland Community College), and the Facilitating Coordination in Agricultural Education (FCAE) project—that teach students about potential careers in food and agriculture through grants, curriculum resources, teacher professional development, and technical assistance.

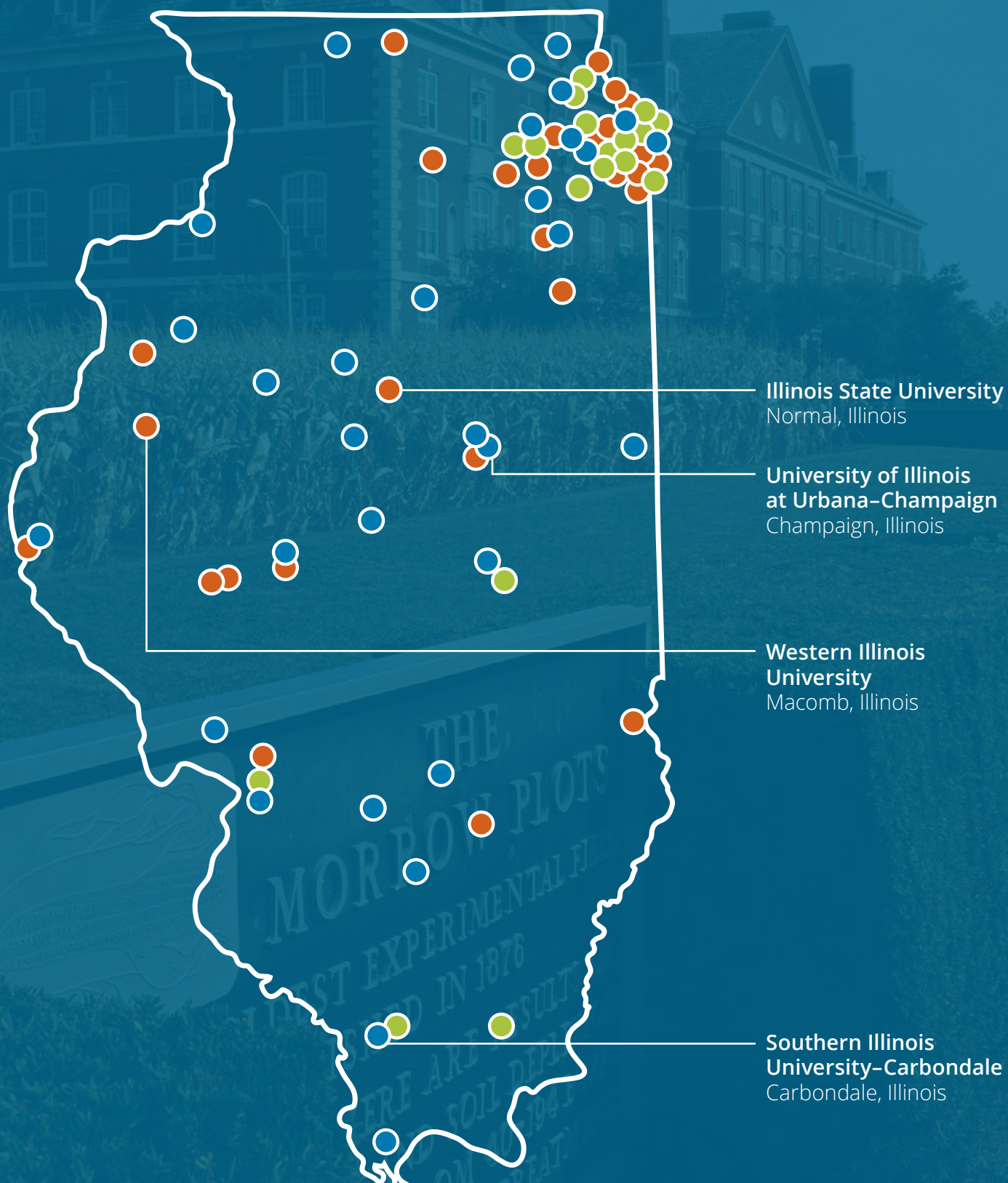
Build awareness of Illinois' food and agriculture system

Illinois must do more to disseminate important information to target audiences, including Illinois policy makers, residents, current and potential employees, students, researchers, and investors in the food and agriculture system. As such, FARM Illinois strongly recommends that the state undertake a comprehensive public awareness and communications plan—complementary to the branding campaign discussed later in this roadmap—to build awareness of Illinois' strength in food and agriculture system innovation.

This public awareness campaign should promote the full spectrum of Illinois food and agriculture to the general public, soliciting leadership from our elected and appointed policy

Higher-education food and agriculture programs in Illinois

● Agriculture ● Culinary ● Both



makers. The primary goals of this effort are threefold: to bolster understanding of Illinois' economic leadership in food and agriculture; to devise a multifaceted, diverse, but targeted approach to provide accurate information about food and agriculture; and to reduce misinformation regarding food and agriculture production.

In addition, more must be done to emphasize the importance of food and agriculture to Illinois' economy and social fabric. A coordinated initiative among food and agriculture industry would educate policy makers, industry leaders, and the general public on important issues through roundtables, hosting tours, industry data and analyses, and specialized research studies. This consortium of leaders should be inclusive to ensure the food and agriculture sector is linked together geographically and across the business, university, government, and civic communities.

As part of this effort, we must create within the general public and our policy makers a deeper understanding of farming techniques and technologies. This effort should be comprehensive, incorporating explanations of the benefits, environmental impact, safety, and nutrition of crops created with modern genomic science, of which genetically modified organisms (GMOs) are the best-known application (Illinois' corn and soybean crops are both 91 percent GMO); and the same thorough explanations are equally important for public and policy maker education on other forms of production, including but not limited to conventional farming and livestock practices, organics, pasture-based animal agriculture, and emerging perennial polycultures.

Decorating and packing operations at Eli's Cheesecake Company



As defined by USDA, “Agricultural biotechnology is a range of tools, including traditional breeding techniques, that alter living organisms, or parts of organisms, to make or modify products; improve plants or animals; or develop microorganisms for specific agricultural uses.”

The educational awareness campaign will seek to identify, assess, and support strong initiatives that build confidence among consumers, aggregators, food companies, and retailers in Illinois as a highly productive, reliable, safe, and sustainable source of food and agriculture products. If strategically tailored to a variety of audiences, this effort could have the added benefits of bolstering Illinois’ status as a priority location for sourcing and spurring student interest in studying agriculture. In fact, one aspect the campaign might seek to address is to identify terminology in addition to “agriculture” that might resonate better with target audiences, specifically students.

Given the major role that technology and research innovations will play in the coming years—and the burgeoning opportunities in everything from advanced production to food processing to biotechnology to food science to global commodity trade, all in Illinois—stakeholders across the system have work to do to ensure that our own residents, students, and policy makers develop a fuller appreciation and understanding of the food and agriculture system, from end to end.

One of Illinois’ greatest assets is its deep pool of qualified workers. The strategies outlined in this section will help the state maintain its competitive advantage by training individuals for positions in food and agriculture across the value chain. Expanded programs in primary, secondary, and higher education will ensure that students are aware of and fully prepared for the vast range of good-paying careers in the industry. Further, more must be done to educate the public on Illinois’ strength as a highly productive, reliable, safe, and sustainable source of food and agriculture products. The result will be a robust talent pipeline and an educated populace that helps to fuel growth throughout the food and agriculture system. ●



RESOURCE MANAGEMENT



Challenge

A rising global population, evolving diets, and climate change will continue to add stress to Illinois' finite natural resources.

Goal

Ensure that Illinois is sustainably protecting and managing its natural resources.



From an environmental perspective, the food and agriculture system, in Illinois and around the world, is at an inflection point: there's a broad realization that stakeholders must work together to address issues that threaten the sustainability of farming operations. Agriculture, the environment, and food used to have their own priorities; now those distinctions have been replaced by a new dynamic, where the stakeholders across food and agriculture are collaborating to reduce the impact the system has on the environment and understand the effects that the environment has on food and agriculture systems.

Farmers and industry groups are in a unique position to take the lead in securing funding and assistance to support environmental efforts. Farmers have a special understanding of the balance they must strike to get optimal yields while also protecting and maintaining their soil for future planting cycles. Research and technological innovations now give farmers an unprecedented window into how to manage farming systems, including cover crops and rotations, fertilizer, energy, and water. By promoting collaboration among farmers, government agencies, regulators, and nonprofits, Illinois can dramatically reduce the impact of the food and agriculture sector on the environment while maintaining or improving economic sustainability.

FARM Illinois recommends four strategies to promote conservation, reduce waste, and lessen the impact of farming on the environment:

1. Support existing efforts to encourage sustainable production, increase resilience to climate change, and reduce nutrient runoff
2. Demonstrate demand for existing Federal Farm Bill programs and establish new farm protection programs to preserve farmland
3. Reduce significant waste streams all along the food and agriculture system value chain, including cutting the amount of food waste from farm to fork
4. Promote renewable energy development and energy-saving efficiencies

Support existing efforts to encourage sustainable production, increase resilience to climate change, and reduce nutrient runoff

While agricultural production techniques—including improved tillage and residue management practices—have made considerable advancement in the past 20 years, there are still additional steps that can be taken by producers to improve soil health and reduce nutrient runoff. The loss of nutrients such as nitrogen and phosphorous not only harms the environment but also increases production costs for farmers. In late 2014, IDOA and IEPA released a draft of the Illinois Nutrient Loss Reduction Strategy, which outlined eight elements to address the hypoxia issue in the Gulf of Mexico. It emphasizes increasing awareness through expanded education efforts and promoting the importance of best management practices in farming. The challenge is to demonstrate to farmers that adopting these sustainable farming practices can lessen the environmental impact of their operations without driving up production costs.

FARM Illinois recommends that the Illinois Council on Best Management Practices (CBMP); the Illinois Nutrient Research and Education Council (NREC); and other local, state, and national entities collaborate on their efforts to provide educational outreach, enhanced training, and technical assistance programs. These efforts are critical to encouraging adoption of best management practices in sustainable food and agriculture production. The Illinois Nutrient Loss Reduction Strategy points to the emerging use of cover crops as one promising best

*Corn being planted
into rye grass cover
crop*



management practice to reduce nutrient and soil loss on Illinois cropland. Additional conservation practices such as terraces, filter and buffer strips, and grass waterways also aim to reduce nutrient and soil loss. Illinois should, in particular, explore implementation of STRIPS (Science-based Trials of Rowcrops Integrated with Prairie Strips). Communication and coordination among stakeholder groups will be crucial to ensure that farmers are an active partner in embracing these methods. Continued funding is needed to assist the many entities already researching and supporting the adoption of best practices such as CBMP, the Conservation Reserve Enhancement Program, NREC, and the Partners for Conservation Program.

The 2014 Farm Bill streamlined existing conservation programs and allocated \$1.2 billion in federal funding, available over the next decade, to address crucial conservation concerns. USDA's Natural Resources Conservation Service (NRCS) administers several voluntary environmental improvement programs, including the Agriculture Conservation Easement Programs (ACEP), Conservation Stewardship Program, Environmental Quality Incentives Program (EQIP), and Regional Conservation Partnership Program (RCPP). In 2015 alone, RCPP announced \$373 million to finance 115 conservation programs in all 50 states.

Illinois should build on existing successful efforts in critical conservation areas that are supported by funding from the 2014 Farm Bill. To obtain RCPP funding, the state should coordinate efforts by IDOA, IDNR, IEPA, and other state organizations to develop and submit competitive applications. By partnering with organizations such as the Delta Institute on their Nitrogen Credit Program or The Nature Conservancy, Illinois can examine opportunities to enlist early adopters that can showcase the benefits of embracing best management practices on a pay-for-performance basis. A major issue for RCPP and other programs is how to scale beyond demonstration and achieve majority participation by producers. Producer and landowner organizations need to be part of the process for that multiplier effect to occur.

Demonstrate demand for existing Federal Farm Bill programs and establish new farm protection programs to preserve farmland

Currently, Illinois doesn't have a statewide land conservation program. Kane County is the only county with an active Purchase of Agricultural Easement (PACE) program, which had protected 4,655 acres as of 2012. Three additional counties—Boone, McHenry, and Kendall—have enacted ordinances but have not secured funding for their programs. Efforts to safeguard vulnerable farmland in Illinois have traditionally occurred in urban areas, such as the Chicago collar counties and southwest region, where commercial and residential development pose an ongoing threat. Therefore, FARM Illinois encourages the state to develop a comprehensive farmland protection policy to ensure that economic development doesn't inadvertently take valuable farmland out of circulation. Under this effort, state, county, and municipal governments should strengthen smart growth provisions to slow the development for other uses of valuable farmland in the Illinois food and agriculture shed.

FARM Illinois supports the development of a statewide PACE program as well as a policy of providing counties with the authority to create and finance county PACE programs.

Farm conservation efforts in Illinois

As of 2013, Illinois had received \$14 million in USDA federal funds to support permanent farmland protection. The bulk of these funds went to Kane County, which offers a model that communities throughout the state can follow. Kane County has a history of developing comprehensive land-use strategies to balance development needs with conservation. As part of this effort, the county set a target of designating 50 percent of all land for agriculture or open space. Elected officials, seeking to identify funding sources to support their farmland protection efforts, worked with the Grand Victoria riverboat casino, which agreed to offer annual grants. Since 2001, Kane County has secured \$20 million from riverboat funds to protect farmland and has obtained matching funds through the Federal Farmland Protection Program.

Proposed legislation gives counties the clear authority to ask voters through a referendum (as requested through a petition or a resolution by the county board) if they support a tax for county farmland preservation purposes or more specifically to fund a PACE program. This clarification will facilitate the development of farmland conservation programs. The state should allocate resources to local governments to support agriculture protection zoning as well as the creation and implementation of Transfer of Development Rights programs.

Federal funding to support farmland conservation is typically allocated to initiatives that deliver the broadest impact. The state can maximize available federal funds and regional programs to support food and agriculture resource development protection by coordinating efforts with organizations such as American Farmland Trust, Openlands, and local land conservancies such as Conserve Lake County. Further, government agencies and nonprofits must make a clear connection between the economic, conservation, and land-use benefits of farmland protection.

Reduce significant waste streams all along the food and agriculture system value chain, including cutting the amount of food waste from farm to fork

Food left in fields unharvested, on retailers' shelves unsold, and on restaurant plates uneaten all contribute to the problem of food waste in Illinois. By implementing waste reduction strategies such as an agriculture surplus capture program, the state can provide food for those who most need it while helping farmers' bottom line. Some efforts are underway; for example, the Greater Chicago Food Depository received approximately 144,000 pounds of perishable produce recovered from Illinois farms last year. A host of philanthropic and nongovernmental organizations, including food depositories across the state, could be tapped to form a public-private partnership and implement pilot programs to capture more food that would otherwise

be left in fields. Illinois should draw on the expertise of the Illinois Commission to End Hunger, Feeding America, and Feeding Illinois to implement a statewide system that connects food banks and farmers. Other states have had success with waste diversion efforts that establish direct farming partnerships to provide produce efficiently and economically. The Ohio Agricultural Clearance Program, for example, uses approximately \$6 million a year in state funds to purchase and distribute approximately 25 million pounds of produce to food banks throughout the state.

Of the food that makes it off the farm, millions of pounds are discarded by US consumers each year due to flaws in food dating and labeling guidelines. FARM Illinois encourages the State of Illinois to work with the federal legislative and executive branches to develop more uniform and effective date labeling, coding, and a statewide reporting system for produce. Such a system will offer significant benefits to farmers as well as retailers, consumers, and food banks. Uniformity and full traceability will enable farms that embrace good agricultural best practices to promote the quality of their products. Other measures, such as standardized date coding (to alert customers to freshness), specialized packaging that enables pricing by weight rather than count, and other measures would help to decrease the amount of wasted food.

When food is unfit for consumption, a more robust composting effort can divert food waste from landfills. Therefore, the state should promote effective composting programs throughout Illinois for both individual and institutional food waste sources.

Promote renewable energy development and energy-saving efficiencies

One of Illinois' defining advantages in the food and agriculture sector is the low cost of energy, thanks in part to the wide variety of energy sources in the state, including nuclear power generation. Growth and innovation in the renewable energy industry also present a tremendous opportunity for Illinois farmers. In 2014, for example, Illinois refineries produced 193 million gallons of biodiesel and 1.6 billion gallons of ethanol. In addition, the state generated more than 7 billion kWh from renewable sources in 2011 (3.6 percent of total net generation), including 638 million kWh from biomass. Much of this progress is the result of federal programs

The state ranks second in the Midwest for alternative energy. As of April 2015, Illinois has 6 biodiesel plants (up from 5 in 2014) and 14 ethanol plants and is 5th in the nation for overall installed wind capacity.

to encourage the development of renewable energy sources through incentives and subsidies. However, price fluctuations in the energy market and concerns about the US government's continued funding of such programs have created uncertainty.

Illinois should pursue the production of nontraditional forms of energy (wind, solar, and biofuels) and seek to establish public-private partnerships that can harness the potential of food and agriculture production most effectively. Connecting research institutions with leading companies in the state will help to secure investments in research and production capacity. The University of Illinois, for example, is studying cellulosic feedstocks and biofuels efficiency: set to open in 2016, its Integrated Bioprocessing Research Laboratory is designed to facilitate public-private partnerships in R&D. And Southern Illinois University-Edwardsville's National Corn-to-Ethanol Research Center (NCERC) is conducting industry-leading research on ethanol. In the private sector, United Airlines has partnered with a biofuels refinery in Southern California near the Los Angeles airport (see sidebar, *United Airlines leads the charge toward aviation biofuels*). The proximity of Illinois' agricultural production to O'Hare and Midway airports makes the state a natural location for similar projects. Last, Illinois should promote the existence and benefits of nontraditional energy sources and highlight the role of Illinois agriculture as a biofuel producer to increase public awareness of next-generation biofuels. Such biofuels are made using advanced technologies that greatly expand the potential to use widely available biomass, including woody biomass and wood waste, crop residues, dedicated energy crops, municipal solid waste, and algae.

United Airlines leads the charge toward aviation biofuels

Headquartered in Chicago, United Airlines has a long history of leading the commercialization of alternative fuels for aviation. In 2011, United operated the first US commercial passenger flight powered by advanced biofuels. The airline was also the first to sign a cost-competitive, commercial-scale agreement for sustainable aviation biofuel. Beginning in 2015 and continuing over the next three years, United will purchase approximately 15 million gallons of biofuel from the AltAir refinery in Los Angeles. The fuel, which can be sourced from a variety of nonedible, next-generation plant oils and animal fats, is expected to achieve a 50 percent reduction in carbon emissions on a life-cycle basis (compared with traditional jet fuel). Wider adoption of aviation biofuels could significantly reduce aviation CO₂ emissions.

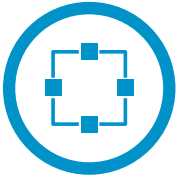
In 2012, United facilitated the launch of the Midwest Aviation Sustainable Biofuels Initiative (MASBI), a biofuel collaborative of more than 40 public, private, and nongovernmental organizations. Given the costs of scaling such technology for wider commercial use, MASBI developed several key recommendations to accelerate the commercialization of biofuels.

The state can also improve the utilization of byproducts generated through various food and agriculture sector production practices. Illinois farm operations produce materials that could be used as inputs for anaerobic power generation, but the state currently lacks freestanding generation facilities that can process large volumes of materials. One of Illinois' largest anaerobic digestion facilities has a generation capacity of 320 kW; Indiana, by contrast, has multiple anaerobic digestion facilities, including Bio Town Ag, Inc., which has a generation capacity of 9,450 kW. Local, regional, state, and federal agencies should coordinate with industry to identify strategically located regions where anaerobic digesters can be built to use agriculture and food processing byproducts.

Given that fuel and lubricants account for approximately 4 percent of expenditures at the typical farming operation, Illinois should encourage food and agriculture operations to use alternative fuels and energy-efficiency methods. Illinois should raise awareness of the full range of programs available to farms and food and agriculture companies to promote adoption of these practices; for example, IEPA currently provides rebates to businesses that use biofuels. The state should also monitor enhancements to Illinois' energy infrastructure and incentivize the development and adoption of conservation and energy-efficient technologies and smart production methods for food and agriculture.

A rising global population, changing diet preferences, and climate change will present an array of challenges to the food and agriculture system. The strategies outlined above will enable Illinois to sustainably manage its natural resources and reduce food waste. By tapping existing federal programs, Illinois could build on successful conservation efforts at the county and municipal levels and expand education and outreach to farmers on sustainable and energy-efficient farming methods. Several existing local and national organizations are well positioned to assist in a coordinated effort to establish a statewide food waste diversion program. New opportunities in renewable fuels also hold potential that could be realized through public-private partnerships. ●

INFRASTRUCTURE



Challenge

Physical infrastructure that is underinvested and poorly planned and coordinated restricts the production and flow of Illinois' food and agriculture products to market.

Goal

Ensure Illinois' infrastructure is capable of supporting the state's ability to sustainably meet its own needs while being a global leader in food and agriculture.



Transportation infrastructure, including rail, waterways, roads and bridges, airports, and logistics facilities, is critical for the effective movement of Illinois products to global as well as local markets. Illinois' superior transportation and logistics system—which enjoys proximity to the state's highly productive farmland as well as production of surrounding Midwestern states—has enabled it to become a global leader in food and agriculture distribution. In addition, broadband infrastructure, fast becoming a form of “traditional” infrastructure, can equip farmers and business owners to employ Internet-enabled innovations in their operations, resulting in advantages such as improved crop yields, maximized operations efficiency, and connections to markets outside their communities.

However, Illinois' transportation infrastructure is aging and underfunded. The record-breaking crop production of Illinois farmers, coupled with the increased volume of traffic on Illinois' roads, rail, and waterways from surrounding states, has increased congestion significantly. In addition, the state's physical broadband infrastructure is not sufficient to meet the needs of its residents and businesses, particularly in small towns and rural areas.

Infrastructure investments are long-term commitments that reach far beyond the food and agriculture system; on a higher level, investment in infrastructure can have a catalytic effect on Illinois' economy and the health of its communities.

FARM Illinois recommends four strategies to enhance the state's infrastructure for the benefit of the food and agriculture system as well as other industries and communities throughout the state:

1. Improve resource allocation by adopting a comprehensive, intermodal, and multijurisdictional approach to planning and investment
2. Modernize transportation infrastructure vital to agriculture and food distribution
3. Promote the growth and development of the region's transportation and logistics business sector
4. Enable every household and business in the state to connect to broadband service

Improve resource allocation by adopting a comprehensive, intermodal, and multijurisdictional approach to planning and investment

Our transportation network doesn't stop at jurisdictional borders, and the free flow of freight and passengers requires a regional collaboration strategy. Even within the Chicago metropolitan region, a disconnect exists between Chicago and its suburbs, resulting in plans that stop at the jurisdictional border. To address critical infrastructure needs and ensure Illinois remains a central commercial hub for the shipment of food and agriculture products, FARM Illinois recommends the state overhaul funding distribution guidelines and formulas to facilitate collaboration on multijurisdictional projects. Efficient regionalism will be essential to the growth of Illinois' food and agriculture system.

To start, the State of Illinois must evaluate all statewide, regional, and local intermodal transportation systems and identify gaps and inefficiencies. Metropolitan planning organizations should be convened to develop coordinated, performance-based approaches to infrastructure investments, prioritizing collaborative, destination (point A to point B) projects. The state can support county and municipal land-use planning that leads to the efficient use of infrastructure while also protecting the state's nearly 27 million acres of farmland. Such an effort must address the challenge faced by local and regional food and agriculture system actors, who often pay high farmland prices to maintain proximity to local markets. Last, the state should develop targets to help prioritize future public and private investment in a predictable fashion.

Modernize transportation infrastructure vital to agriculture and food distribution

FARM Illinois supports a state capital bill that provides sufficient, predictable financing for infrastructure improvements that directly support the food and agriculture system. Furthermore, we recommend that Illinois join the growing number of states that have raised the gas tax to finance infrastructure projects. As of mid-March, ten states had raised their gas tax in the past two years; meanwhile, Illinois' flat taxes of 19 cents per gallon of gas and 21.5 cents per gallon of diesel haven't increased in more than two decades. According to the Chicago Metropolitan Agency for Planning, because of inflation today's gas tax revenue buys 42 percent less than it did in 1991, when the tax was enacted. Critically, any increase in the gas tax must be accompanied by a recalibration to ensure that additional funds raised go to infrastructure projects—ending the state's practice of applying gas tax funds to other areas in the state's budget.

Beyond addressing the critical need for sustainable funding, FARM Illinois has developed several recommendations to improve the major elements of Illinois' infrastructure for the benefit of the state's food and agriculture system:

Rail

Illinois' rail network is the second largest in the country, according to the American Society of Civil Engineers (ASCE), and Chicago is the nation's largest rail hub thanks to the presence

of six of the seven biggest railroads in the country. ASCE estimates that rail freight will double by 2025—a future that the current system is not ready to handle.

FARM Illinois advocates for continued funding for the Chicago Region Environmental and Transportation Efficiency (CREATE) program to complete proposed grade separations to ease delays at highway-rail crossings. The program has already had an impact; for example, a connection in Smithboro, Illinois, has helped provide a relief valve and improved velocity through the Chicago terminal. Building on the success of CREATE, the state should forge and expand other public-private partnerships with rail companies to make mutually beneficial investments in rail infrastructure.

To augment direct improvements to freight lines, FARM Illinois supports continued federal investments in high-speed rail. Although these improvements are focused on reducing passenger travel times, upgrades will also benefit the food and agriculture system by lessening congestion and allowing freight to travel more quickly and cost effectively. In addition, by shortening commute times to the state's largest cities, a high-speed rail could better enable individuals to live further outside those centers, simultaneously easing the strain on densely populated areas and revitalizing smaller towns.

Significant amounts of Illinois' food and agricultural inputs and commodities are transported by rail

Waterways

Situated at the convergence of the Mississippi, Illinois, and Ohio rivers and Lake Michigan, Illinois and its waterways—regulated by the US Army Corps of Engineers—are a vital



commercial shipping link for domestic goods, particularly agricultural commodities. However, the aging system is in desperate need of upgrades and repair.

To bring the state's waterways system up to par, FARM Illinois recommends the state support traditional and innovative efforts to increase funding for the US Army Corps of Engineers to operate, maintain, and upgrade locks, dams, levees, and navigation channels, especially on the Upper Mississippi, Illinois Waterway, and Ohio River systems. Such an investment will allow efficient utilization of the vital transportation system, reduce the risk of costly failures, improve reliability, conserve aquatic habitats, and address invasive species. Furthermore, the state should evaluate the redevelopment of the Illinois Port District in Chicago and the rehabilitation and maintenance of inland ports and waterways throughout Illinois through potential public-private partnerships and other financing mechanisms. As part of this effort, Illinois should facilitate public dialogue on the state's ports to highlight their impact on the movement of products in and out of the region.

Roads and bridges

Given the importance of roads and bridges to enabling economic activity, the state cannot wait to implement a sustainable solution. As part of the aforementioned cross-jurisdiction strategy, the state should identify areas needed for additional road, highway, and bridge investment—whether local, county, state, or federal—and coordinate with existing planning efforts to highlight capital priorities and support appropriate financial investments. To improve small towns and rural areas, which are vital to Illinois' food and agriculture system, the state should ensure resources are provided to improve rural farm service roads and bridges, which will face increased loads in years to come.

Air

Hundreds of thousands of jobs and billions of dollars of economic output are dependent on the state's aviation system—however the connection between food, agriculture, and air freight in Illinois needs further study. FARM Illinois recommends integrating Illinois' and Chicago's air transport assets into a strategic transport infrastructure plan. With input from the Illinois Council on Food and Agriculture, the state must gain a better understanding of the connection between our air transportation infrastructure and the production and

For decades, Illinois has been at a competitive disadvantage for poultry processing relative to the Southeast region and neighboring states.



© Courtesy of Illinois Farm Bureau

*Towboat navigating
barges up
the Illinois River*

distribution of agriculture and food products. Next, the state should make recommendations for future on-site or new investments to encourage efficient transport of food and agriculture products. Finally, as part of FARM Illinois' suggestion to take a more regional approach to physical infrastructure, the state should also work more closely with elected officials in Gary, Indiana, and St. Louis, Missouri on the management of their airports.

Promote the growth and development of the region's transportation and logistics business sector

Companies small and large are responding to consumer preferences for more sustainable, locally sourced products. However, the state cannot currently meet these needs due to inadequate distribution and logistics capacity; for example, Illinois has for decades been at a competitive disadvantage for poultry processing relative to the Southeast region and neighboring states. In vertically integrated systems, distances to processing facilities drive the location of poultry or livestock production units. Today, Central Illinois Poultry Processing in Arthur, Illinois, is the only commercial poultry processing plant in the state. Illinois should develop and adopt municipal policies that encourage "buy local" programs and localized distribution of livestock and produce. To aid in this effort, the state should facilitate the strategic expansion of cold-storage facilities and livestock processing facilities. Furthermore, Illinois specialty growers could be better served if the state were to utilize in-state technical expertise to reduce the time it takes for produce, once harvested, to get to the consumer.

As an added benefit, logistics facilities could be harnessed to help combat Illinois' road congestion. The state should study trucking choke points and develop aggregation, light

“Broadband” refers to high-speed Internet of at least 4 megabits per second downstream. Broadband can be either wired (through fiber or cable connection) or wireless (through mobile broadband or WiFi).

processing, and distribution hubs where large fleet trucks drop off and smaller fleet trucks pick up products at the city’s edge. Such hubs could allow for more efficient distribution.

Enable every household and business in the state to connect to broadband service

FARM Illinois believes it is crucial that the state develop and support programs and initiatives to enhance broadband access and speed statewide, thereby increasing the investment attractiveness of currently underserved communities. The USDA predicts that although 70 percent of Illinois farms had Internet access in 2013, just 53 percent used computers for farm business, 21 percent purchased agricultural inputs over the Internet, and 19 percent conducted agriculture marketing activities over the Internet. And the issue extends beyond farms; according to the Partnership for a Connected Illinois, 30 percent of Illinois households have yet to adopt broadband.

Given the advantage of Internet-enabled innovations and communications for farmers, business owners, and residents, the state must begin by addressing jurisdictional connectivity issues between public and private broadband projects. Led by the Partnership for a Connected Illinois, several nonprofit partners are already working to tap existing programs and funding to bolster broadband statewide. As part of this effort, the State of Illinois should also encourage local governments to adopt a variety of approaches to expand Internet network investments, including “dig once” policies, municipal networks, and public-private partnerships with Internet service providers.

Illinois’ historic position as a global transportation and logistics hub has been a critical factor in helping its food and agriculture system to grow and thrive. This section’s strategies have laid out clear priorities that will enable Illinois to meet the rising demand for its products—both in international markets and within the region. With targeted investments, the state’s infrastructure will be able to better support the efficient and cost-effective movement of goods, enabling Illinois to compete with rising international competition. It is therefore critical that policy makers and stakeholders collaborate to take action. ●



BRANDING AND MARKET DEVELOPMENT



Challenge

Low visibility of Illinois food and agriculture is a major obstacle to expansion in existing and new markets, both at home and abroad.

Goal

Develop larger and more diverse local, regional, national, and international markets for Illinois' agriculture and food products by raising Illinois' profile.



As demonstrated throughout this plan, the food and agriculture system is a primary driver of Illinois' economy. And thanks to its proximity to the Illinois and Mississippi rivers, which are key export channels for the entire United States, Illinois also competes internationally on commodity production. Although the state is very competitive relative to other US states thanks to strength in several dimensions, still too many individuals inside and outside the state, including international buyers and tourists, remain unaware of the sector, its strengths, its breadth, and the people behind it.

The transition report presented to Governor Rauner in January 2015 included a section on increasing promotion of Illinois agriculture both abroad and at home. The transition committee suggested that the governor create a roadmap to promote agriculture exports and facilitate conversations among Illinois agriculture associations to coordinate efforts. The committee also noted the importance of educating the public about Illinois food production, processing, and distribution to help the state establish a "food identity." FARM Illinois fully supports these suggestions and would urge the state to think about branding and market development as a key piece, rather than an afterthought, of strengthening the food and agriculture system in Illinois.

In coordination with the public awareness campaign suggested earlier in this plan, FARM Illinois recommends two strategies to enhance Illinois' food and agriculture branding and market development efforts:

1. Raise Illinois' profile to boost domestic markets and increase exports for the full range of food and agriculture products
2. Create an Illinois "brand," inclusive of the food and agriculture system, and implement a strategic marketing plan

Raise Illinois' profile to boost domestic markets for the full range of food and agriculture products

On behalf of Illinois' farmers and business owners, the state must work to expand market access for the full range of Illinois products, no matter the destination. Much good work is already being done by local, state, federal, and international agencies and organizations, but the state must coordinate these ongoing efforts to increase local food procurement programs and agricultural product exports. A key message of this strategy will be to better promote Illinois' role as a central commercial hub for access and movement of goods to markets.

One aspect of this strategy involves maximizing existing assets. The combination of the global city of Chicago and the state's deep knowledge of the global food and agriculture system offers unique advantages. The coordination effort must harness the international expertise of key firms, businesses, and organizations throughout Chicago, the state, and the region that work to promote growth opportunities for businesses of all sizes. Illinois also has an opportunity to raise the profiles of technical service providers and consultants that engage with food and agriculture businesses. And by coordinating with national programs and organizations that promote trade and investment as well as foreign partners and trade offices, the state can improve awareness of the growth opportunities for Illinois-based companies within and outside of the United States.

A second aspect of this strategy must involve access. Illinois legislators should work collaboratively with partners in the US legislative and executive branches to remove barriers and support trade agreements that include agriculture products. Key markets present the ripest opportunities for strengthened trade relationships; Illinois already has affiliations with the trade offices and investment promotion agencies of top trading partners such as Canada, China, and Mexico; emerging-market nations such as Brazil, Cuba, and India; and long-established trade partners in Europe and elsewhere.

Third, the state must develop a comprehensive, coordinated, and cohesive strategy within our borders that promotes Illinois as a food and agriculture hub. Several functions are already in place to help businesses export. For example, the Illinois Office of Trade and Investment within DCEO currently operates ten offices in foreign countries that could be used to promote agriculture to international markets. While many producers and food companies in Illinois already export to international markets, there is a need to extend support and training to Illinois food and agriculture manufacturers, businesses, enterprises, commodity producers, and service providers. One crucial step involves enhancing the website of the Bureau of Marketing Promotion at IDOA to better assist Illinois food and agriculture companies wanting to export their products and become engaged in international markets.

Finally, we should identify public and private resources to increase the scientific and technological research, innovation, and partnerships of statewide universities and research institutions to explore growth opportunities in markets that are critical to boosting Illinois'



© Courtesy of Alto Vineyards

*Grapes at Alto
Vineyards of Southern
Illinois*

food and agriculture system. To this end, the food and agriculture sector has an opportunity to take a leadership role in Metro Chicago Exports, recently launched by World Business Chicago, the City of Chicago, and the seven counties of northeastern Illinois.

Create an Illinois “brand,” inclusive of the food and agriculture system, and implement a strategic marketing plan

While some small-scale food and agriculture marketing programs already exist in Illinois, our system’s diversity—one of our primary strengths—has proved difficult to define and condense. Our competitors and allies have found success in brands that encompass their food and agriculture strengths: Wisconsin is the dairy state, and California lauds its wine, specialty crops, and “happy cows.” Meanwhile, Illinois’ many food and agriculture assets go unappreciated by residents and tourists alike. Even those working in the food and agriculture system aren’t aware of all the moving parts. We have a wonderful story to tell—but we need a strategic plan for how to tell it.

To better align Illinois’ reputation with its strength in food and agriculture, the state should immediately begin work to build Illinois’ “brand” or “identity” that includes the Illinois food and agriculture system. A branding agency should be engaged to create a fully inclusive state brand that builds on the unique strengths of Illinois and highlights the wide variety of food and agriculture products and services the state offers. These services could be secured either through pro bono support or through funding.

A primary goal of this brand will be to connect metropolitan-area food and agriculture companies with the growers, producers, and manufacturers statewide. While the “Illinois Product” and “Illinois Where Fresh Is” programs could serve as starting places, their marketing budgets are minimal, and Illinois must go beyond isolated product promotion to build statewide brand

cohesiveness and awareness. The campaign should be designed to fit with other state agencies' marketing campaigns; the ultimate goal is to ensure that food and agriculture are included in every discussion of Illinois marketing.

Michigan has demonstrated the efficacy of including agritourism in its overarching marketing efforts. In 2006, the state created its Pure Michigan campaign, with targeted marketing in regional and, eventually, national markets. The campaign partnered with food and agriculture businesses, including grocery stores and beverage manufacturers, to reinforce its brand. Michigan State University reports that in the eight years since its inception, the Pure Michigan campaign has seen a return on investment of \$4.50 in economic development for every \$1 spent on the advertising campaign. Moreover, individuals who were aware of the campaign reported a higher opinion of the state across the board.

Although Chicago is clearly a food and agriculture city, it is not often thought of as one. Chicago is a global hotspot for cutting-edge and traditional dining venues. As part of this effort, Illinois could do more to harness Chicago's vibrant culinary scene and the many food and agriculture-related conventions in the state to grow Illinois tourism. The Chicagoland business community hasn't been engaged in this sector in the past, but it is beginning to recognize the nexus between business activities in the city and agriculture and food activity in the rest of the state. The state should accept nothing less than to make Illinois a premier destination for food and agriculture tourism.

With a thriving food and agriculture system that is a major supplier to local and global markets, Illinois has an amazing story to share with the world. The challenge is to tell this story in a compelling way: one that differentiates Illinois from other US states, highlights the quality and diversity of its offerings, and promotes agritourism across the state, from farms to vineyards to world-class restaurants. These strategies create a platform to distill and amplify Illinois' strengths to a regional and global audience. ●

Illinois' agricultural fairs

Illinois' county fairs and the Illinois and DuQuoin state fairs are important agritourism events that provide significant boosts to the state. According to a recent study published by the University of Illinois Extension, the 2014 county agricultural fair program produced an estimated statewide economic impact of \$90 million while supporting a total of 1,000 jobs. The fairs provide other benefits, from continuing local traditions and creating unity within communities to providing food and agriculture education to people of all ages.



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FARM ILLINOIS 2.0

Implementation strategy and next steps



The FARM Illinois plan, created through the diligent, sustained work of more than 150 sector stakeholders, represents a significant benchmark for the future of Illinois food and agriculture. While the creation of the plan required significant effort and commitment, it is only a start. An implementation strategy is needed to translate these strategies into action and help position Illinois and the Chicago region as the leading hub for food and agriculture innovation.

The strategies and recommendations outlined by FARM Illinois will require immediate attention to ensure their success. Coordination and collaboration among the state's entire food and agriculture sector will be pivotal to moving the implementation of these recommendations forward. As outlined on [pages 37–38](#) of this plan, FARM Illinois is proposing the creation of the Illinois Council for Food and Agriculture. This entity will serve as the independent umbrella organization in Illinois, representing all stakeholders of the food and agriculture sector, including but not limited to nonprofit organizations, state agencies, trade associations, commodity groups, and research and education institutions. It will serve as liaison between public and private food and agriculture entities and will be dedicated to the sector's advancement and development throughout the state.



Culinary students at
Kendall College

To establish the Illinois Council for Food and Agriculture, FARM Illinois asks that Governor Rauner take definitive action as soon as possible and the council be formed within 90 days of release of this roadmap. Plans will then be laid for the first phase of stakeholder engagement, including the prioritization of FARM Illinois' recommendations. Council staff will also work to secure funding from various stakeholders in the food and agriculture sector to ensure it has the resources to fulfill its mission and the ongoing implementation of the plan.

In laying out a timeline for implementation, numerous goals will require aggressive efforts in the next one to three years, while other goals will achieve progress in the longer term. To ensure this plan remains current and relevant, we recommend the Illinois Council for Food and Agriculture revisit the plan each year for the next five years. The council will develop performance measures to track and evaluate progress, and an annual report will be released to demonstrate achievements as well as indicate where additional effort is needed. After five years, the council will determine whether the FARM Illinois plan needs to be revised to help direct the state toward a future that better accounts for emerging scenarios. In this way, the plan will remain updated, vital, and relevant.

If Illinoisans come together in support of this plan and its key elements are implemented, FARM Illinois believes that by 2025 the state will be widely recognized around the world for its leadership in food and agriculture innovation.

The FARM Illinois plan, created through the diligent, sustained work of more than 150 sector stakeholders, represents a significant benchmark for the future of Illinois food and agriculture. While the creation of the plan required significant effort and commitment, it is only a start.

What will that success look like?

- Illinois will be the world's most admired and sought-after destination for food and agriculture businesses from around the world.
- Food and agriculture in Illinois will increase its contribution to the state's economy, creating thousands of new jobs for its residents and attracting highly qualified workers to the state.
- Illinois will be the global pacesetter for basic and applied research in food and agriculture through innovations drawn from bioscience, digital technology, agroecology, and other fields.
- Illinois farmers and food businesses will expand their already substantial role in global food security through innovation that increases yields, enhances nutrition, conserves resources, and adapts to the changing climate.
- Illinois' regional and local food and agriculture systems, especially that of the Chicago metropolitan region, will be among the most diverse and vibrant of any area in the world, set new standards for how food and agriculture can improve health and the environment, and help underserved communities thrive.
- Illinois' agriculture infrastructure will be among the best in the world, employing new technologies and creative financing to become a global model.

Illinois dairy farms produced approximately 215 million gallons of milk in 2014

In sum, Illinois will embrace the same spirit of innovation and dynamism that made it a world leader of food and agriculture in the 19th and 20th centuries to prosper in the 21st century. ●



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The views, opinions, and recommendations outlined in this strategic plan were formalized based on input from FARM Illinois participants and do not necessarily reflect the official policy or position of any public or private organization.

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