



# Cultivating Resilience

A Food System Blueprint that Advances the Health of Iowans, Farms and Communities

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## Acronyms Used in the Food System Blueprint

APA-IC	American Planning Association-Iowa Chapter	IID	Iowa Insurance Division
BOS	Board of Supervisors	IMPA	Iowa Meat Processors Association
BOH	Board of Health	IPA	Iowa Poultry Association
EBT	Electronic Benefits Transfer	IRA	Iowa Restaurant Association
EPA	Environmental Protection Agency	IWD	Iowa Workforce Development
FMNP	Farmers' Market Nutrition Program	IWE	Iowa Waste Exchange
IBA	Iowa Bankers Association	ISAC	Iowa State Association of Counties
ICRC	Iowa Civil Rights Commission	ISUE	Iowa State University Extension
IDALS	Iowa Department of Agriculture & Land Stewardship	LCSA	Leopold Center for Sustainable Agriculture
IDE	Iowa Department of Education	LPHA	Local Public Health Agency
IDED	Iowa Department of Economic Development	MWA	Metro Waste Authority
IDHS	Iowa Department of Human Services	NGO	Non-governmental Organization
IDIA	Iowa Department of Inspections & Appeals	PTA/O	Parent Teacher Association/Organization
IDNR	Iowa Department of Natural Resources	RC&D	Resource Conservation & Development
IDPH	Iowa Department of Public Health	SNAP	Supplemental Nutrition Assistance Program (food stamps)
IFMA	Iowa Farmers' Market Association	SWCD	Soil and Water Conservation Districts
IFC	Iowa Food Cooperative	USDA	United States Department of Agriculture
IFSC	Iowa Food Systems Council	WIC	Special Supplemental Nutrition Program for Women, Infants and Children
IFVGA	Iowa Fruit and Vegetable Growers Association		
IGIA	Iowa Grocery Industry Association		

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## Table of Contents

Healthy Iowans, Farms and Communities .....	4
Executive Summary.....	6
Iowa’s Food System Report Card.....	8
Iowa Food System Recommendations At-A-Glance .....	9
Cultivating Resilient and Healthy Food Systems for Iowa.....	12
Developing the Iowa Food System Report Card & Recommendations.....	19
Table 1. Iowa’s Food System Report Card .....	21
Production Sector.....	23
Production Sector Recommendations Series #1.....	25
Production Sector Recommendations Series #2.....	26
Production Sector Recommendations Series #3.....	27
Production Sector Recommendations Series #4.....	28
Transformation Sector .....	29
Transformation Sector Recommendations Series #5 .....	30
Transformation Sector Recommendations Series #6 .....	31
Transformation Sector Recommendations Series #7 .....	32
Distribution, Marketing & Retail Sector .....	33
Distribution Sector Recommendations Series #8.....	34
Distribution Sector Recommendations Series #9.....	35
Distribution Sector Recommendations Series #10.....	36
Food Access & Consumption Sector.....	37
Access & Consumption Recommendations Series #11.....	39
Access & Consumption Recommendations Series #12.....	40
Access & Consumption Recommendations Series #13.....	41
Waste Management Sector.....	42
Waste Management Recommendations Series #14 .....	43
Appendix A. History of the Iowa Food Policy Councils.....	44
Appendix B. Iowa Food Systems Strategic Planning Process & Stakeholders .....	45
Appendix C. Iowa Food Systems Council Vision, Mission and Goals.....	46
Appendix D. Principles of a Healthy, Sustainable Food System.....	47
Appendix E. Iowa Food System Report Card and Recommendations – Master Matrix.....	48

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## Healthy Iowans, Farms and Communities

*“Eating is an agricultural act.”*

This famous quote by renowned farmer and author Wendell Berry reminds us that all food originates on farms. And, what happens on farms directly influences the quality, quantity, safety and availability of our food supply.

As health professionals, we have witnessed rising rates of diet-related diseases such as diabetes, obesity, cardiovascular disease and certain cancers – not only in adults but also in Iowa’s children. At the current rates, it is estimated that children born in Iowa today will have a shorter life expectancy than their parents.

We recognize the need to move beyond just the treatment of these diseases, but to explore efforts that create environments and systems in which healthy food is the most accessible and easiest choice for all Iowans. Evaluating the food system as a whole, allows a broad, comprehensive perspective on the complexities and interconnectedness of our food system and frames how decisions made across the food system impact the health of Iowans, farms and communities.

Iowans recognize the vulnerabilities and challenges of our food system. Their observations include the bleeding of food dollars out of Iowa; continued loss of Iowa’s natural resources, such as soil and water needed for growing food; the great distances that food travels and the heavy dependence on fossil fuels to grow, harvest, process and transport food; and the manner in which food is grown and processed and the effects on food safety, health and nutrition. Iowans are puzzled on how a majority of our landscape is dedicated to agriculture, yet very little food is grown that directly feeds Iowans. Iowans are anxious about the significant dependence on other states and countries that put food on our plates; and how erratic weather conditions and foodborne diseases will impact our food supply and public health.

Although it may appear that attempts to transform Iowa’s food system are insurmountable, now is the time to guide and shape Iowa’s food system. We need to advance a food system that: ensures farms are part of our rural and urban landscapes; conserves and renews natural resources; builds community wealth; and advances fairness and social justice. Most importantly, Iowa’s food system must fulfill the food, nutrition *and* health needs of all eaters, now and in the future.

However, this work can’t be conducted in silos. *Cultivating Resilience: A Iowa Food System Blueprint that Advances the Health of Iowans, Farms and Communities* is the result of multi-disciplinary efforts including food system stakeholders across Iowa engaged in conversations about the future of food. This report is presented to the Iowa Food Systems Council as a stepping-stone in examining Iowa’s food system through a comprehensive lens. This framework opens opportunities to broaden this examination and dialog; allows ongoing monitoring of the resilience, or health, of Iowa’s food system; engages diverse stakeholders; encourages public-private partnerships; and implements initiatives that assure more resilient and healthy food systems in Iowa.

We hope this report will assist the Iowa Food Systems Council, government agencies, organizations, industries and all Iowans in connecting the food system dots and have conversations with decision-makers about what is best for assuring healthy Iowans, communities, economies and the environment– now, and in the future.

~ Angie Tagtow & Susan Roberts

Healthy Iowa soil grows healthy food.

Healthy food nourishes healthy Iowans.

Healthy Iowans live in healthy communities.

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*“The report, **Cultivating Resilience: A Iowa Food System Blueprint that Advances the Health of Iowans, Farms and Communities**, will enhance the work of the Iowa Food Systems Council and set the standard by which the current and future health of the comprehensive food system in Iowa is measured. This is key in setting priorities toward establishing and maintaining the most productive, healthy and economically viable system for all Iowans.”*

Linda Gobberdiel, MA, RD, Executive Director, 1000 Friends of Iowa

*“Throughout Iowa, county and municipal governments have the power to make impactful, and often immediate, change regarding their own social and economic concerns. Along with addressing state-level issues, **Cultivating Resilience** offers recommendations that empower local communities to make positive changes within their food economies, while improving healthy nutritional opportunities for their respective residents.”*

John Dean, Graduate Student, Sustainable Agriculture/Community and Regional Planning, Iowa State University

*“The Des Moines Area Religious Council, which manages a network of 12 food pantry sites serving the entire Greater Des Moines community, is deeply committed to the goals expressed in this report, among them the fundamental goal that healthy food should be the easiest choice for all Iowans. This report will help us engage all of our food system partners—growers, processors, wholesale and retail food entrepreneurs, nutritionists, health care professionals, and consumers—in ongoing conversation about creating a food system that serves the needs of all Iowans.”*

The Rev. Sarai Schnucker Rice, Executive Director, Des Moines Area Religious Council

*“A local food system has many advantages, but from a traditional economic development perspective there are two major things to consider - job creation and import substitution. There is potential for more growers, processors and marketers. If we can do this ourselves we can keep our dollars in our communities. Theoretically, it is not rocket science, but in reality it may be as complex. This Blueprint will help navigate those complex connections.”*

Melvyn Houser, Farmer, Board of Supervisors, Pottawattamie County

## Executive Summary

We all eat. Food is essential to our existence. It's an important part of Iowa's heritage and culture. Yet we often take for granted the large systems that produce, process, distribute, make accessible and dispose of the food we eat. These food systems, and the food provided, greatly influence Iowa's health (think obesity), economy (think jobs), environment (think clean water), and fairness (think worker safety).

However, these food systems are being challenged by environmental threats of climate changes, water shortages, and depleted soils; energy threats of decreasing fossil fuels and rising energy costs; health threats of increasing obesity and, at the same time, increasing hunger; and economic threats of fewer farmers and increased control of our food by large corporations.

Action is needed now. Building adaptive capacities, or resilience, throughout Iowa's food systems is a necessity as challenges increase in frequency and magnitude, and further test the capacity of Iowans.<sup>1</sup> Iowa's food systems must be made resilient to these threats and challenges if we, our children, and grandchildren are to survive and excel.

## Iowa Food System Blueprint for Iowa

The objective of the *Iowa Food System Blueprint* is to measure the health of Iowa's food system through a report card leading to recommendations for research, programs and policies to ensure a food system that supports healthier Iowans, communities, economies, and the environment. The *Iowa Food System Blueprint* has two parts:

1. Report card on the health of Iowa's food system
2. Recommendations for Iowa's food system

### Food System Sectors & Domains

The report card framework was constructed using a matrix with food system sectors (production, transformation, distribution/marketing/retail, food access/consumption, and waste management) on a vertical axis and key domain areas based on a series of goal statements<sup>2</sup> (economic, environment, fair food and farming, and food access and health) on the horizontal axis.



### PROCESS FOR DEVELOPING AN IOWA FOOD SYSTEM BLUEPRINT

<sup>1</sup> Folke C. Resilience: The emergency of a perspective for social-ecological systems analyses. *Global Environmental Change*. 2006;16:253-267. [http://www.grupochorlavi.org/php/doc/documentos/Folke\\_resilience.pdf](http://www.grupochorlavi.org/php/doc/documentos/Folke_resilience.pdf).

<sup>2</sup> Goal statements were developed by food system stakeholders in 2009 and guided indicator decision-making. <http://www.iowafoodsystmscouncil.org/goals/>

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**Indicators.** Using a participatory process, food system stakeholders identified key indicators within each domain crossed with each food system sector that best supported the goal of ensuring a just and diverse food system that supports healthier Iowans, communities, economies and the environment. In addition, the indicators had to meet the following criteria:

- Valid and measurable;
- Reliable and credible source;
- Timely and collected and reported consistently to establish trends;
- Publicly available, transparent and understandable;
- Available at the state level (county level also preferred); and
- Relate to the Iowa Food Systems Council goal statements.

Numerous indicators were considered in examining the Iowa food system. However, a majority of indicators were not included in the report card because of data unavailability and/or not meeting above criteria.

### **Iowa Food System Report Card**

Fourteen indicators, detailed in the report, were identified. Five of the 14 indicators exhibit a healthy trend, represented by a green arrow, whereas nine of the indicators exhibit an unhealthy trend, represented by a red arrow. The resilience and health of Iowa's food system from an overall, composite rating of the sum of indicators is 'Poor.' With reversals of unhealthy indicator trends through the implementation of recommendations, this 'grade' will improve.

The result of our food system report card process is a comprehensive approach to assessing the current resilience and health of Iowa's food system. This approach enables the report card to be updated on a regular basis to monitor the increased resiliency and health of Iowa's food systems.

### **Food System Recommendations**

Upon analysis of indicator trends from the report card, stakeholders recommended policy, program and research strategies to improve the trends. These recommendations provide a framework for improving Iowa's food system to be more resilient and healthy. Three recommendations cross all sectors and domains of the *Iowa Food System Blueprint* and are needed to strengthen food system and policy infrastructure, at the state, regional and local levels.

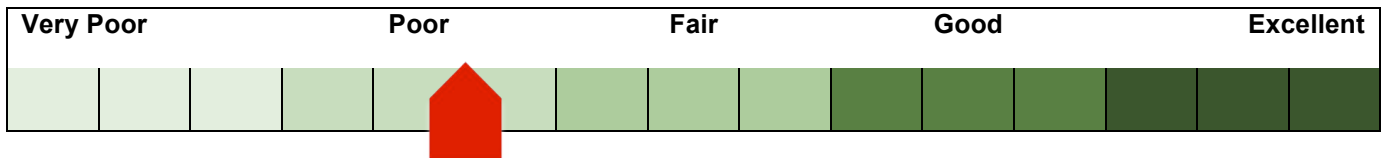
Greater detail of the recommendations is provided in the report including specific examples, implementation at the state and/or local levels and potential partners.

# Iowa's Food System Report Card

Food System Sector	Domain <sup>3</sup>			
	Economic	Environment	Fair Food & Farming	Food Access & Health
Production	Market value of fruits and vegetables as a percent of total value of Iowa agriculture products	↓	Average Iowa Water Quality Index ↑	Percent of acres of agriculture land in Iowa producing fruits and vegetables ↓
			Estimated average annual sheet and rill erosion on Iowa cropland ↓	
Transformation	Percent of fruit and vegetable canning, pickling and drying facilities of total food manufacturers in Iowa	↓	Incidence of nonfatal worker injuries/illnesses in animal slaughtering and processing in Iowa ↓	
	Number of poultry processing facilities in Iowa with less than 20 employees	↓		
Distribution, Marketing & Retail	Dollar value of Iowa agricultural products sold to Iowans for human consumption	↓		Number of farmers' markets per 100,000 Iowans ↑
				Number of Healthy Food Retailers per 100,000 Iowans ↓
Access & Consumption	Value of SNAP EBT purchases at Iowa farmers' markets	↑	Percent of Iowa households with low and very low food security (hunger) ↑	Percent of Iowa adults who are overweight and obese ↑
Waste Management		Percent total food waste per Iowa statewide municipal solid waste composition ↑		

Key: ↓ = Healthy decrease    ↑ = Healthy increase    ↓ = Unhealthy decrease    ↑ = Unhealthy increase

## Composite Rating of the Health of Iowa's Food System





<sup>3</sup> Trend and resource data for the Iowa's Food System Report card are detailed in the report available at [www.iowafoodsystemscouncil.org/cultivating-resilience/](http://www.iowafoodsystemscouncil.org/cultivating-resilience/)









# Iowa Food System Recommendations At-A-Glance

## Crosscutting Recommendations

- i. Establish an Office of Iowa Food Systems directed by a food system professional. Responsibilities shall include:
  - Partner with private and non-profit entities focused on improving Iowa's food system;
  - Establish communication and coordination among state agencies and institutions responsible for food system-related programs and regulations;
  - Solicit funding for food systems research initiatives;
  - Coordinate food system data collection;
  - Develop a comprehensive online portal for Iowa food system information and resources;
  - Partner with the Iowa Food Systems Council to develop an on-going food system report card to monitor the health of Iowa's food system and make recommendations to advance resilient and healthy Iowa food production, processing, marketing and accessibility.
- ii. Enlist the Iowa Food Systems Council as the advisory agency to the Governor, Iowa Legislature, and Office of Iowa Food Systems. Activities shall include:
  - Coordinate activities with the Office of Iowa Food Systems;
  - Conduct a food system policy audit identifying state statutes, city and county ordinances that inhibit and expand diverse and healthy Iowa food production, processing, marketing and accessibility;
  - Partner with the Office of Iowa Food Systems to develop an on-going food system report card which evaluates the health of Iowa's food system and makes recommendations that advance diverse and healthy Iowa food production, processing, marketing and accessibility.
- iii. Establish regional food system councils appointed by county Boards of Supervisors and Boards of Health to:
  - Establish communication and coordination among county agencies, institutions and municipalities related to food systems issues;
  - Conduct periodic regional food system assessments which includes:
    - A food system policy audit identifying county and municipal statutes and ordinances that inhibit and expand diverse Iowa food production, processing, marketing and accessibility;
    - A regional food system report card that evaluates the health of the region's food system; and
    - Recommendations to advance resilient and healthy regional food production, processing, marketing and accessibility.
  - Partner with the Office of Iowa Food Systems, private and non-profit entities on research and programs related to Iowa's food system.

Sector	Domain	Indicator	Recommendation
Production	Economic	 Market value of fruits and vegetables as a percent of total value of Iowa agriculture products	1a. Assess, develop and adopt diverse financing initiatives for small and mid-size fruit and vegetable producers in Iowa for economic development and improved health.
			1b. Incorporate small and mid-sized food production and processing as a targeted Value Added Agriculture industry for Iowa supported with a minimum of five percent allocation of Iowa Department of Economic Development funds.
			1c. Assess, develop and adopt an Iowa Agriculture and Farm Worker Job Creation Tax Credit for small and mid-sized diversified farms that hire one or more new workers.
	Environment	 Average Iowa Water Quality Index (waterways that are very poor, poor or fair)	2a. Assess, develop and implement an "Adopt an Iowa Waterway" community-based water monitoring program in which organizations or individuals monitor water quality and provide data to the Iowa Department of Natural Resources. 2b. Adopt a policy that increases by ten percent per year landowner development of multi-species buffer strips placed along all Iowa waterways on agricultural land.

Sector	Domain	Indicator	Recommendation
		 Estimated average annual sheet and rill erosion on Iowa cropland	3a. Assure the Iowa Department of Agriculture and Land Stewardship enforces Iowa Soil 2000 legislation by working with the Soil and Water Conservation District Commissioners. 3b. Assess, develop and adopt incentives, resources and technical assistance for Iowa farmers to establish comprehensive farm conservation plans.
	Food Access & Health	 Percent acres of agriculture land in Iowa producing fruits and vegetables	4a. Implement solutions to assure maximum safety of foods produced in Iowa. 4b. Assess and develop tools for adoption by Iowa municipalities and counties to perform land inventories of public properties with the goal of determining suitability for food production such as urban farms, community gardens/orchards and municipal edible landscapes. 4c. Assess and develop sample ordinances for adoption by Iowa municipalities and counties that support urban farms and backyard, school, and community gardens/orchards. 4d. Assess and develop ordinances for adoption by Iowa municipalities and counties that offer incentives to developers of residential and mixed-use projects to incorporate food system features into plans.
Transformation/ Processing	Economic	 Percent of fruit and vegetable canning, pickling and drying facilities of total food manufacturers in Iowa	5a. Assess, develop and implement online resources to assist with development of Iowa commercial kitchens for value-added food processing. 5b. Assess, develop and adopt financial incentives for small and mid-sized food processors in Iowa, especially fruit and vegetable processors.
		 Number of poultry processing facilities in Iowa with less than 20 employees	6a. Assess, develop and maintain small, regional USDA-inspected poultry processing units for regions in Iowa currently lacking poultry processing capacity. This may include mobile poultry processing units. 6b. Increase training and technical assistance for small and mid-sized Iowa food processors.
	Fair Food & Farming	 Incidence of nonfatal worker injuries/illnesses in animal slaughtering and processing in Iowa	7a. Research and report on the safety and social justice issues of workers in Iowa's food production, processing and food service industries.
Distribution, Marketing & Retail	Economic	 Dollar value of Iowa agricultural products sold to Iowans for human consumption	8a. Assess, develop and implement regional food hubs for aggregation, processing and distribution across Iowa to make larger quantities of Iowa produced food available for retailers and institutional buyers. 8b. Assess, develop and implement an online Iowa food procurement resource program with tools for private and public institutions (i.e., schools, hospitals, long-term care facilities, universities, restaurants, and correctional facilities) to increase purchases of Iowa produced foods. 8c. Assess, develop and adopt procurement policies requiring Iowa public institutions and agencies that purchase food to purchase a minimum of 10 percent of Iowa produced foods by 2015.

Sector	Domain	Indicator	Recommendation
	Food Access & Health	↑ Number of farmers' markets per 100,000 Iowans	9a. Assess, develop and adopt policies and programs that increase Iowan's access to farmers' markets and healthy Iowa-produced food and create economic opportunities for Iowa food producers and retailers.
		↓ Number of Healthy Food Retailers per 100,000 Iowans	10a. Establish an Iowa healthy food retail initiative to increase availability of fruits and vegetables (indicated by percent shelf space for fruits and vegetables) in grocery and convenience stores.
Food Access & Consumption	Economic	↑ Value of SNAP EBT purchases at Iowa Farmers Markets	11a. Assess, develop and adopt strategies to increase the purchase of fruits and vegetables at farmers' markets by low-income Iowans.
	Fair Food & Farming	↑ Percent of Iowa households with low and very low food security (hunger)	12a. Assess, develop and adopt municipal transportation policies that increase access to healthy food for all Iowans.
			12b. Develop and implement an Iowa Culinary Corps Program at emergency food sites in Iowa for low-income Iowans to gain work experience and increased job skills.
Food Access & Health	↑ Percent Iowa adults who are overweight and obese	13a. Assess, develop and adopt comprehensive education curricula on health and food systems (from production to waste management) to decrease rates of chronic disease in Iowans for K-12, community colleges, colleges and universities, and continuing education for health professionals.	
13b. Establish policy in which the Iowa Department of Public Health and county public health departments include food system indicators in their Community Health Needs Assessment and Health Improvement Plans (CHNA & HIP).			
Waste Management	Environment	↑ Percent Total Food Waste per Iowa Statewide Municipal Solid Waste Composition	14a. Assess, develop and implement an Iowa compost program that provides assistance to residents and businesses to compost food waste and food packaging.
			14b. Assess, develop and implement a food recovery program that diverts healthy, safe, institutional and retail food from Iowa landfills to emergency food systems.

"The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals... In short, a land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such."

~ Aldo Leopold, *A Sand County Almanac*

# Cultivating Resilient and Healthy Food Systems for Iowa

We all eat. Food is essential to our existence. It's an important part of Iowa's heritage and culture. Yet we often take for granted the large systems that produce, process, distribute, make accessible and dispose of the food we eat. These food systems, and the food provided, greatly influence Iowa's health (think obesity), economy (think jobs), environment (think clean water), and fairness (think worker safety).

However, these food systems are being challenged by environmental threats of climate changes, water shortages, and depleted soils; energy threats of decreasing fossil fuels and rising energy costs; health threats of increasing obesity and, at the same time, increasing hunger; and economic threats of fewer farmers and increased control of our food by large corporations.

Action is needed now. Building adaptive capacities, or resilience, throughout Iowa's food systems is a necessity as challenges increase in frequency and magnitude, and further test the capacity of Iowans.<sup>4</sup> Iowa's food systems must be made resilient to these threats and challenges if we, our children, and grandchildren are to survive and excel.

## What is a Food System?

Experts describe the food system as the conversion of raw agricultural materials into foods that are marketed, transported to a retail location, purchased and then consumed. At each point of the system, wastes are generated.

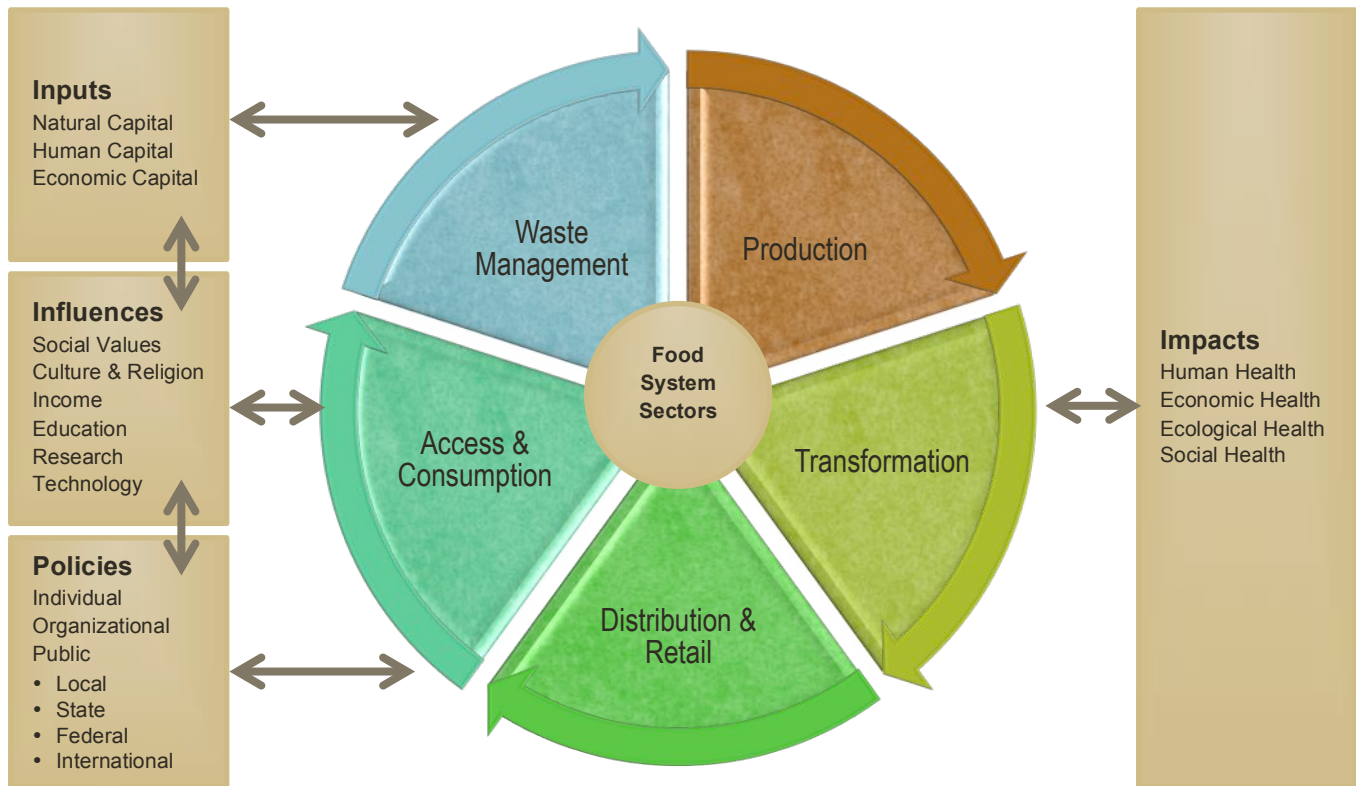
For the purposes of this report, Iowa's food system is segmented into five distinct sectors. These food system sectors (Figure 1) are interconnected; that is, actions in one sector create consequences in other sectors. These complex processes influence economic, environment, health and social outcomes.<sup>5</sup>



FIGURE 1. FOOD SYSTEM MODEL

4 Folke C. Resilience: The emergency of a perspective for social-ecological systems analyses. *Global Environmental Change*. 2006;16:253-267. [http://www.grupochoarvi.org/php/doc/documentos/Folke\\_resilience.pdf](http://www.grupochoarvi.org/php/doc/documentos/Folke_resilience.pdf).

5 Sobal J, Khan L, Bisogni C. A conceptual model of the food and nutrition system. *Soc Sci Med* 1998. 47 (7): 853-863.



**FIGURE 2. INTERCONNECTIONS OF THE FOOD SYSTEM**

## Interconnections of the Food System

Each of the food system sectors relies on a series of inputs in order to operate. Additionally, there are a cadre of influences that affect the functionality and efficiency of a food system, especially policy. Lastly, there are impacts as a result of the food system (Figure 2).

### Inputs

Three vital inputs form the foundation of Iowa's food systems. Systems are completely dependent upon these inputs and without them would fail.

- **Natural Capital** includes soil, water, sun, energy, air and genetic resources.
- **Human Capital** includes the knowledge and skills needed to perform and direct labor throughout the food system resulting in positive economic value. This includes farmers, farmworkers, processors, distributors, marketers, retailers, food preparers, researchers, and eaters.
- **Economic Capital** is the financing needed to support the growing, processing, marketing, transporting, purchasing, preparation and disposal of food.

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## Influences

There are numerous influences on Iowa's food systems. They include social values, cultural trends, religious beliefs, household incomes, education, research and technology. These influences are unique to Iowa and shape the quality, quantity, diversity and accessibility of food in Iowa.

## Policy

Food system policy is the combined efforts of individuals, organizations, industries and governments which influence how food is grown, processed, distributed, marketed, consumed and disposed in order to further economic, environmental, health and social objectives. Unfortunately, these objectives do not always coincide among food system players and economics becomes the determining factor, to the detriment of other objectives, in food system decision-making.

Food policies at the individual and organizational levels include values, principles and guidelines implemented in homes, workplaces or organizations. Food system public policy is determined and implemented at the municipal, county, state, federal and international levels<sup>6</sup> and requires a process that involves input from citizens, food system stakeholders and elected officials.

## Impacts

Within a health context, there are impacts or outcomes resulting from current food systems. These are interconnected to the functionality, efficiency and policies of food systems.

- **Human Health** includes the physiological status and the presence of diseases such as obesity, diabetes, cardiovascular disease and cancer of a population resulting from the availability, quality, quantity and safety of the food supply.
- **Economic Health** includes wages, employment, household income and business activity. It also includes the circulation of monetary wealth within communities.
- **Ecological Health** includes the environmental integrity of natural resources such as soil, water, biodiversity, air and fossil fuel and the restorative capacity to carry out nature's services.
- **Social Health** or fairness is a measure of social justice and engagement and assures no person or thing is exploited; workers earn a living wage, work in safe conditions, and are offered equal opportunities to advance.

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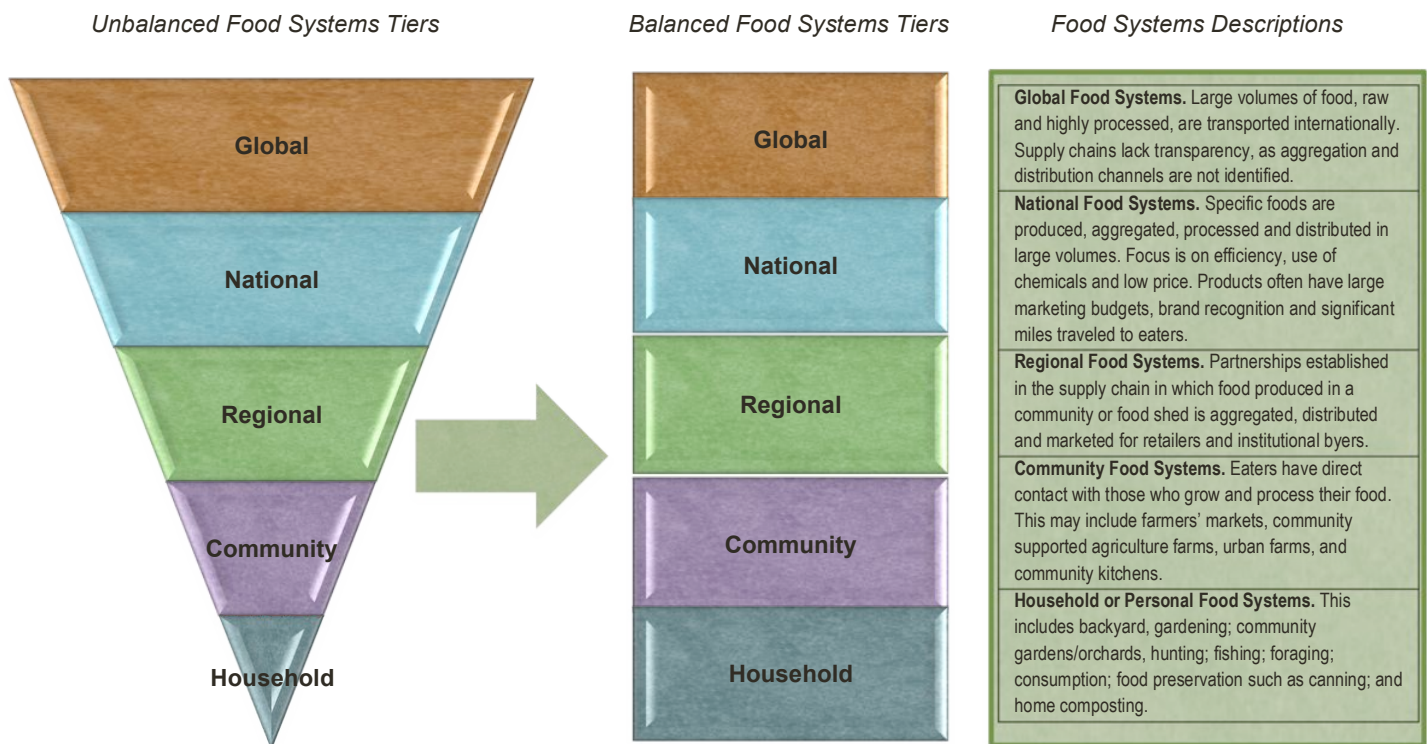
<sup>6</sup> Muller M, Tagtow A, Roberts S, MacDougall E. Aligning Food Systems Policies to Advance Public Health. *J Hunger Environ Nutr.* 2009;4(3-4):225-240.

### Eaters' Interactions with Food Systems<sup>7</sup>

Eaters interact with various tiers of food systems. From individual food production to global food conglomerates, the interconnections between eaters and food systems are great. Today, eaters are overly dependent upon national and global food systems, while household, community and regional food systems are underdeveloped (Figure 3).

Iowa currently does not have the infrastructure to support diverse tiers of food systems. Cultivating diverse tiers across all food system sectors, and shifting food dependency across each of the tiers will decrease food system vulnerability by: distributing risk and volatility; increasing self-reliance and food security; increasing transparency across food supply chains; and building relationships.

An objective of this report is to advance recommendations that support building a resilient and healthy food system including more equal reliance across all tiers.



**FIGURE 3. BALANCED EATER INTERACTIONS WITH FOOD SYSTEMS FOR RESILIENCY AND HEALTH**

<sup>7</sup> Adapted from Bower J, Doetch R, Stevenson S. Tiers of the Food System. *A New Way of Thinking about Local and Regional Food*. University of Wisconsin Center for Integrated Agricultural Systems. August 2010.

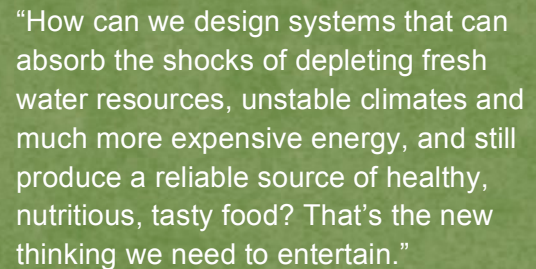
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## Vulnerabilities and Challenges of Iowa's Food Systems

Iowans are asking critical questions about the stability, safety and health of food systems. An analysis of vulnerabilities and challenges across food system sectors and domains shows:

- **Weakening Economic Capital** including escalating health care costs; reliance on federal supports; unequal distribution of incentives and supports among producers, industries and research; volatile grain and livestock markets; increased vertical and horizontal integration between food sectors resulting in increased concentration of power among few players; food price speculation; food dollars leaving Iowa with more than 85 percent of the \$8 to \$9 billion/year is spent on food grown outside of Iowa;<sup>8</sup> and declining capacity of processing facilities, especially for fruits, vegetables and poultry.
- **Declining Human Capital** including loss of jobs and revenue from small and mid-sized production and processing; loss of trained production and processing workforce; aging farmers; increasing absent land owners; and reliance on immigrant laborers in production and processing.
- **Degrading Natural Capital** including eroding soil; poor water quality; drought and flooding; extinction of native plants and organisms; decline in biodiversity of agricultural products with only two major crops, corn and soybeans, covering more than 24 million acres and replacing the more than 34 crops grown in the 1920s, half of which were fruits and vegetables;<sup>9</sup> questions surrounding genetically engineered crops; dependence on non-renewable energy; erratic weather conditions from climate change; dependence on agricultural chemicals; and increased resistance to chemicals and pharmaceuticals.
- **Declining Social and Health Capital** including loss of household food production and preservation knowledge and skills; inadequate farmland succession planning; household food insecurity rising to almost 12 percent of Iowa households;<sup>10</sup> rise in diet-related diseases in children and adults; marketing of foods that do not promote health; large-scale foodborne illnesses; and escalating healthcare costs.
- **Strained Political Capital** including unfavorable views of government; potential biased funding sources of academic and research institutions; low or no transparency of food production and/or



“How can we design systems that can absorb the shocks of depleting fresh water resources, unstable climates and much more expensive energy, and still produce a reliable source of healthy, nutritious, tasty food? That’s the new thinking we need to entertain.”

~ Frederick L. Kirschenmann, 2008 Glynwood Medal for Distinguished Leadership Award Ceremony

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8 1998 Survey of Buying Power. Sales and Marketing Management. 1998

9 Carolan M. Number of Commodities Produced for Sale on at Least 1 percent of all Iowa Farms – 1920 to 2002. Leopold Center for Sustainable Agriculture; 2004; [www.leopold.iastate.edu/pubs/staff/files/farm\\_enterprises\\_1204.pdf](http://www.leopold.iastate.edu/pubs/staff/files/farm_enterprises_1204.pdf).

10 Nord M, Coleman-Jensen A, Andrews M, Carlson S. Household Food Security in the United States, 2009. USDA Economic Research Report No. (ERR-108). November 2010. <http://www.ers.usda.gov/Publications/ERR108/ERR108.pdf>




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processes; inadequate enforcement of regulation; lobbying dollar influence; and debate on use of food for fuel.

Nationally, the gap is widening between food grown and food needed for health. According to the USDA, if eaters in the U.S. were to eat the recommended servings of foods according to the Dietary Guidelines for American's, U.S. agriculture would need an additional 7.6 million acres in fruit production, 6.5 million additional acres in vegetable production, and an additional 11 billion pounds of milk each year.<sup>11</sup> Current Dietary Guidelines for Americans, which recommend more fruits and vegetables, would require even more acres to produce fruits and vegetables. Importation of fresh fruits and vegetables into the U.S. has doubled since 1998,<sup>12</sup> resulting in a great reliance on foreign countries to provide fruits and vegetables.

The bottom line is these challenges directly affect the availability, diversity, quality, quantity and safety of food needed for an Iowa food system that supports healthy Iowans, farms and communities - now and in the future.



Let us tackle the big issues with bold ideas that transform Iowa to accomplish our shared mission to grow Iowa, and realize our shared vision of Iowa as the best place to live, work and raise a family.

~ USDA Secretary of Agriculture & Former Iowa Governor Thomas Vilsack

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11 Buzby J, Wells H, Vocke G. *Possible Implications for U.S. Agriculture from Adoption of Select Dietary Guidelines*. Washington, DC: USDA Economic Research Services; November 2006.

12 Huang S, Huang K. *Increased U.S. Imports of Fresh Fruits and Vegetables*. USDA, Economic Research Service, Report #FTS-328-01, September 2007.

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## Cultivating Resilience and Health in Iowa's Food System

The challenges just described are real. Building resilience and health within Iowa's food systems will enable Iowans, farms and communities to survive and excel during these challenges. Adaptive capacities in Iowa's food systems are a necessity as periods of disruption within food systems will increase in frequency and magnitude, and further challenge the capacity of Iowa.<sup>13</sup> To build this adaptive capacity, or resilience, within Iowa's food system, there needs to be measures in place to advance economic, ecological and social capacity. Specifically, Iowa needs:

- **Economic resilience** within food systems, which is the inherent and adaptive responses to disasters that enable Iowans, farms and communities to avoid potential financial losses. Economic resilience emphasizes ingenuity and resourcefulness during and after an event.<sup>14</sup> Characteristics of economic resilience within the food system include: all sectors of the food system adequately support livelihoods of families; food system activities contribute to local and regional economic development; and no one entity holds a disproportionate share of economic control over food production, transformation, distribution, access or consumption.
- **Ecological resilience** within the food system, which is the capacity for natural resource renewal in a dynamic environment and provides an ecological buffer that protects food systems from failing to mitigate problems.<sup>15</sup> Practices that support ecological resilience include: inputs are used in ways that conserve, regenerate or enhance natural resources (i.e., soil, water, air); genetic biodiversity is preserved; renewable energy sources are used; and wastes are limited and recycled.
- **Social resilience** within the food system, which is a community's ability to cope with distresses such as erratic weather, economic shocks, and food contamination while positively adjusting to change, risk and adversity. Characteristics of social resilience within the food system include: equitable distribution of resources to access food; people working in the food system are treated fairly; foods are produced to benefit human health, are culturally acceptable, and are economically accessible for all people. Lastly, the food system functions with regard for future generations.

Moving forward requires a comprehensive plan for cultivating resilience and health in Iowa's food system.<sup>16</sup> This includes building knowledge, skills, networks, leadership, programs, research and policies.

A resilient and healthy Iowa food system builds community wealth, conserves and renews natural resources, advance fairness for all, and fulfills the food and nutrition needs of all Iowans, now and in the future.

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13 Folke C. Resilience: The emergency of a perspective for social-ecological systems analyses. *Global Environmental Change*. 2006;16:253-267. [http://www.grupochorlavi.org/php/doc/documentos/Folke\\_resilience.pdf](http://www.grupochorlavi.org/php/doc/documentos/Folke_resilience.pdf).

14 Rose, Adam. Defining and measuring economic resilience to disasters. *Disaster Prevention and Management*. 2004;13(4):307-314. <http://insct.syr.edu/uploadedFiles/insct/uploadedfiles/PDFs/Defining%20and%20Measuring%20Economic%20Resilience%20to%20Disasters.pdf>

15 Gunderson, L., and C. Folke. 2005. Resilience—now more than ever. *Ecology and Society*. 10(2): 22. <http://www.ecologyandsociety.org/vol10/iss2/art22/>

16 Principles of a Healthy, Sustainable Food System (see Appendix D)

# Developing the Iowa Food System Report Card & Recommendations

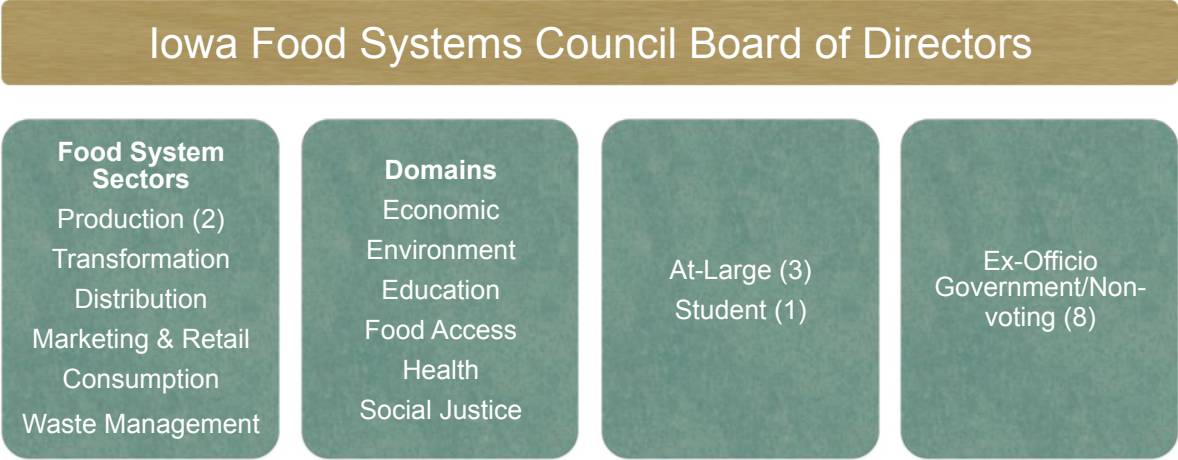
## Engaged Stakeholder Group Establish Council

Since October 2008, more than 165 stakeholders representing all food system sectors across Iowa have engaged in strategic planning activities in an effort to re-establish the state food policy council (Appendix A). Stakeholders included academia, commodity groups, conservation districts, Extension agents, faith-based communities, farmers and farm organizations, food banks and pantries, food retailers, foundations, health providers, dietitians, planners, public health practitioners, policy professionals, state and county government agencies, and youth (Appendix B). Accomplishments included crafting a mission, vision and goal statements, identifying core values and functions, and securing initial funding.

In March 2010, the W.K. Kellogg Foundation provided a one-year grant to Iowa to continue the work of the stakeholders to establish a stable governance structure and conduct a comprehensive assessment and plan of Iowa’s food landscape – this ‘Blueprint’ (Appendix B).

An elected 17-member Board of Directors (Figure 4) representing diverse food system sectors and domains governs the Iowa Food Systems Council (IFSC). The vision of the IFSC is: Iowa has a just and diverse food system which supports healthier people, communities, economies and the environment. The mission is to recommend policy, research and program options for an Iowa food system that supports healthier Iowans, communities, economies and the environment.

The inaugural election for Directors was held in November 2010. Recognizing the importance of state government agencies, several state government agency representatives serve on the IFSC in an ex-officio, non-voting capacity.



**FIGURE 4. GOVERNANCE STRUCTURE OF THE IOWA FOOD SYSTEMS COUNCIL**

## The Iowa Food System Blueprint

The objective of the *Iowa Food System Blueprint* is to measure the health of Iowa's food system through a report card leading to recommendations for research, programs and policies to ensure a food system that supports healthier Iowans, communities, economies, and the environment (Figure 5). The *Iowa Food System Blueprint* has two parts:

1. Report card on the health of Iowa's food system
2. Recommendations for Iowa's food system

### Iowa Food System Report Card Framework

The report card framework was assembled using a matrix with food system sectors (production, transformation, distribution/marketing/retail, food access/consumption, and waste management) on a vertical axis and key domain areas based on a series of goal statements<sup>17</sup> (economic, environment, fair food and farming, and food access and health) on the horizontal axis.

Stakeholders divided into workgroups and using conference calls and face-to-face meetings, identified key indicators for each domain. The criteria used to select the food system report card indicators were:

- Valid and measurable;
- Reliable and credible source;
- Timely and collected and reported consistently to establish trends;
- Publicly available, transparent and understandable;
- Available at the state level (county level also preferred); and
- Relate to the Iowa Food Systems Council goal statements.

Numerous indicators were considered in examining the Iowa food system. However, a majority of those indicators were not included in the report card because of data unavailability and/or not meeting the above criteria. Other challenges included varying interpretations and uses of data and lack of coordination among agencies collecting data.

### Iowa's Food System Resilience and Health Rated as Poor

Fourteen indicators were identified. Five of the 14 indicators exhibit a healthy trend, represented by a green arrow, and nine of the indicators exhibit an unhealthy trend, represented by a red arrow (Table 1). The resilience and health of Iowa's food system from an overall, composite rating of the sum of all indicators is 'Poor.' With reversals of unhealthy indicator trends through the implementation of recommendations, this "grade" will improve (Figure 6).

The result of this participatory process is a comprehensive approach to assessing the current resilience and health of Iowa's food systems. This approach enables the report card to be updated on a regular basis and to monitor the increased resiliency and health of Iowa's food systems.



**FIGURE 5. PROCESS FOR DEVELOPING AN IOWA FOOD SYSTEM BLUEPRINT**

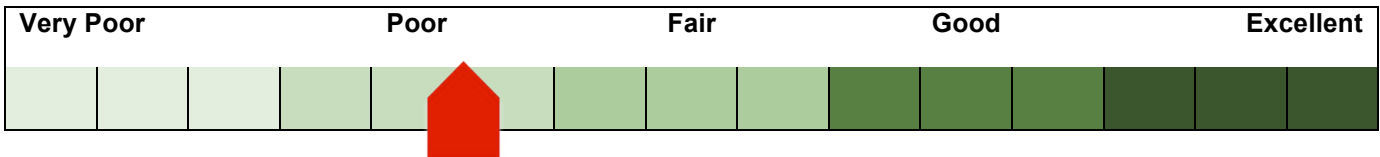
<sup>17</sup> Goal statements were developed by food system stakeholders in 2009 and guided indicator decision-making (Appendix C)

# Table 1. Iowa's Food System Report Card

Food System Sector	Domain <sup>18</sup>				
	Economic	Environment	Fair Food & Farming	Food Access & Health	
Production	Market value of fruits and vegetables as a percent of total value of Iowa agriculture products	↓	Average Iowa Water Quality Index	↑	
			Estimated average annual sheet and rill erosion on Iowa cropland	↓	
Transformation	Percent of fruit and vegetable canning, pickling and drying facilities of total food manufacturers in Iowa	↓	Incidence of nonfatal worker injuries/illnesses in animal slaughtering and processing in Iowa	↓	
	Number of poultry processing facilities in Iowa with less than 20 employees	↓			
Distribution, Marketing & Retail	Dollar value of Iowa agricultural products sold to Iowans for human consumption	↓		Number of farmers' markets per 100,000 Iowans	↑
				Number of Healthy Food Retailers per 100,000 Iowans	↓
Access & Consumption	Value of SNAP EBT purchases at Iowa farmers' markets	↑	Percent of Iowa households with low and very low food security (hunger)	↑	
				Percent of Iowa adults who are overweight and obese	↑
Waste Management		Percent total food waste per Iowa statewide municipal solid waste composition	↑		

Key: ↓ = Healthy decrease    ↑ = Healthy increase    ↓ = Unhealthy decrease    ↑ = Unhealthy increase

## FIGURE 6. COMPOSITE RATING OF THE HEALTH OF IOWA'S FOOD SYSTEM



<sup>18</sup> Trend and resource data used are detailed in the following pages.

## Recommendations for Building Resilience and Restoring Health

Upon analysis of indicator trends from the report card and a literature review, stakeholders recommended policy, program and research strategies to improve these trends. Thirty-one recommendations provide a framework for the *Iowa Food System Blueprint*. Three recommendations cross all sectors and domains and are needed to strengthen food system and policy infrastructure, at the state, regional and local levels (Table 2).

A food system sector, domain and indicator catalogue each recommendation. The recommendations are specific, action-oriented strategies and identified as being implemented at the state or local (municipal or county) levels. Potential partners<sup>19</sup> are identified in addition to the potential impact (economic, environmental, social or health) the strategy may have.

This framework enables the Iowa Food Systems Council in conjunction with stakeholders and state agencies to regularly update the plan, track trends, and evaluate progress. Additionally, the *Iowa Food System Blueprint* offers a template for counties and municipalities to replicate the process.

**TABLE 2. CROSSCUTTING FOOD SYSTEM RECOMMENDATIONS**

Crosscutting Recommendations	State	Local
i. Establish an Office of Iowa Food Systems directed by a food system professional. Responsibilities shall include: <ul style="list-style-type: none"> <li>• Partner with private and non-profit entities focused on improving Iowa's food system;</li> <li>• Establish communication and coordination among state agencies and institutions responsible for food system-related programs and regulations;</li> <li>• Solicit funding for food systems research initiatives;</li> <li>• Coordinate food system data collection;</li> <li>• Develop a comprehensive online portal for Iowa food system information and resources;</li> <li>• Partner with the Iowa Food Systems Council to develop an on-going food system report card to monitor the health of Iowa's food system and make recommendations to advance resilient and healthy Iowa food production, processing, marketing and accessibility.</li> </ul>	✓	
ii. Enlist the Iowa Food Systems Council as the advisory agency to the Governor, Iowa Legislature, and Office of Iowa Food Systems. Activities shall include: <ul style="list-style-type: none"> <li>• Coordinate activities with the Office of Iowa Food Systems;</li> <li>• Conduct a food system policy audit identifying state statutes, city and county ordinances that inhibit and expand diverse and healthy Iowa food production, processing, marketing and accessibility;</li> <li>• Partner with the Office of Iowa Food Systems to develop an on-going food system report card which evaluates the health of Iowa's food system and makes recommendations that advance diverse and healthy Iowa food production, processing, marketing and accessibility.</li> </ul>	✓	
iii. Establish regional food system councils appointed by county Boards of Supervisors and Boards of Health to: <ul style="list-style-type: none"> <li>• Establish communication and coordination among county agencies, institutions and municipalities related to food systems issues;</li> <li>• Conduct periodic regional food system assessments which includes:               <ul style="list-style-type: none"> <li>– A food system policy audit identifying county and municipal statutes and ordinances that inhibit and expand diverse Iowa food production, processing, marketing and accessibility;</li> <li>– A regional food system report card that evaluates the health of the region's food system; and</li> <li>– Recommendations to advance resilient and healthy regional food production, processing, marketing and accessibility.</li> </ul> </li> <li>• Partner with the Office of Iowa Food Systems, private and non-profit entities on research and programs related to Iowa's food system.</li> </ul>	✓	✓

<sup>19</sup> Acronyms are listed at the beginning of the report

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# Production Sector

Production is the process of growing food, feed, fiber and fuel by the cultivation of certain plants and the raising of livestock. The scale, methods and type of food production varies widely across Iowa but includes small, mid-sized and large farming operations; backyard, community, workplace and school gardens/orchards; fishing; hunting and foraging.

## Snapshot of Food Production in Iowa

- In 1950, there were approximately 206,000 farms on 34.8 million acres in Iowa. Today, there are fewer than 93,000 farms cultivating 30 million acres.<sup>20</sup>
- The diversity of Iowa agriculture products has decreased from 34 different commodities produced in 1920 to 11 commodities produced today.<sup>21</sup> The top five agriculture commodities in Iowa are corn, soybeans, hogs, cattle and eggs.<sup>22</sup>
- Iowa leads the country in corn and soybean production. In 2009, more than 44 percent of the Iowa corn crop was for ethanol production, 25 percent for livestock feed, 15 percent for exports and 10 percent processed for human consumption (starch, sweeteners, oil, flour).<sup>23</sup>
- In 1929, Iowa produced vegetables on 52,915 acres. Today, less than 10,000 acres are devoted to vegetable production. In 1929, Iowa had 63,185 acres of fruit orchards; today, less than 3,000 acres.<sup>24,25</sup> Iowa ranks 42 and 38 in vegetable and fruit production, respectively.<sup>26</sup>
- The U.S. has developed a greater reliance on other countries to produce food. In the last ten years, imports of fresh produce have doubled.<sup>27</sup>
- The commoditization of agriculture has reduced the biodiversity of foods. With more than 7,000 species of plants available for food, wheat, rice and corn account for 60% of the total caloric intake in the human diet.<sup>28</sup>
- The quality of Iowa's streams has improved in the last five years, however the average water quality score still remains in the poor category.<sup>29</sup>

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<sup>20</sup> USDA. *2007 Census of Agriculture*. Iowa Data. USDA National Agricultural Statistics Service, December 2009.

<sup>21</sup> Compiled by Michael Carolan. Iowa State University, Sociology Department; Updated by Andrew Benjamin, Leopold Center for Sustainable Agriculture, Iowa State University (2002). Data is available from the US Census of Agriculture.

<sup>22</sup> USDA. *2007 Census of Agriculture*. Iowa Data. USDA National Agricultural Statistics Service, December 2009.

<sup>23</sup> Iowa Corn Growers Association. *2009 Iowa Corn Usage (slides)*. February 2010. <http://www.iowacorn.org/cms/en/CornEducation/CornEducation.aspx>

<sup>24</sup> Pirog R, Paskiet Z. *A Geography of Taste. Iowa's Potential for Developing Place-Based and Traditional Foods*. Ames, IA:Leopold Center for Sustainable Agriculture; 2004.

<sup>25</sup> USDA. *2007 Census of Agriculture*. Iowa Data. USDA National Agricultural Statistics Service, December 2009.

<sup>26</sup> USDA. *2007 Census of Agriculture*. Iowa Data. USDA National Agricultural Statistics Service, December 2009.

<sup>27</sup> Huang S, Huang K. *Increased U.S. Imports of Fresh Fruits and Vegetables*. USDA, Economic Research Service, Report #FTS-328-01, September 2007. <http://www.ers.usda.gov/Publications/fts/2007/08Aug/fts32801/fts32801.pdf>.

<sup>28</sup> Eyzaguirre P, Padulosi S, Hodgkin T. IPGRI's strategy for neglected and underutilized species and the human dimension of agrobiodiversity. In S. Padulosi, ed. *Priority-setting for Underutilized and Neglected Plant Species of the Mediterranean Region*. Rome, Italy:International Plant Genetic Resources Institute (IPGRI);1999.

<sup>29</sup> Iowa Department of Natural Resources. *2010 State of the Environment Report*. 2010. Page 19. <http://www.iowadnr.gov/files/2010report.pdf>

- In the last decade, the estimated annual sheet and rill erosion on Iowa cropland has fluctuated. Cultivated cropland in Iowa continues to lose an average of 5.2 tons of soil per acre each year.<sup>30</sup> It is estimated that Iowa has lost 50 percent of the topsoil in the last 100 years.<sup>31</sup>
- Climate change will have a significant impact on Iowa agriculture.<sup>32</sup>

## Food System Report Card At-A-Glance

Food System Sectors	Domains			
	Economic	Environment	Fair Food & Farming	Food Access & Health
Production	1. Market value of fruits and vegetables as a percent of total value of Iowa agriculture products			4. Percent of acres of agriculture land in Iowa producing fruits and vegetables
		2. Average Iowa Water Quality Index		
		3. Estimated average annual sheet and rill erosion on Iowa cropland (tons per acre per year, total cultivated and non-cultivated)		

<sup>30</sup> U.S. Department of Agriculture. 2009. Summary Report: 2007 National Resources Inventory, Natural Resources Conservation Service, Washington, DC, and Center for Survey Statistics and Methodology, Iowa State University, Ames, Iowa. Page 88, Table 12. [http://www.nrcs.usda.gov/technical/NRI/2007/2007\\_NRI\\_Summary.pdf](http://www.nrcs.usda.gov/technical/NRI/2007/2007_NRI_Summary.pdf)

<sup>31</sup> Veenstra J. Iowa has lower-quality topsoil than 50 years ago. Iowa State University. February 2009. <http://www2.iastate.edu/~nscentral/news/2009/feb/veenstra.shtml>

<sup>32</sup> Iowa Climate Change Impacts Committee. *Climate Change Impacts on Iowa 2010* (January 2011). <http://www.iowadnr.gov/iccac/files/completereport.pdf>.



# Production Sector Recommendations Series #1



## Indicator 1. Market value of fruits and vegetables as a percent of total value of Iowa agriculture products (Table 3)

Domain	Recommendations	State	Local	Partners	Impacts
<b>Economic</b>	1a. Assess, develop and adopt diverse financing initiatives for small and mid-size fruit and vegetable producers in Iowa for economic development and improved health. For example: <ul style="list-style-type: none"> <li>• Property tax abatements;</li> <li>• Short-term financial assistance;</li> <li>• Loan guarantee programs;</li> <li>• Tax credits based on hours of labor; and</li> <li>• Cooperative purchasing and marketing agreements.</li> </ul>	✓	✓	Banking associations BOS IDALS IDED IFSC ISU Ag economists Legislature RC&D Tax experts	Economic Health
	1b. Incorporate small and mid-sized food production and processing as a targeted Value Added Agriculture industry for Iowa supported with a minimum of five percent allocation of Iowa Department of Economic Development funds.	✓		Banking associations BOS IDALS IDED	Economic
	1c. Assess, develop and adopt an Iowa Agriculture and Farm Worker Job Creation Tax Credit for small and mid-sized diversified farms that hire one or more new workers.	✓		IDALS IDED IFSC ISU Ag economists IWD Legislature	Economic Social

**TABLE 3. MARKET VALUE OF FRUITS & VEGETABLES AS A PERCENT OF TOTAL VALUE OF IOWA AGRICULTURE PRODUCTS**

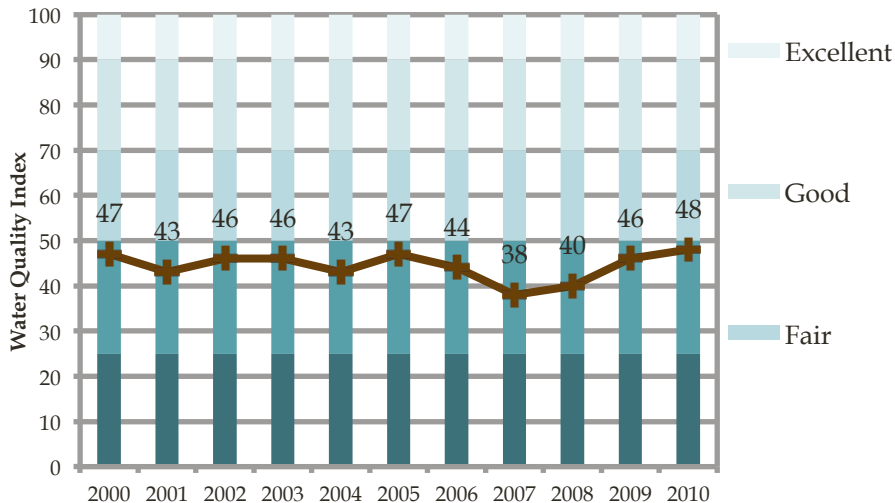
	1997	2002	2007
Total market value of all fruits and vegetables in Iowa*	\$3,602,000	\$23,987,000	\$23,681,000
Total value of agriculture products sold in Iowa	\$12,162,165,000	\$12,273,634,000	\$20,418,096,000
Market value of fruits and vegetables as a percent of total agriculture products in Iowa	<b>0.030%</b>	<b>0.195%</b>	<b>0.116%</b>
* Includes the market value of vegetables, melons, potatoes, sweet potatoes, fruits, tree nuts and berries			
Sources: USDA 2007 Census of Agriculture, State of Iowa Profile. <a href="http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Iowa/index.asp">http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Iowa/index.asp</a> ; USDA 2002 Census of Agriculture, State of Iowa Profile. <a href="http://www.agcensus.usda.gov/Publications/2002/Volume_1_Chapter_2_US_State_Level/st99_2_002_002.pdf">http://www.agcensus.usda.gov/Publications/2002/Volume_1_Chapter_2_US_State_Level/st99_2_002_002.pdf</a> .			

# Production Sector Recommendations Series #2

## ↑ Indicator 2. Average Iowa Water Quality Index-waterways that are very poor, poor or fair (Figure 7)

Domain	Recommendations	State	Local	Partners	Impacts
Environment	2a. Assess, develop and implement an “Adopt an Iowa Waterway” community-based water monitoring program in which organizations or individuals monitor water quality and provide data to the Iowa Department of Natural Resources.	✓	✓	Environmental NGOs IDALS IDNR IFSC EPA Non-profits RC&D SWCD	Economic Environment Health
	2b. Adopt a policy that increases by ten percent per year landowner development of multi-species buffer strips placed along all Iowa waterways on agricultural land.	✓	✓	BOS Environmental NGOs Farm NGOs IDALS IDNR IFSC Legislature RC&D SWCD	Economic Environment

**FIGURE 7. AVERAGE IOWA WATER QUALITY INDEX SCORES**



Source: According to the IDNR, the Iowa Water Quality Index works by measuring different factors that affect fish and aquatic life, drinking water, recreation and aesthetics. Data is collected from approximately 75 sites on major Iowa rivers. These variables are placed into an equation that gives an overall reading of the health of Iowa’s streams and rivers.<sup>33</sup>

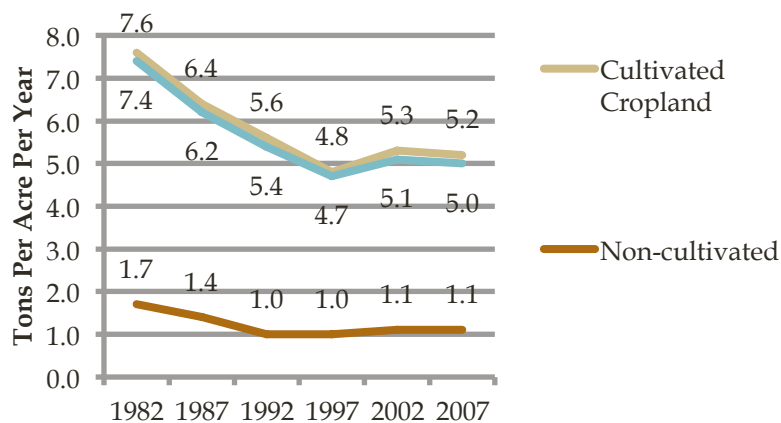
<sup>33</sup> Iowa Department of Natural Resources. 2010 State of the Environment Report. 2010. Page 19. <http://www.iowadnr.gov/files/2010report.pdf>

# Production Sector Recommendations Series #3

## Indicator 3. Estimated average annual sheet and rill erosion on Iowa cropland-tons per acre per year, total cultivated and non-cultivated (Figure 8)

Domain	Recommendations	State	Local	Partners	Impacts
Environment	<p>3a. Assure the Iowa Department of Agriculture and Land Stewardship enforces Iowa Soil 2000 legislation by working with the Soil and Water Conservation District Commissioners. For example:</p> <ul style="list-style-type: none"> <li>Apply consistent application of regulations across districts;</li> <li>Reconfigure drainage districts based on watersheds versus counties;</li> <li>Establish conservation priorities;</li> <li>Resolve soil loss complaints;</li> <li>Establish acceptable soil loss limits;</li> <li>Publish an annual report;</li> <li>Approve soil conservation plans;</li> <li>And assist the management of district funds and personnel.</li> </ul>	✓	✓	Environmental NGOs Farm NGOs IDALS IDNR RC&D SWCD	Environment
	<p>3b. Assess, develop and adopt incentives, resources and technical assistance for Iowa farmers to establish comprehensive farm conservation plans.</p>	✓	✓	Environmental NGOs IDALS IDNR ISUE RC&D SWCD USDA	Economic Environment

**FIGURE 8. ESTIMATED AVERAGE ANNUAL SHEET AND RILL EROSION ON IOWA CROPLAND**



Source: U.S. Department of Agriculture. 2009. Summary Report: 2007 National Resources Inventory, Natural Resources Conservation Service, Washington, DC, and Center for Survey Statistics and Methodology, Iowa State University, Ames, Iowa. Page 88, Table 12. [http://www.nrcs.usda.gov/technical/NRI/2007/2007\\_NRI\\_Summary.pdf](http://www.nrcs.usda.gov/technical/NRI/2007/2007_NRI_Summary.pdf)

# Production Sector Recommendations Series #4

## Indicator 4. Percent acres of farmland in Iowa producing fruits and vegetables (Table 4)

Domain	Recommendations	State	Local	Partners	Impacts	
Food Access & Health	4a. Implement solutions to assure maximum safety of foods produced in Iowa. For example: <ul style="list-style-type: none"> <li>• Provide comprehensive Good Agricultural Practices (GAP) training and technical assistance programs;</li> <li>• Provide insurance coverage such as crop, liability, and health, specifically to small and mid-sized producers and processors; and</li> <li>• Opportunities for cost-share program for food safety audits.</li> </ul>	✓		IDALS IDIA IID ISUE RC&D	Health Economic Environment	
	4b. Assess and develop tools for adoption by Iowa municipalities and counties to perform land inventories of public properties with the goal of determining suitability for food production such as urban farms, community gardens/orchards and municipal edible landscapes. The inventory may include: vacant lots/land; under-utilized school land, Brownfield sites, rooftops, utility right-of-ways, alleys, boulevards, medians, and easements.			✓	BOS City Councils Farm NGOs IFSC APA-IC ISAC ISUE Urban Ag NGOs	Health Economic Environment Social
	4c. Assess and develop sample ordinances for adoption by Iowa municipalities and counties that support urban farms and backyard, school, and community gardens/orchards.			✓	BOS City Councils IFSC APA-IC ISAC Urban Ag NGOs	Health Economic Environment Social
	4d. Assess and develop ordinances for adoption by Iowa municipalities and counties that offer incentives to developers of residential and mixed-use projects to incorporate food system features into plans. For example: <ul style="list-style-type: none"> <li>• Edible landscaping;</li> <li>• School, community, or rooftop food gardens/orchards;</li> <li>• Year-round farmers' markets; and</li> <li>• Healthy food retail.</li> </ul>			✓	BOS City Councils Economic development APA-IC ISAC Urban Ag NGOs	Health Economic Environment Social

**TABLE 4. PERCENT FARMLAND IN IOWA PRODUCING FRUITS AND VEGETABLES**

	1997	2002	2007
Total acres in farms	32,313,119	31,729,490	30,747,550
Total acres fruit and vegetable harvested	17,596	13,589	12,922
Percent acres in Iowa producing fruit and vegetables	0.054	0.043	0.042
Sources: USDA US Agriculture Census - <a href="http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/Iowa/st19_1_001_001.pdf">http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/Iowa/st19_1_001_001.pdf</a> ; 1997 and Earlier Census Table at <a href="http://www.agcensus.usda.gov/Publications/1997/Vol_1_National,_State_and_County_Tables/Iowa/ia-15/ia1_01.pdf">http://www.agcensus.usda.gov/Publications/1997/Vol_1_National,_State_and_County_Tables/Iowa/ia-15/ia1_01.pdf</a> . Note: reporting of specialty crops is not consistent from year to year. 1997 (vegetables, orchards); 2002 (vegetables, potatoes, sweet potatoes, orchards); 2007 (vegetables, sweet potatoes, orchards)			

# Transformation Sector

Food transformation, often called processing, is when raw agricultural products are changed into a food product intended for human or animal consumption. Once raw products and ingredients are reformulated into another food product, it is packaged, labeled and ready for market. Food manufacturers create marketing and promotion plans to move products into wholesale and retail markets. Transformation does not include home preservation such as freezing, canning or drying.

## Snapshot of Food Processing in Iowa

- Since 1997, the number of fruit and vegetable canning, pickling and drying facilities has decreased by 50 percent to only four facilities in Iowa.<sup>34</sup>
- In 2007, there were ten poultry processing facilities in Iowa, only five facilities employed less than 20 employees for local farmers' use.<sup>35</sup>
- The agriculture and food-processing sector have some of the highest rates of worker injuries.
- Nationally, meat and grain processing industries have become very concentrated with four companies controlling almost 85 percent of the beef packing industry; four companies controlling more than 66 percent of the pork packing market; and four companies controlling 80 percent of the soybean crushing business.<sup>36</sup>
- In 1940, there were 488 creameries in Iowa. In 1995, one creamery remained in operation.<sup>37</sup> In 1965, there were more than 550 small meat processors in Iowa. Today, there are less than 200.<sup>38</sup>

## Food System Report Card At-A-Glance

Food System Sectors	Domains			
	Economic	Environment	Fair Food & Farming	Food Access & Health
Transformation	5. Percent of fruit and vegetable canning, pickling and drying facilities of total food manufacturers in Iowa			7. Incidence of nonfatal injuries/illnesses in animal slaughtering and processing in Iowa
	6. Number of poultry processing facilities in Iowa with less than 20 employees			

<sup>34</sup> 2007 Economic Census, Manufacturing, Iowa Data, available at [http://factfinder.census.gov/servlet/IBQTable?\\_bm=y&-geo\\_id=04000US19&-fds\\_name=EC0700A1&-ds\\_name=EC0731A1&-lang=en](http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=04000US19&-fds_name=EC0700A1&-ds_name=EC0731A1&-lang=en)

<sup>35</sup> US Census Bureau, Sector 31: EC0731A1: Manufacturing: Geographic Area Series: Industry Statistics for the States, Metropolitan and Micropolitan Statistical Areas, Counties, and Places: 2007.

<sup>36</sup> Hendrickson M, Heffernan W. *Concentration of Agricultural Markets*. Columbia, MO: University of Missouri; April 2007. <http://www.foodcircles.missouri.edu/consol.htm>

<sup>37</sup> LaGrange W. *Iowa's Dairy Foods Processing Industry*. DSL-3. Ames, IA: Iowa State University Extension; 1996.

<sup>38</sup> Personal correspondence. Arion Thiboumery, Iowa State University; email dated March 20, 2008.

# Transformation Sector Recommendations Series #5



## Indicator 5. Percent of fruit and vegetable canning, pickling and drying facilities of total food manufacturers in Iowa (Table 5)

Domain	Recommendations	State	Local	Partners	Impacts
Economic	5a. Assess, develop and implement online resources to assist with development of Iowa commercial kitchens for value-added food processing. For example: <ul style="list-style-type: none"> <li>• Tools for accessing available licensed kitchen space;</li> <li>• Database of available licensed kitchens;</li> <li>• Start-up materials;</li> <li>• Funding opportunities;</li> <li>• Legal considerations such as user agreements and insurance requirements for commercial, commissary and co-op kitchen rentals;</li> <li>• Food safety training; and</li> <li>• Licensing requirements.</li> </ul>	✓	✓	Anti-hunger NGOs BOS City Council IDALS IDIA IFSC ISUE RC&D	Economic Health Social
	5b. Assess, develop and adopt financial incentives for small and mid-sized food processors in Iowa, especially fruit and vegetable processors. For example: <ul style="list-style-type: none"> <li>• Property tax abatement programs;</li> <li>• Food enterprise development parks;</li> <li>• Streamlined fees and permitting processes;</li> <li>• Sales tax exemptions such as those provided to large processors;</li> <li>• Tax credits for on-farm processing modernization or expansion;</li> <li>• Low-interest loans;</li> <li>• Grants; and</li> <li>• Low-cost or no-cost job training for food workers.</li> </ul>	✓	✓	BOS Foundations IBA IDALS IDED IFSC ISUE RC&D	Economic Social

**TABLE 5. PERCENT FRUIT AND VEGETABLE CANNING, PICKLING AND DRYING FACILITIES OF TOTAL FOOD MANUFACTURERS IN IOWA**

	1997	2002	2007
Number of fruit & vegetable canning, pickling, & drying facilities <sup>a</sup>	8	9	4
Total food manufacturing establishments <sup>b</sup>	441	509	485
Percent of fruit and vegetable canning, pickling and drying facilities of total food manufacturers	1.81%	1.77%	0.82%
a) NAICS Code 31142 - This industry comprises establishments primarily engaged in manufacturing canned, pickled, and dried fruits, vegetables, and specialty foods. Establishments in this industry may package the dried or dehydrated ingredients they make with other purchased ingredients. Examples of products made by these establishments are canned juices; canned baby foods; canned soups (except seafood); canned dry beans; canned tomato-based sauces, such as catsup, salsa, chili, spaghetti, barbeque, and tomato paste, pickles, relishes, jams and jellies, dried soup mixes and bullions, and sauerkraut. b) NAICS Code 311 - Industries in the Food Manufacturing subsector transform livestock and agricultural products into products for intermediate or final consumption. The industry groups are distinguished by the raw materials (generally of animal or vegetable origin) processed into food products. The food products manufactured in these establishments are typically sold to wholesalers or retailers for distribution to consumers, but establishments primarily engaged in retailing bakery and candy products made on the premises not for immediate consumption are included.			
Sources: 1997 Economic Census, Manufacturing, Iowa Data; available at <a href="http://www.census.gov/epcd/ec97/ia/IA000_31.HTM#N311">http://www.census.gov/epcd/ec97/ia/IA000_31.HTM#N311</a> ; 2002 Economic Census, Manufacturing, Iowa Data, available at <a href="http://www.census.gov/econ/census02/data/ia/IA000_31.HTM">http://www.census.gov/econ/census02/data/ia/IA000_31.HTM</a> ; 2007 Economic Census, Manufacturing, Iowa Data, available at <a href="http://factfinder.census.gov/servlet/IHQTable?_bm=y&amp;-geo_id=04000US19&amp;-fds_name=EC0700A1&amp;-ds_name=EC0731A1&amp;-lang=en">http://factfinder.census.gov/servlet/IHQTable?_bm=y&amp;-geo_id=04000US19&amp;-fds_name=EC0700A1&amp;-ds_name=EC0731A1&amp;-lang=en</a>			

# Transformation Sector Recommendations Series #6

## Indicator 6. Number of poultry processing facilities in Iowa with less than 20 employees (Table 6)

Domain	Recommendations	State	Local	Partners	Impacts
Economic	6a. Assess, develop and maintain small, regional USDA-inspected poultry processing units for regions in Iowa that lack poultry processing capacity. This may include mobile poultry processing units.	✓	✓	County economic development IDALS IDED IDIA IMPA IPA ISUE Legislature RC&D USDA	Economic
	6b. Increase training and technical assistance for small and mid-sized Iowa food processors. For example: <ul style="list-style-type: none"> <li>• Food processing training programs to increase job skills and opportunities for workers;</li> <li>• Field Specialist with Iowa State University Extension trained in small and mid-sized food processing; and</li> <li>• Tools for food processors to assess and increase efficiency, productivity and profitability.</li> </ul>	✓		Community Colleges IDALS IDED IDIA IFSC ISUE IWD	Economic

**TABLE 6. 2007 NUMBER OF POULTRY PROCESSING FACILITIES IN IOWA WITH LESS THAN 20 EMPLOYEES**

	Number of establishments	Establishments with less than 20 employees
Number of poultry processing facilities in Iowa <sup>a</sup>	10	5
Number of animal slaughtering and processing establishments <sup>b</sup>	154	93
a) NAICS Code 311615 - This U.S. industry comprises establishments primarily engaged in (1) slaughtering poultry and small game and/or (2) preparing processed poultry and small game meat and meat byproducts. b) NAICS Code 3116 - This industry group comprises establishments primarily engaged in one or more of the following: (1) slaughtering animals; (2) preparing processed meats and meat byproducts; and (3) rendering and/or refining animal fat, bones, and meat scraps. This industry includes establishments primarily engaged in assembly cutting and packing of meats (i.e., boxed meats) from purchased carcasses.		
Sources: References: US Census Bureau, Sector 31: EC0731A1: Manufacturing: Geographic Area Series: Industry Statistics for the States, Metropolitan and Micropolitan Statistical Areas, Counties, and Places: 2007. Available at <a href="http://factfinder.census.gov/servlet/IBQTable?_bm=y&amp;-geo_id=04000US19&amp;-fds_name=EC0700A1&amp;-ds_name=EC0731A1&amp;-_lang=en">http://factfinder.census.gov/servlet/IBQTable?_bm=y&amp;-geo_id=04000US19&amp;-fds_name=EC0700A1&amp;-ds_name=EC0731A1&amp;-_lang=en</a> . No data is available for these NAICS Codes in 2002 or 1997.		

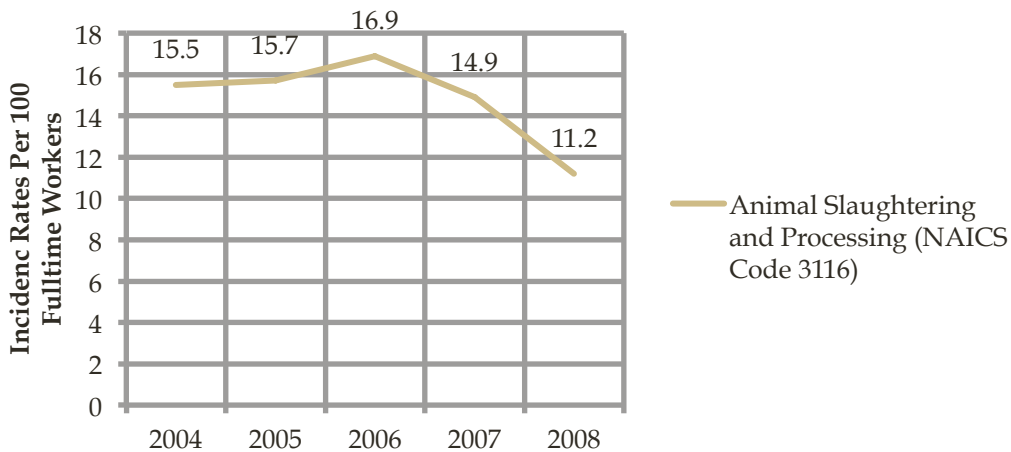
# Transformation Sector Recommendations Series #7



## Indicator 7. Incidence of Nonfatal Worker Injuries/Illnesses in Animal Slaughtering and Processing in Iowa (Figure 9)

Domain	Recommendation	State	Local	Partners	Impacts
Fair Food & Farming	<p>7a. Research and report on the safety and social justice issues of workers in Iowa's food production, processing and food service industries. For example:</p> <ul style="list-style-type: none"> <li>• State and federal enforcement of worker protection laws;</li> <li>• Comprehensive monitoring and reporting systems to track farm, processing and food service safety and social justice issues; and</li> <li>• Wage equity for food system workers.</li> </ul>	✓		Farm NGOs ICRC ICRC IDED IFSC IWD Farmworker NGOs	Economic Health Social

**FIGURE 9. IOWA INCIDENCE RATES OF NONFATAL WORKER INJURIES/ILLNESSES IN ANIMAL SLAUGHTERING AND PROCESSING (PER 100 FULL-TIME WORKERS)**



**NAICS Code 3116** - This industry group comprises establishments primarily engaged in one or more of the following: (1) slaughtering animals; (2) preparing processed meats and meat byproducts; and (3) rendering and/or refining animal fat, bones, and meat scraps. This industry includes establishments primarily engaged in assembly cutting and packing of meats (i.e., boxed meats) from purchased carcasses.

**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Survey of Occupational Injuries and Illnesses, in cooperation with participating State agencies. <http://bls.gov/iif/oshwc/osh/os/pr086ia.pdf>



# Distribution, Marketing & Retail Sector

*Food distribution* moves and stores food products. Distribution is heavily supported by infrastructure such as roads, trucks, rail, air and ships - each of which is dependent upon non-renewable fossil fuels. Warehousing is critical to assure foods remain at the appropriate temperature and minimizes food contamination. As energy costs rise, it directly impacts the ability to transport and store food.

*Food marketing* may be as direct as a farmer selling fruits and vegetables at a farmers' market or be very complicated and involve dozens of producers and companies, as in making a processed food.

*Food retail* includes the various outlets in which eaters have access to and purchase food. This may include mega stores, supermarkets, convenience stores, gas stations, corner markets, liquor stores, food cooperatives, restaurants, cafeterias, vending machines, farmers' markets and community supported agriculture farms.

## Snapshot of Food Distribution, Marketing & Retail in Iowa

- Since 1997, there has been a decline in total number of grocery stores in Iowa; there has been an increase in the number of warehouse/mega stores and gasoline stations with food.<sup>39</sup>
- Fresh produce purchased in Iowa has traveled an average of 1,500 miles, whereas locally produced food travels an average of 56 miles.<sup>40</sup>
- Farmers' markets are increasing in Iowa to 229 farmers' markets.<sup>41</sup>
- According to the Centers for Disease Control and Prevention, 63.6 percent of the Census tracts in Iowa have a Healthy Food Retailer within ½ mile. The U.S. average is 72.0 percent.<sup>42</sup>

## Food System Report Card At-A-Glance

Food System Sectors	Domains			
	Economic	Environment	Fair Food & Farming	Food Access & Health
Distribution, Marketing & Retail	8. Dollar value of Iowa agricultural products sold to Iowans for human consumption			9. Number of farmers' markets per 100,000 Iowans
				10. Number of Healthy Food Retailers per 100,000 Iowans

<sup>39</sup> NAICS Code #44711; 1498 in 1997 to 1622 in 2007.

<sup>40</sup> Pirog R, Benjamin R. *Checking the Food Odometer: Comparing Food Miles for Local vs Conventional Produce Sales in Iowa*. Ames, IA: Leopold Center for Sustainable Agriculture. 2003.

<sup>41</sup> Number of farmers markets in Iowa; Iowa Department of Agriculture and Land Stewardship; Mike Bevins; <http://apps.ams.usda.gov/FarmersMarkets/Default.aspx>

<sup>42</sup> Centers for Disease Control and Prevention. State Indicator Report on Fruits and Vegetables, 2009. Policy and Environmental Indicators. [http://www.fruitsandveggiesmatter.gov/health\\_professionals/statereport.html](http://www.fruitsandveggiesmatter.gov/health_professionals/statereport.html)

# Distribution Sector Recommendations Series #8

↓ **Indicator 8. Dollar value of Iowa agricultural products sold to Iowans for human consumption (Table 7)**

Domain	Recommendation	State	Local	Partners	Impacts
Economic	8a. Assess, develop and implement regional food hubs for aggregation, processing and distribution across Iowa to make larger quantities of Iowa produced food available for retailers and institutional buyers.	✓	✓	County economic development Distributors Farm NGOs IDALS IDED IDIA IFC IFSC IFVGA ISUE RC&D	Economic Health Social
	8b. Assess, develop and implement an online Iowa food procurement resource program with tools for private and public institutions (i.e., schools, hospitals, long-term care facilities, universities, restaurants, and correctional facilities) to increase purchases of Iowa produced foods.	✓		Farm NGOs IDALS IDED IDIA IDPH IFC IFSC IFVGA IMPA ISUE LCSA	Economic Health
	8c. Assess, develop and adopt procurement policies requiring Iowa public institutions and agencies that purchase food to purchase a minimum of 10 percent of Iowa produced foods by 2015.	✓		Governor's Office IFSC Legislature	Economic Health Social

**TABLE 7. DOLLAR VALUE OF IOWA AGRICULTURE PRODUCTS SOLD TO INDIVIDUALS FOR HUMAN CONSUMPTION**

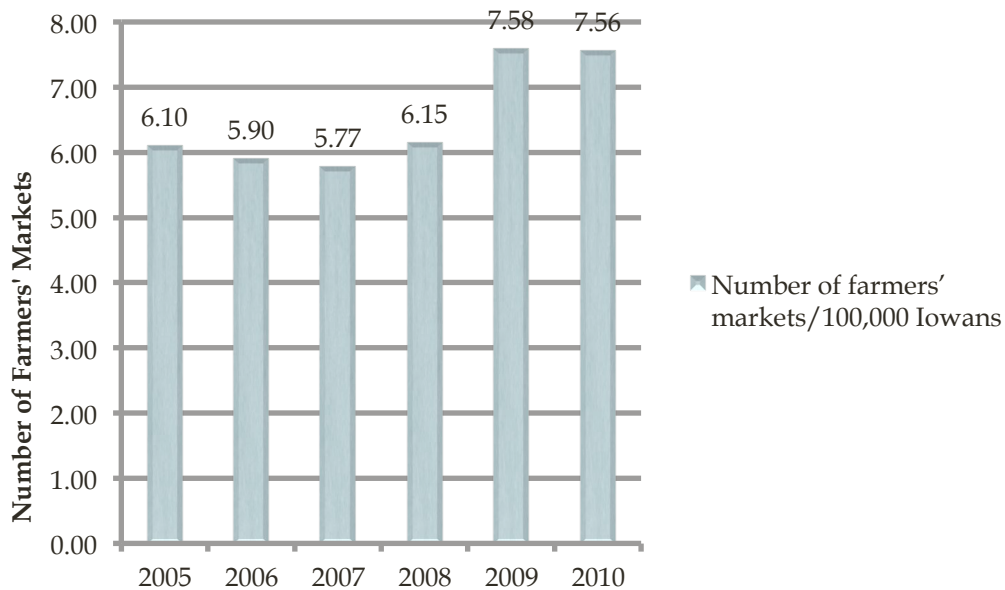
	1997	2002	2007
Value of Iowa agriculture products sold directly to individuals for human consumption	\$7,686,000	\$11,651,000	\$16,506,000
Total value of Iowa agriculture products sold	\$12,162,165,000	\$12,273,634,000	\$20,418,096,000
Sources: 2007 Census of Agriculture, State Profile; <a href="http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Iowa/index.asp">http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Iowa/index.asp</a> ; 1997 and 2002 State Profiles: <a href="http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/Iowa/st19_1_002_002.pdf">http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_1_State_Level/Iowa/st19_1_002_002.pdf</a>			

# Distribution Sector Recommendations Series #9

## Indicator 9. Number of farmers' markets per 100,000 Iowans (Figure 10)

Domain	Recommendation	State	Local	Partners	Impacts
Food Access & Health	9a. Assess, develop and adopt policies and programs that increase Iowan's access to farmers' markets and healthy Iowa-produced food and create economic opportunities for Iowa food producers and retailers. For example:	✓		IBA IDALS IDED IDHS IDIA IDPH IFC IFMA IFSC IFVGA ISAC ISUE Legislature	Economic Health Social
	<ul style="list-style-type: none"> <li>• Mobile farmers' markets;</li> <li>• Healthy food street carts;</li> <li>• Year-round permanent markets;</li> <li>• Online food ordering systems;</li> <li>• EBT machines at authorized farmers' market; and</li> <li>• Co-locating farmers' markets at federal nutrition feeding sites.</li> </ul>				

**FIGURE 10. NUMBER OF FARMERS' MARKETS PER 100,000 IOWANS**



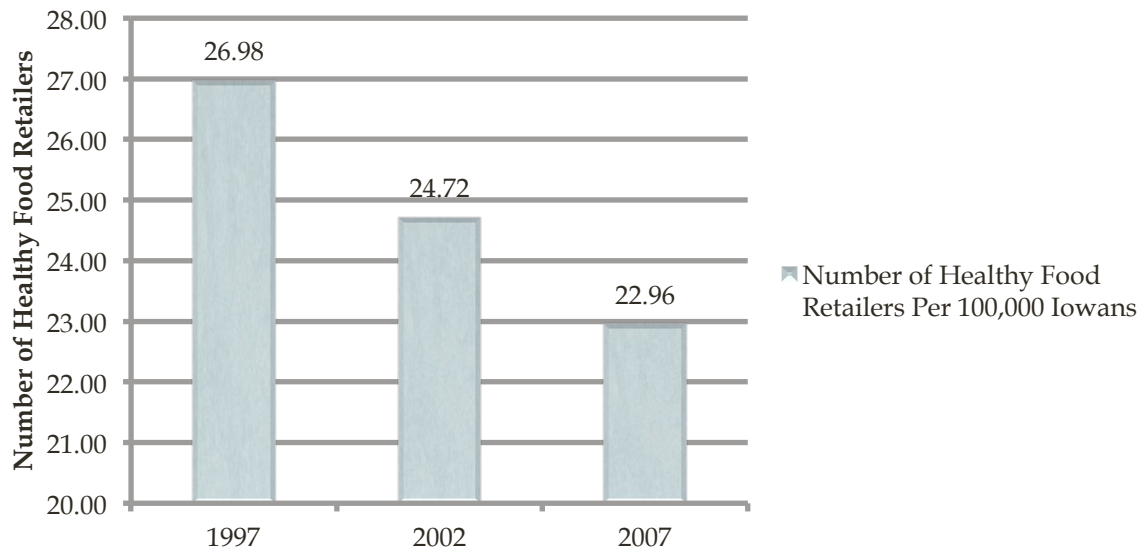
**Sources:** Estimated Iowa population by five-year age groups, State Library of Iowa, State Data Center Program; Iowa population estimates 2000-2009 - <http://data.iowadatabase.org/datatables/State/stage5yearselectbysex20002009.pdf>. Projections of total population for Iowa - <http://data.iowadatabase.org/datatables/State/stprojectionsageby5byselbysex20002030.pdf>; Number of farmers markets in Iowa; Iowa Department of Agriculture and Land Stewardship; Mike Bevins; <http://apps.ams.usda.gov/FarmersMarkets/Default.aspx>

# Distribution Sector Recommendations Series #10

## Indicator 10. Number of Healthy Food Retailers per 100,000 Iowans (Figure 11)

Domain	Recommendation	State	Local	Partners	Impacts
Food Access & Health	10a. Establish an Iowa healthy food retail initiative to increase availability of fruits and vegetables (indicated by percent shelf space for fruits and vegetables) in grocery and convenience stores. For example:	✓	✓	BOS City Councils Foundations	Economic Health Social
	<ul style="list-style-type: none"> <li>Tax incentives to increase shelf space for fruits and vegetables in municipalities that do not have a grocery store;</li> <li>Land use and zoning allowances for healthy food retail in mixed-residential and commercial buildings;</li> <li>Reduction in required parking for healthy food retail; and</li> <li>Tax incentives for developers who incorporate healthy food retail in new or revitalized mixed-use developments.</li> </ul>			IBA IDALS IDED IFSC IGIA ISUE Legislature Non-profits	

**FIGURE 11. NUMBER OF HEALTHY FOOD RETAILERS PER 100,000 IOWANS**



**Source:** 1997 Economic Census, Manufacturing, Iowa Data; available at [http://www.census.gov/epcd/ec97/ia/IA000\\_44.HTM#N445](http://www.census.gov/epcd/ec97/ia/IA000_44.HTM#N445); 2002 Economic Census, Manufacturing, Iowa Data, available at [http://www.census.gov/econ/census02/data/ia/IA000\\_44.HTM#N445](http://www.census.gov/econ/census02/data/ia/IA000_44.HTM#N445); 2007 Economic Census, Manufacturing, Iowa Data, available at [http://factfinder.census.gov/servlet/IBQTable?\\_bm=y&-ds\\_name=EC0744A1&-geo\\_id=04000US19&-search\\_results=01000US&-\\_lang=en&-fds\\_name=EC0700A1](http://factfinder.census.gov/servlet/IBQTable?_bm=y&-ds_name=EC0744A1&-geo_id=04000US19&-search_results=01000US&-_lang=en&-fds_name=EC0700A1). For the purposes of the *Iowa Food System Blueprint*, healthy food retail includes:

- NAICS 445110 - Supermarkets and Large Grocery Stores (except convenience stores) - This industry comprises establishments generally known as supermarkets and grocery stores primarily engaged in retailing a general line of food, such as canned and frozen foods; fresh fruits and vegetables; and fresh and prepared meats, fish, and poultry. Included in this industry are delicatessen-type establishments primarily engaged in retailing a general line of food.
- NAICS 445230 Fruit and Vegetable Markets - This industry group comprises establishments primarily engaged in retailing specialized lines of food.
- NAICS 452910 Warehouse Clubs and Supercenters - This industry comprises establishments known as warehouse clubs, superstores or supercenters primarily engaged in retailing a general line of groceries in combination with general lines of new merchandise, such as apparel, furniture, and appliances.

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## Food Access & Consumption Sector

Food access and consumption is the eater's point of contact, or interface, with food and the steps needed to prepare food for eating. Food access may be purchasing food at a grocery store, convenience store, restaurant, community supported agriculture farm, farm stand or farmers' market. The interface may also include accessing fresh food from a garden or orchard, acquiring food from emergency food assistance programs or using benefits supplied by federal food and nutrition programs (i.e., SNAP and WIC) to purchase food.

Consuming food requires knowledge and skills to identify and appropriately store, prepare and serve foods. Food preservation, such as freezing, canning or drying, enables longer-term storage of food at the household level.

*Household food security* means access by all members at all times to enough food for an active, healthy life. Food security includes the ready availability of nutritionally adequate and safe foods, and the ability to acquire acceptable foods in socially acceptable ways (without resorting to emergency food supplies, scavenging, stealing, or other coping strategies).<sup>43</sup>

*Health* is a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity.<sup>44</sup> Individual health is a result of the ability to access food and the nutritional quality, quantity and safety of food consumed.

### Snapshot of Food Access and Consumption in Iowa

- More than \$8.1 billion is spent on food in Iowa each year (\$4.8 billion in food and beverage stores and \$3.3 billion in the food service).<sup>45</sup> It is estimated that more than 85 percent of the food consumed by Iowans is imported in to Iowa.<sup>46</sup>
- More than \$600 million was spent on food within federally funded food and nutrition assistance programs within Iowa in 2009. This includes school lunch and breakfast programs, fresh fruit and vegetable program, summer feeding program, SNAP, WIC, WIC Farmers' Market Nutrition Program, Senior Farmers' Market Nutrition Program, and Child and Adult Care Food Programs.<sup>47</sup>
- Fruit and vegetable consumption is directly linked to the prevention of diet-related chronic disease.
- Less than 13 percent of Iowa adults eat five servings of fruits and vegetables per day and less than nine percent of Iowa adolescents eat five servings of fruits and vegetables per day.<sup>48</sup>

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<sup>43</sup> USDA Economic Research Service. Food Security in the United States. Measuring Household Food Security. <http://www.ers.usda.gov/Briefing/FoodSecurity/measurement.htm>

<sup>44</sup> Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19–22 June 1946; signed on 22 July 1947 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100); and entered into force on 7 April 1948.

<sup>45</sup> US Census Bureau. FactFinder Query. <http://factfinder.census.gov>




<sup>46</sup> 1998 Survey of Buying Power. Sales and Marketing Management. 1998

<sup>47</sup> Soulis J. Presentation at the Iowa Food Access & Health Working Group Meeting. October 2010. Note: this does not include administrative or technology expenses.

<sup>48</sup> Centers for Disease Control and Prevention. State Indicator Report on Fruits and Vegetables, 2009. Behavioral Indicators Fruit and Vegetable Consumption. [http://www.fruitsandveggiesmatter.gov/health\\_professionals/data\\_behavioral.html](http://www.fruitsandveggiesmatter.gov/health_professionals/data_behavioral.html)

- In 2008, almost 12 percent of Iowa households were identified as having low or very low food security (hunger). This represents a 3.6 percent increase in ten years.<sup>49</sup>
- In 2009, almost 50 percent of the Iowa farmers' markets accepted SNAP EBT with sales of \$62,000.<sup>50,51</sup>
- Rates of diet-related chronic diseases are rising among Iowa adults, youth and children. More than two-thirds of Iowa adults are overweight or obese.<sup>52</sup> Since 1996, there has been more than a 60% increase in the rate of diabetes in Iowa.<sup>53</sup>
- Almost a third of low-income Iowa children between two and five years of age are overweight or at risk of being overweight.<sup>54</sup>
- Researchers have predicted that because of the dramatic rise in obesity and related chronic diseases, especially among young people, Iowans may witness a decline in life expectancy by as much as five years over the next few decades. Iowa children may have shorter life spans than their parents.<sup>55</sup>
- It is estimated that the total annual economic cost of overweight and obesity in the United States and Canada caused by medical costs, excess mortality and disability is approximately \$300 billion.<sup>56</sup> In 2009 Iowa's direct costs attributable to obesity are estimated to be more than \$783 million, of which Medicaid and Medicare pay 34 percent, or \$263 million.<sup>57</sup>

### Food System Report Card At-A-Glance

Food System Sectors	Domains			
	Economic	Environment	Fair Food & Farming	Food Access & Health
Access & Consumption	11. Value of SNAP EBT purchases at Iowa farmers' markets 		12. Percent of Iowa households with low and very low food security (hunger) 	13. Percent of Iowa adults who are overweight and obese 

<sup>49</sup> USDA ERS, 11/16/09; [www.ers.usda.gov/Publications/ERR29/ERR29i.pdf](http://www.ers.usda.gov/Publications/ERR29/ERR29i.pdf); Prepared by State Library of Iowa, State Data Center Program - <http://data.iowadatabase.org/datatables/UnitedStates/usstfoodinsecurity19962008.pdf>. Accessed Sept. 7, 2010.

<sup>50</sup> Centers for Disease Control and Prevention. State Indicator Report on Fruits and Vegetables, 2009. [http://www.fruitsandveggiesmatter.gov/health\\_professionals/data\\_policy.html](http://www.fruitsandveggiesmatter.gov/health_professionals/data_policy.html).

<sup>51</sup> Iowa Department of Human Services, correspondence. 2010.

<sup>52</sup> Centers for Disease Control and Prevention. NCCDPH prevalence and trends data from BRFSS available at <http://apps.nccd.cdc.gov/brfss/display.asp?TrendValue=2&state=IA&cat=OB&yr=0&qkey=4409&grp=0&SUBMIT5=Go>. (Overweight = Body Mass Index 25.0 to 29.9; Obese = Body Mass Index 30.0+)

<sup>53</sup> *Annual Report - Survey Results from the 2005 Iowa Behavioral Risk Factor Surveillance System*. Des Moines, IA: Iowa Department of Public Health; 2006

<sup>54</sup> *2005 Pediatric Nutrition Surveillance System*. Des Moines, IA: Iowa Department of Public Health, Bureau of Nutrition and Health Promotion; 2007.

<sup>55</sup> Olshansky S, et al. A potential decline in life expectancy in the United States in the 21st Century. *NEJM*. 2005;352:1138-1145.

<sup>56</sup> Behan D, Cox S. *Obesity and its Relation to Mortality and Morbidity Costs*. Committee on Life Insurance Research, Society of Actuaries. December 2010.

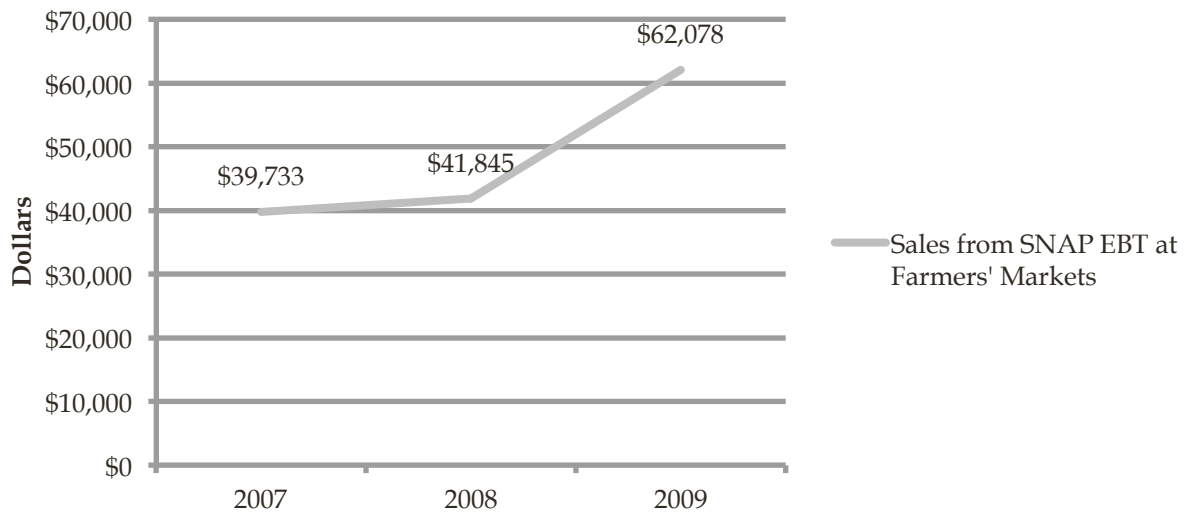
<sup>57</sup> Finkelstein E, Fiebelkorn I, Wang G. State-level estimates of annual medical expenditures attributable to obesity. *Obesity Research*. 2004;12(1):18-24.

# Access & Consumption Recommendations Series #11

## ↑ Indicator 11. Value of SNAP EBT purchases at Iowa Farmers' Markets (Figure 12)

Domain	Recommendation	State	Local	Partners	Impacts
Economic	<p>11a. Assess, develop and adopt strategies to increase the purchase of fruits and vegetables at farmers' markets by low-income lowans. For example:</p> <ul style="list-style-type: none"> <li>Secure financial support (i.e., foundations, health insurance companies, government agencies) to provide incentives for Supplemental Nutrition Assistance Program (SNAP) participants to purchase fruit and vegetables;</li> <li>Use public-private partnerships to purchase wireless electronic benefits transfer (EBT) devices; and</li> <li>Launch coordinated outreach, education and marketing initiatives targeted to farmers' market managers, vendors and low-income lowans (i.e., SNAP, WIC and Senior Farmers' Market Nutrition Program).</li> </ul>	✓		Anti-hunger NGOs Farm NGOs Foundations IDALS IDHS IDPH IFMA Insurance industry	Economic Health Social

**FIGURE 12. VALUE OF SNAP EBT PURCHASES AT IOWA FARMERS' MARKETS**



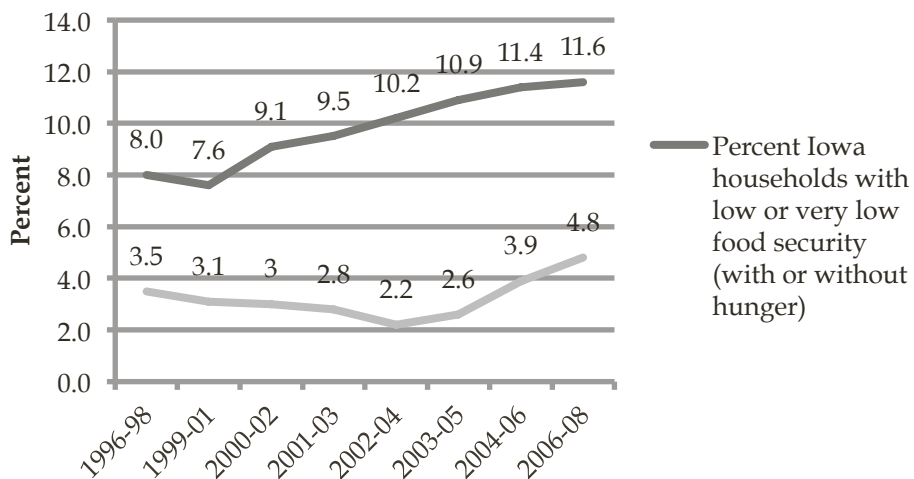
Source: Iowa Department of Human Services, 2010

# Access & Consumption Recommendations Series #12

## ↑ Indicator 12. Percent of Iowa households with low and very low food security – hunger (Figure 13)

Domain	Recommendation	State	Local	Partners	Impacts
Fair Food & Farming	12a. Assess, develop and adopt municipal transportation policies that increase access to healthy food for all Iowans. For example: <ul style="list-style-type: none"> <li>• Bus routes that connect Iowans to farmers' markets, healthy food retail, emergency food sites, and federal food programs; and</li> <li>• Sidewalks, pedestrian walkways and bike paths to healthy food venues.</li> </ul>		✓	Anti-hunger NGOs BOS County/City transportation planners IFSC Transportation groups	Economic Environment Health Social
	12b. Develop and implement an Iowa Culinary Corps Program at emergency food sites in Iowa for low-income Iowans to gain work experience and increased job skills.	✓	✓	Anti-hunger NGOs Community Colleges Foundations IDE IDED IDHS IDPH IWD Universities	Economic Social

**FIGURE 13. PERCENT IOWA HOUSEHOLDS WITH LOW OR VERY LOW FOOD SECURITY**



Source: USDA Economic Research Service, November 16, 2009; [www.ers.usda.gov/Publications/ERR29/ERR29i.pdf](http://www.ers.usda.gov/Publications/ERR29/ERR29i.pdf); Prepared by State Library of Iowa, State Data Center Program - <http://data.iowadatacenter.org/datatables/UnitedStates/usstfoodinsecurity19962008.pdf>.

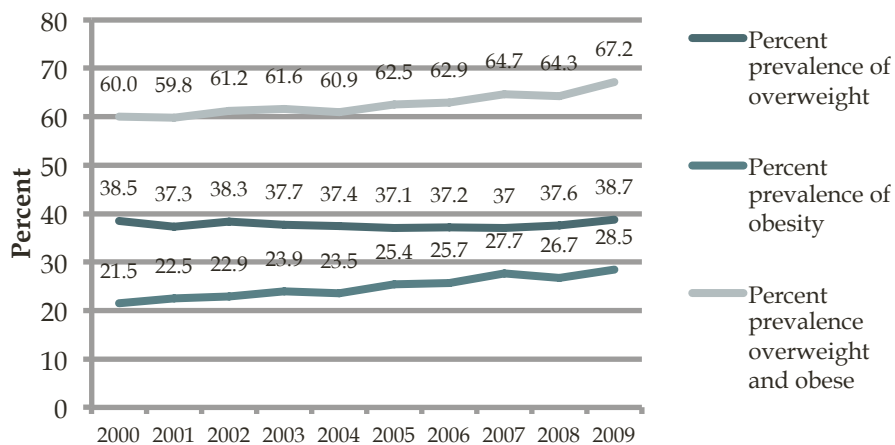


# Access & Consumption Recommendations Series #13

## ↑ Indicator 13. Percent Iowa adults who are overweight and obese (Figure 14)

Domain	Recommendation	State	Local	Partners	Impacts
Food Access & Health	13a. Assess, develop and adopt comprehensive education curricula on health and food systems (from production to waste management) to decrease rates of chronic disease in Iowans for K-12, community colleges, colleges and universities, and continuing education for health professionals.	✓	✓	Health associations Healthcare organizations IDALS IDE IDPH Insurance industry Legislature Non-profits PTA/O Regents School boards	Economic Environment Health Social
	13b. Establish policy in which the Iowa Department of Public Health and county public health departments include food system indicators in their Community Health Needs Assessment and Health Improvement Plans (CHNA & HIP).	✓	✓	BOH BOS IDPH IFSC LPHA Professional Health Groups	Environment Health

**FIGURE 14. PERCENT IOWA ADULTS THAT ARE OVERWEIGHT OR OBESE**



**Source:** Centers for Disease Control and Prevention. NCCDPH prevalence and trends data from BRFSS available at <http://apps.nccd.cdc.gov/brfss/display.asp?TrendValue=2&state=IA&cat=OB&yr=0&qkey=4409&grp=0&SUBMIT5=Go>. Accessed Sept 9, 2010. Overweight is a Body Mass Index of 25.0 to 29.9; Obesity is a Body Mass Index of 30.0+.

# Waste Management Sector

Waste management includes food waste and food-related packaging resulting from growing, processing, packaging, labeling, transporting, selling, purchasing, preparing and consuming food. The process of waste management includes the collection, transportation, processing, recycling and disposal of food waste and food-related packaging across all sectors of the food system. This includes residential, commercial and industrial food wastes. Waste management has human health, environmental and economic impacts.

## Snapshot of Food Waste Management in Iowa

- Little data is collected on food and food-related packaging waste and recycling in Iowa.
- No communities in Iowa have a residential or commercial food waste composting program.
- Few businesses that have large amounts of food waste have connected with emergency food assistance programs, area farmers, composting operations and other handling companies to reuse/recycle the food waste.
- According to the Iowa Department of Natural Resources, the percent of total food waste within municipal solid waste (MSW) streams has increased from 7.8 percent in 1990 to 10.6 percent (225,000 tons) 2005. In 2005, almost 12 percent of metropolitan residential waste was food waste.<sup>58</sup>
- The collection of food waste represents significant opportunities for composting, specifically, nourishing soil to increase humus and fertility, and generating methane for energy.
- Although waste from food-related packaging is not calculated, the disposed paper component of the MSW stream in 2005 included more than 642,800 tons of materials that could be recovered through composting and recycling.<sup>59</sup>

## Food System Report Card At-A-Glance

Food System Sector	Domain			
	Economic	Environment	Fair Food & Farming	Food Access & Health
Waste Management		14. Percent total food waste per Iowa statewide municipal solid waste composition	↑	

<sup>58</sup> Iowa Department of Natural Resources. Iowa Statewide Waste Characterization Study 1998 and 2006; [www.iowadnr.gov/waste/sw/files/charstudy.pdf](http://www.iowadnr.gov/waste/sw/files/charstudy.pdf); [www.iowadnr.gov/waste/sw/files/wastechar05.pdf](http://www.iowadnr.gov/waste/sw/files/wastechar05.pdf)

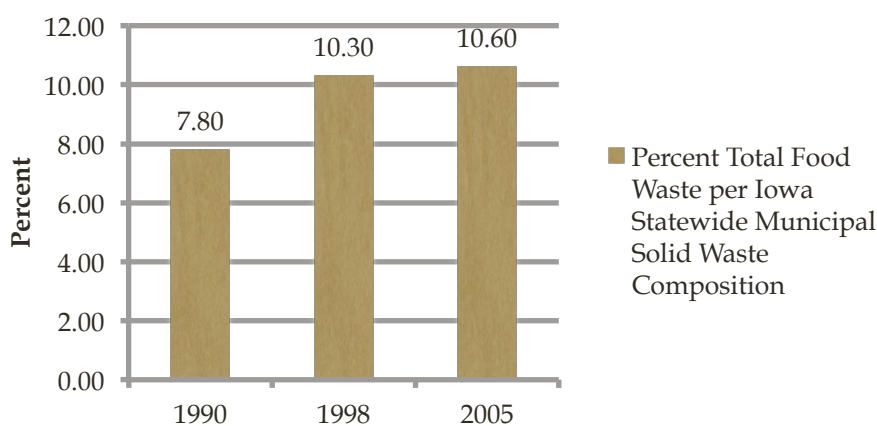
<sup>59</sup> Iowa Department of Natural Resources. Iowa Statewide Waste Characterization Study 1998 and 2006; [www.iowadnr.gov/waste/sw/files/charstudy.pdf](http://www.iowadnr.gov/waste/sw/files/charstudy.pdf); [www.iowadnr.gov/waste/sw/files/wastechar05.pdf](http://www.iowadnr.gov/waste/sw/files/wastechar05.pdf)

# Waste Management Recommendations Series #14

## Indicator 14. Percent Total Food Waste per Iowa Statewide Municipal Solid Waste Composition (Figure 15)

Domain	Recommendations	State	Local	Partners	Impacts
Environment	14a. Assess, develop and implement an Iowa compost program that provides assistance to residents and businesses to compost food waste and food packaging. For example: <ul style="list-style-type: none"> <li>• Markets for food waste;</li> <li>• Financial incentives for businesses to compost food waste;</li> <li>• Partnerships between waste authorities and food producers; and</li> <li>• Household and community compost programs.</li> </ul>	✓	✓	City Councils Environmental NGOs IDNR IDPH IWE MWA Non-profits Recycling industries	Economic Environment
	14b. Assess, develop and implement a food recovery program that diverts healthy, safe, institutional and retail food from Iowa landfills to emergency food systems.	✓	✓	Anti-hunger NGOs Cafeterias Caterers Emergency food providers Foundations Grocery stores IDALS IFSC IRA IWE Restaurants	Economic Environment Health

**FIGURE 15. PERCENT TOTAL FOOD WASTE PER IOWA STATEWIDE MUNICIPAL SOLID WASTE COMPOSITION**



**Source:** Iowa Statewide Waste Characterization Study, Iowa Department of Natural Resources, 1998 and Feb 2006; [www.iowadnr.gov/waste/sw/files/charstudy.pdf](http://www.iowadnr.gov/waste/sw/files/charstudy.pdf); [www.iowadnr.gov/waste/sw/files/wastechar05.pdf](http://www.iowadnr.gov/waste/sw/files/wastechar05.pdf). Food wastes include food preparation wastes, food scraps and spoiled food. It does not include agricultural or industrial food wastes.

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## Appendix A. History of the Iowa Food Policy Councils

The first Iowa Food Policy Council (IFPC) was established in March 2000 by Iowa Governor Vilsack through Executive Order 16 and was administered by Drake University Agricultural Law Center.

Support came from federal grants and Drake University. The IFPC provided a vehicle for networking, communication, examining the Iowa food system and reporting to the Governor's office policy recommendations to improve the food system in Iowa, especially focused on food security issues and local food production. To extend the work of the IFPC, Executive Orders 19, 29 and 38 were issued by Governor Vilsack. IFPC activity ceased in 2006 as a result of a change in Governor.

The first IFPC consisted of 21 citizen members, appointed by the Governor and represented diverse food-related sectors (local producers; food processors, distributors and retailers; cooperative extension representatives; urban agriculture representatives; academicians; researchers; agriculture policy and legal experts, health professionals, professionals working with immigrant populations; and food security experts). Seven appointed ex-officio state agency advisors representing agriculture, economic development, health, education, elder affairs, inspections, and human services also served on the first IFPC.

Six subcommittees and several task forces were formed including the Food Security and Health Task Force, the Institutional Purchasing Task Force and the Promoting Local Foods Task Force. Notable achievements of the Food Security and Health Task Force were the recognition by Congress for leadership and contributions in improving the operation of Iowa's food assistance programs and the Hunger in Iowa Report.

## Appendix B. Iowa Food Systems Strategic Planning Process & Stakeholders

1000 Friends of Iowa  
 Abbe Hills Farm  
 City of Des Moines  
 ISU Community Vitality Center  
 ISU College of Agriculture and Life  
 Des Moines University  
 DMARC  
 Drake Agricultural Law Center  
 Environmental Law & Policy Center  
 Environmental Nutrition Solutions  
 Food Bank of Iowa  
 Grow Your Small Market Farm Network  
 HyVee, Inc.  
 Iowa Association of Water Agencies  
 Iowa Beef Producers  
 Iowa Department of Agriculture and Land Stewardship  
 Iowa Department of Cultural Affairs  
 Iowa Department of Economic Development  
 Iowa Department of Education  
 Iowa Department of Human Services  
 Iowa Department of Inspections & Appeals  
 Iowa Department of Natural Resources  
 Iowa Department of Public Health  
 Iowa Department on Aging  
 Iowa Department of Human Services  
 Iowa Dietetic Association  
 Iowa Egg Council/Iowa Poultry Association  
 Iowa Environmental Council  
 Iowa Farm Bureau Federation  
 Iowa Farm-Church Discussion Group  
 Iowa Farmers Union  
 Iowa Food Bank Association  
 Iowa Governor's Office  
 Iowa Grocery Industry Association  
 Iowa League of RC&Ds  
 Iowa Network for Community Agriculture  
 Iowa Policy Project  
 Iowa Pork Producers  
 Iowa Poultry Association  
 Iowa Public Health Association  
 Iowa Restaurant Association  
 Iowa State University College of Ag  
 Iowa State University College of Design  
 Iowa State University Extension-Ag and Natural Resources  
 Iowa State University Extension-Sociology  
 Iowa Turkey Federation/Iowa Turkey Marketing Council  
 Iowa Valley RC&D  
 Iowa Workforce Development  
 Leopold Center for Sustainable Agriculture  
 Linn County Planning  
 Local Foods Connection  
 National Catholic Rural Life Conference  
 National Center for Appropriate Technology  
 Northeast Iowa Food & Fitness Initiative  
 Northeast Iowa Food Bank  
 Pathfinders NRCS  
 Pottawattamie County Farm to Fork Local Food Policy Council  
 Pottawattamie County Local Foods Council  
 Practical Farmers of Iowa  
 Primary Health, Inc.  
 Public Policy Center  
 Roberts Law Firm, PLC

Slow Food USA  
 Southern Iowa RC&D  
 Stir, LLC  
 Story County Board of Supervisors  
 Story County Planning  
 Sysco, Inc.  
 The Soyfoods Council & Soy For Life Foundation  
 The Wallace Centers of Iowa  
 University of Iowa College of Public Health  
 University of Northern Iowa Center for Energy and Environmental Education  
 University of Northern Iowa Center for Immigrant Leadership and Integration  
 Urban Ambassadors  
 USDA Ag Marketing Service  
 USDA Rural Development  
 USDA Natural Resources Conservation Service  
 Wellmark Foundation  
 Women, Food and Agriculture Network  
 Woodbury County Rural Economic Development



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## Appendix C. Iowa Food Systems Council Vision, Mission and Goals

### Vision

Iowa has a just and diverse food system which supports healthier people, communities, economies and the environment.

### Mission

To recommend policy, research and program options for an Iowa food system which supports healthier Iowans, communities, economies and the environment.

### Goals

The goals of the IFSC are based on core functions (assessment, policy and communication) and key domains (health, environment, economic and social justice).

### Analysis & Evaluation

*Goal 1 - Data Collection.* Collect and objectively analyze data on a regular basis regarding Iowa's food and farming systems to create informed research, program and policy recommendations.

*Goal 2 - Policy Impacts.* Monitor and analyze the health, social, economic and environmental impacts of proposed and existing food and farming policies on Iowa farmers, businesses, communities and citizens.

### Policy

*Goal 3 - Nutrition & Health - Optimize Health.* Develop and recommend policy, research and program options which support systems that produce safe and nutritious food for healthier Iowans.

*Goal 4 - Nutrition & Health - Food Access.* Develop and recommend policy, research and program options which strengthen food access and self-reliance among all citizens and communities in Iowa.

*Goal 5 - Environment - Natural Resources & Land Use.* Develop and recommend food and farming policy, research and program options which improve, protect and conserve Iowa's natural resources and farmland.

*Goal 6 - Economic - Production/Processing/Business Development.* Develop and recommend policy, research and program options which support economic viability, resilient agricultural diversity and regionalized infrastructure for food and farming systems in Iowa.

*Goal 7 - Economic - Buying & Selling.* Develop and recommend policy, research and program options which promote the buying and selling of Iowa-grown foods by Iowans.

*Goal 8 - Fair Food & Farming.* Develop and recommend policy, research and program options which help assure Iowa's food and farming systems are fair.

### Communication

*Goal 9 - Outreach & Education*

- a. Increase dialogue among food system stakeholders across Iowa.
- b. Cooperate with existing local and state-wide food system groups by providing technical assistance and outreach on food and farming research, program and policy options.
- c. Provide outreach and education to Iowans and legislative/regulatory bodies on food and farming research, program and policy options.

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## Appendix D. Principles of a Healthy, Sustainable Food System

In June 2010, the American Dietetic Association, American Nurses Association, American Planning Association, and American Public Health Association initiated a collaborative process to develop a set of shared food system principles. The following principles are a result of this process and have been collectively endorsed by these organizations.

We support socially, economically, and ecologically sustainable food systems that promote health – the current and future health of individuals, communities, and the natural environment.

A healthy, sustainable food system is:

### HEALTH-PROMOTING

- Supports the physical and mental health of all farmers, workers and eaters
- Accounts for the public health impacts across the entire lifecycle of how food is produced, processed, packaged, labeled, distributed, marketed, consumed and disposed

### SUSTAINABLE

- Conserves, protects, and regenerates natural resources, landscapes and biodiversity
- Meets our current food and nutrition needs without compromising the ability of the system to meet the needs of future generations

### RESILIENT

- Thrives in the face of challenges, such as unpredictable climate, increased pest resistance, and declining, increasingly expensive water and energy supplies

### DIVERSE IN

- Size and scale—includes a diverse range of food production, transformation, distribution, marketing, consumption, and disposal practices, occurring at diverse scales, from local and regional, to national and global
- Geography—considers geographic differences in natural resources, climate, customs, and heritage
- Culture—appreciates and supports a diversity of cultures, socio-demographics, and lifestyles
- Choice—provides a variety of health-promoting food choices for all

### FAIR

- Supports fair and just communities and conditions for all farmers, workers and eaters
- Provides equitable physical access to affordable food that is health promoting and culturally appropriate

### ECONOMICALLY BALANCED

- Provides economic opportunities that are balanced across geographic regions of the country and at different scales of activity, from local to global, for a diverse range of food system stakeholders
- Affords farmers and workers in all sectors of the system a living wage

### TRANSPARENT

- Provides opportunities for farmers, workers and eaters to gain the knowledge necessary to understand how food is produced, transformed, distributed, marketed, consumed and disposed
- Empowers farmers, workers and eaters to actively participate in decision-making in all sectors of the system

A healthy, sustainable food system emphasizes, strengthens, and makes visible the interdependent and inseparable relationships between individual sectors (from production to waste disposal) and characteristics (health-promoting, sustainable, resilient, diverse, fair, economically balanced, and transparent) of the system.



*These principles should not be construed as endorsement by any organization of any specific policy or policies.*

## Appendix E. Iowa Food System Report Card and Recommendations – Master Matrix

Crosscutting Recommendations		State	Local
i.	<p>Establish an Office of Iowa Food Systems directed by a food system professional. Responsibilities shall include:</p> <ul style="list-style-type: none"> <li>Partner with private and non-profit entities focused on improving Iowa's food system;</li> <li>Establish communication and coordination among state agencies and institutions responsible for food system-related programs and regulations;</li> <li>Solicit funding for food systems research initiatives;</li> <li>Coordinate food system data collection;</li> <li>Develop a comprehensive online portal for Iowa food system information and resources;</li> <li>Partner with the Iowa Food Systems Council to develop an on-going food system report card to monitor the health of Iowa's food system and make recommendations to advance resilient and healthy Iowa food production, processing and marketing.</li> </ul>	✓	
ii.	<p>Enlist the Iowa Food Systems Council as the advisory agency to the Governor, Iowa Legislature, and Office of Iowa Food Systems. Activities shall include:</p> <ul style="list-style-type: none"> <li>Coordinate activities with the Office of Iowa Food Systems;</li> <li>Conduct a food system policy audit identifying state statutes, city and county ordinances that inhibit and expand diverse and healthy Iowa food production, processing, marketing and accessibility;</li> <li>Partner with the Office of Iowa Food Systems to develop an on-going food system report card which evaluates the health of Iowa's food system and makes recommendations that advance diverse and healthy Iowa food production, processing, marketing and accessibility.</li> </ul>	✓	
iii.	<p>Establish regional food system councils appointed by county Boards of Supervisors and Boards of Health to:</p> <ul style="list-style-type: none"> <li>Establish communication and coordination among county agencies, institutions and municipalities related to food systems issues;</li> <li>Conduct periodic regional food system assessments which includes: <ul style="list-style-type: none"> <li>A food system policy audit identifying county and municipal statutes and ordinances that inhibit and expand diverse Iowa food production, processing, marketing and accessibility;</li> <li>A regional food system report card that evaluates the health of the region's food system; and</li> <li>Recommendations to advance resilient and healthy regional food production, processing, marketing and accessibility.</li> </ul> </li> <li>Partner with the Office of Iowa Food Systems, private and non-profit entities on research and programs related to Iowa's food system.</li> </ul>	✓	✓

## Food System Sector Recommendations

Sector	Domain	Trend	Recommendation	Implementation			Impacts
				State	Local	Partners	
Production	Economic	↓	<b>Indicator 1. Market value of fruits and vegetables as a percent of total value of Iowa agriculture products</b>				
			<p>1a. Assess, develop and adopt diverse financing initiatives for small and mid-size fruit and vegetable producers in Iowa for economic development and improved health. For example:</p> <ul style="list-style-type: none"> <li>Property tax abatements;</li> <li>Short-term financial assistance;</li> <li>Loan guarantee programs;</li> <li>Tax credits based on hours of labor; and</li> <li>Cooperative purchasing and marketing agreements.</li> </ul>	✓	✓	Banking associations BOS IDALS IDED IFSC ISU Ag economists Legislature RC&D Tax experts	Economic Health
			<p>1b. Incorporate small and mid-sized food production and processing as a targeted Value Added Agriculture industry for Iowa supported with a minimum of five percent allocation of Iowa Department of Economic Development funds.</p>	✓		Banking associations BOS IDALS IDED	Economic
			<p>1c. Assess, develop and adopt an Iowa Agriculture and Farm Worker Job Creation Tax Credit for small and mid-sized diversified farms that hire one or more new workers.</p>	✓		IDALS IDED IFSC ISU Ag economists IWD Legislature	Economic Social



Sector	Domain	Trend	Recommendation	Implementation			Impacts	
				State	Local	Partners		
	Environment	↑	<b>Indicator 2. Average Iowa Water Quality Index (waterways that are very poor, poor or fair)</b>					
		2a.	Assess, develop and implement an "Adopt an Iowa Waterway" community-based water monitoring program in which organizations or individuals monitor water quality and provide data to the Iowa Department of Natural Resources.	✓	✓	Environmental NGOs IDALS IDNR IFSC EPA Non-profits RC&D SWCD	Economic Environment Health	
		2b.	Adopt a policy that increases by ten percent per year landowner development of multi-species buffer strips placed along all Iowa waterways on agricultural land.	✓	✓	BOS Environmental NGOs Farm NGOs IDALS IDNR IFSC Legislature RC&D SWCD	Economic Environment	
		↓	<b>Indicator 3. Estimated average annual sheet and rill erosion on Iowa cropland (tons per acre per year, total cultivated and non-cultivated)</b>					
		3a.	Assure the Iowa Department of Agriculture and Land Stewardship enforces Iowa Soil 2000 legislation by working with the Soil and Water Conservation District Commissioners. For example: <ul style="list-style-type: none"> <li>Apply consistent application of regulations across districts;</li> <li>Reconfigure drainage districts based on watersheds versus counties;</li> <li>Establish conservation priorities;</li> <li>Resolve soil loss complaints;</li> <li>Establish acceptable soil loss limits;</li> <li>Publish an annual report;</li> <li>Approve soil conservation plans;</li> <li>And assist the management of district funds and personnel.</li> </ul>	✓	✓	Environmental NGOs Farm NGOs IDALS IDNR RC&D SWCD	Economic Environment	
		3b.	Assess, develop and adopt incentives, resources and technical assistance for Iowa farmers to establish comprehensive farm conservation plans.	✓	✓	Environmental NGOs IDALS IDNR ISUE RC&D SWCD USDA	Economic Environment	
Food Access & Health		↓	<b>Indicator 4. Percent acres of agriculture land in Iowa producing fruits and vegetables</b>					
		4a.	Implement solutions to assure maximum safety of foods produced in Iowa. For example: <ul style="list-style-type: none"> <li>Provide comprehensive Good Agricultural Practices (GAP) training and technical assistance programs;</li> <li>Provide insurance coverage such as crop, liability, and health, specifically to small and mid-sized producers and processors; and</li> <li>Opportunities for cost-share program for food safety audits.</li> </ul>	✓		IDALS IDIA IID ISUE RC&D	Health Economic Environment	
			4b.	Assess and develop tools for adoption by Iowa municipalities and counties to perform land inventories of public properties with the goal of determining suitability for food production such as urban farms, community gardens/orchards and municipal edible landscapes. The inventory may include: vacant lots/land; under-utilized school land, Brownfield sites, rooftops, utility right-of-ways, alleys, boulevards, medians, and easements.		✓	BOS City Councils Farm NGOs IFSC APA-IC ISAC ISUE Urban Ag NGOs	Health Economic Environment Social

Sector	Domain	Trend	Recommendation	Implementation			Impacts
				State	Local	Partners	
			4c. Assess and develop sample ordinances for adoption by Iowa municipalities and counties that support urban farms and backyard, school, and community gardens/orchards.		✓	BOS City Councils IFSC APA-IC ISAC Urban Ag NGOs	Health Economic Environment Social
			4d. Assess and develop ordinances for adoption by Iowa municipalities and counties that offer incentives to developers of residential and mixed-use projects to incorporate food system features into plans. For example: <ul style="list-style-type: none"> <li>• Edible landscaping;</li> <li>• School, community, or rooftop food gardens/orchards;</li> <li>• Year-round farmers' markets; and</li> <li>• Healthy food retail.</li> </ul>		✓	BOS City Councils Economic development APA-IC ISAC Urban Ag NGOs	Health Economic Environment Social
Transformation/Processing	Economic	↓	<b>Indicator 5. Percent of fruit and vegetable canning, pickling and drying facilities of total food manufacturers in Iowa</b>				
		5a. Assess, develop and implement online resources to assist with development of Iowa commercial kitchens for value-added food processing. For example: <ul style="list-style-type: none"> <li>• Tools for accessing available licensed kitchen space;</li> <li>• Database of available licensed kitchens;</li> <li>• Start-up materials;</li> <li>• Funding opportunities;</li> <li>• Legal considerations such as user agreements and insurance requirements for commercial, commissary and co-op kitchen rentals;</li> <li>• Food safety training; and</li> <li>• Licensing requirements.</li> </ul>	✓	✓	Anti-hunger NGOs BOS City Council IDALS IDIA IFSC ISUE RC&D	Economic Health Social	
		5b. Assess, develop and adopt financial incentives for small and mid-sized food processors in Iowa, especially fruit and vegetable processors. For example: <ul style="list-style-type: none"> <li>• Property tax abatement programs;</li> <li>• Food enterprise development parks;</li> <li>• Streamlined fees and permitting processes;</li> <li>• Sales tax exemptions such as those provided to large processors;</li> <li>• Tax credits for on-farm processing modernization or expansion;</li> <li>• Low-interest loans;</li> <li>• Grants; and</li> <li>• Low-cost or no-cost job training for food workers.</li> </ul>	✓	✓	BOS Foundations IBA IDALS IDED IFSC ISUE RC&D	Economic Social	
		↓	<b>Indicator 6. Number of poultry processing facilities in Iowa with less than 20 employees</b>				
		6a. Assess, develop and maintain small, regional USDA-inspected poultry processing units for regions in Iowa that lack poultry processing capacity. This may include mobile poultry processing units.	✓	✓	County economic development IDALS IDED IDIA IMPA IPA ISUE RC&D USDA	Economic	
6b. Increase training and technical assistance for small and mid-sized Iowa food processors. For example: <ul style="list-style-type: none"> <li>• Food processing training programs to increase job skills and opportunities for workers;</li> <li>• Field Specialist with Iowa State University Extension trained in small and mid-sized food processing; and</li> <li>• Tools for food processors to assess and increase efficiency, productivity and profitability.</li> </ul>	✓		Community Colleges IDALS IDED IDIA IFSC ISUE IWD	Economic			

Sector	Domain	Trend	Recommendation	Implementation			Impacts
				State	Local	Partners	
Distribution/Marketing/Retail	Fair Food & Farming	↓	<b>Indicator 7. Incidence of nonfatal worker injuries/illnesses in animal slaughtering and processing in Iowa</b>				
		7a. Research and report on the safety and social justice issues of workers in Iowa's food production, processing and food service industries. For example: <ul style="list-style-type: none"> <li>State and federal enforcement of worker protection laws;</li> <li>Comprehensive monitoring and reporting systems to track farm, processing and food service safety and social justice issues; and</li> <li>Wage equity for food system workers.</li> </ul>	✓		Farm NGOs ICRC ICRC IDED IFSC IWD Farmworker NGOs	Economic Health Social	
	Economic	↓	<b>Indicator 8. Dollar value of Iowa agricultural products sold to Iowans for human consumption</b>				
		8a. Assess, develop and implement regional food hubs for aggregation, processing and distribution across Iowa to make larger quantities of Iowa produced food available for retailers and institutional buyers.	✓	✓	County economic development Distributors Farm NGOs IDALS IDED IDIA IFC IFSC IFVGA ISAC ISUE RC&D	Economic Health Social	
		8b. Assess, develop and implement an online Iowa food procurement resource program with tools for private and public institutions (i.e., schools, hospitals, long-term care facilities, universities, restaurants, and correctional facilities) to increase purchases of Iowa produced foods.	✓		Farm NGOs IDALS IDED IDIA IDPH IFC IFSC IFVGA IMPA ISUE LCSA	Economic Health	
	8c. Assess, develop and adopt procurement policies requiring Iowa public institutions and agencies that purchase food to purchase a minimum of 10 percent of Iowa produced foods by 2015.	✓		Governor's Office IFSC Legislature	Economic Health Social		
	Food Access & Health	↑	<b>Indicator 9. Number of farmers' markets per 100,000 Iowans</b>				
		9a. Assess, develop and adopt policies and programs that increase Iowan's access to farmers' markets and healthy Iowa-produced food and create economic opportunities for Iowa food producers and retailers. For example: <ul style="list-style-type: none"> <li>Mobile farmers' markets;</li> <li>Healthy food street carts;</li> <li>Year-round permanent markets;</li> <li>Online food ordering systems;</li> <li>EBT machines at authorized farmers' market; and</li> <li>Co-locating farmers' markets at federal nutrition feeding sites.</li> </ul>	✓		IBA IDALS IDED IDHS IDIA IDPH IFC IFMA IFSC IFVGA ISUE Legislature	Economic Health Social	
		↓	<b>Indicator 10. Number of Healthy Food Retailers per 100,000 Iowans</b>				
		10a. Establish an Iowa healthy food retail initiative to increase availability of fruits and vegetables (indicated by percent shelf space for fruits and vegetables) in grocery and convenience stores. For example: <ul style="list-style-type: none"> <li>Tax incentives to increase shelf space for fruits and vegetables in municipalities that do not have a grocery store;</li> <li>Land use and zoning allowances for healthy food retail in mixed-residential and commercial buildings;</li> <li>Reduction in required parking for healthy food retail; and</li> <li>Tax incentives for developers who incorporate healthy food retail in new or revitalized mixed-use developments.</li> </ul>	✓	✓	BOS City Council Foundations IBA IDALS IDED IFSC IGIA ISUE Legislature Non-profits	Economic Health Social	

Sector	Domain	Trend	Recommendation	Implementation			Impacts
				State	Local	Partners	
Accessibility & /Consumption	Economic	↑	<b>Indicator 11. Value of SNAP EBT purchases at Iowa Farmers Markets</b>				
		11a. Assess, develop and adopt strategies to increase the purchase of fruits and vegetables at farmers' markets by low-income Iowans. For example: <ul style="list-style-type: none"> <li>Secure financial support (i.e., foundations, health insurance companies, government agencies) to provide incentives for Supplemental Nutrition Assistance Program (SNAP) participants to purchase fruit and vegetables;</li> <li>Use public-private partnerships to purchase wireless electronic benefits transfer (EBT) devices; and</li> <li>Launch coordinated outreach, education and marketing initiatives targeted to farmers' market managers, vendors and low-income Iowans (i.e., SNAP, WIC and Senior Farmers' Market Nutrition Program).</li> </ul>	✓		Anti-hunger NGOs Farm NGOs Foundations IDALS IDHS IDPH IFMA Insurance industry	Economic Health Social	
	Fair Food & Farming	↑	<b>Indicator 12. Percent of Iowa households with low and very low food security (hunger)</b>				
		12a. Assess, develop and adopt municipal transportation policies that increase access to healthy food for all Iowans. For example: <ul style="list-style-type: none"> <li>Bus routes that connect Iowans to farmers' markets, healthy food retail, emergency food sites, and federal food programs; and</li> <li>Sidewalks, pedestrian walkways and bike paths to healthy food venues.</li> </ul>		✓	Anti-hunger NGOs BOS County/City transportation planners IFSC Transportation groups	Economic Environment Health Social	
	12b. Develop and implement an Iowa Culinary Corps Program at emergency food sites in Iowa for low-income Iowans to gain work experience and increased job skills.	✓	✓	Anti-hunger NGOs Community Colleges Foundations IDE IDED IDHS IDPH IWD Universities	Economic Social		
	Food Access & Health	↑	<b>Indicator 13. Percent Iowa adults who are overweight and obese</b>				
13a. Assess, develop and adopt comprehensive education curricula on health and food systems (from production to waste management) to decrease rates of chronic disease in Iowans for K-12, community colleges, colleges and universities, and continuing education for health professionals.		✓	✓	Health associations Healthcare organizations IDALS IDE IDPH Insurance industry Legislature Non-profits PTA/O Regents School boards	Economic Environment Health Social		
13b. Establish policy in which the Iowa Department of Public Health and county public health departments include food system indicators in their Community Health Needs Assessment and Health Improvement Plans (CHNA & HIP).	✓	✓	BOH BOS IDPH IFSC LPHA Professional Health Groups	Environment Health			

Sector	Domain	Trend	Recommendation	Implementation			Impacts
				State	Local	Partners	
Waste Management	Environment	↑	<b>Indicator 14. Percent Total Food Waste per Iowa Statewide Municipal Solid Waste Composition</b>				
			14a. Assess, develop and implement an Iowa compost program that provides assistance to residents and businesses to compost food waste and food packaging. For example: <ul style="list-style-type: none"> <li>• Markets for food waste;</li> <li>• Financial incentives for businesses to compost food waste;</li> <li>• Partnerships between waste authorities and food producers; and</li> <li>• Household and community compost programs.</li> </ul>	✓	✓	City Councils Environmental NGOs IDNR IDPH IWE MWA Non-profits Recycling industries	Economic Environment
			14b. Assess, develop and implement a food recovery program that diverts healthy, safe, institutional and retail food from Iowa landfills to emergency food systems.	✓	✓	Anti-hunger NGOs Cafeterias Caterers Emergency food providers Foundations Grocery stores IDALS IFSC IRA IWE Restaurants	Economic Environment Health

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Tagtow A, Roberts S. *Cultivating Resilience: A Food System Blueprint that Advances the Health of Iowans, Farms and Communities*. February 2011.

This report is available at [www.IowaFoodSystemsCouncil.org/cultivating-resilience/](http://www.IowaFoodSystemsCouncil.org/cultivating-resilience/)



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