

LIVEWELL COLORADO

# Colorado Food Assessment Framework

Module: Food Transportation & Distribution

2012

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Developed by [Spark Policy Institute](#) and [WPM Consulting](#) for LiveWell Colorado.

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# TABLE OF CONTENTS

I.	BRIEF INTRODUCTION & OVERVIEW .....	3
	BACKGROUND .....	3
	VISION OF THE FOOD ASSESSMENT FRAMEWORK .....	3
	MORE INFORMATION ON THE FAF.....	4
	FOOD ASSESSMENT FRAMEWORK COMPONENTS: FOOD TRANSPORTATION AND DISTRIBUTION .....	4
II.	FOCUS ON FOOD TRANSPORTATION & DISTRIBUTION .....	4
	THE ORIGINS OF FOOD TRANSPORTATION AND DISTRIBUTION.....	4
	DEFINING FOOD TRANSPORTATION AND DISTRIBUTION .....	7
III.	FOOD TRANSPORTATION AND DISTRIBUTION INDICATORS .....	7
	1. WHAT DO OUR LOCAL DISTRIBUTORS LOOK LIKE?.....	8
	2. WHAT IS THE PROFITABILITY OF DISTRIBUTION?.....	10
	3. WHAT IS THE ECONOMIC IMPACT OF DISTRIBUTION? .....	10
	4. HOW DOES OUR COMMUNITY VALUE DISTRIBUTION? .....	11
	5. IS LOCAL DISTRIBUTION AND TRANSPORTATION SUSTAINABLE? .....	12
IV.	IMPLEMENTATION TOOLS .....	13
	RECENT REPORTS AND RESEARCH EXAMINING TRANSPORTATION EMISSIONS .....	13
	PRIMARY DATA COLLECTION INSTRUMENTS .....	13
	1. What Do Our Local Distributors Look like: Tools for Collecting Primary Data.....	13
	2. Does Our Community Value Local Distribution: Tools for Collecting Primary Data .....	14
	3. Is Local Distribution and Transportation Sustainable: Tools for Collecting Primary Data.	14
	APPENDIX A: FOOD TRANSPORTATION & DISTRIBUTION MATRIX .....	15
	REFERENCES .....	20

# I. BRIEF INTRODUCTION & OVERVIEW

## BACKGROUND

In early 2010, the Colorado Department of Public Health and Environment (CDPHE) received a competitive (ARRA Component II) state-based award to advance food systems policy in Colorado. Much of this work was subcontracted to LiveWell Colorado to oversee implementation. One of the primary goals of the state's ARRA grant is to: Support the enhancement and integration of urban, suburban, and rural policies in order to build a permanent farm to school program that supplies fresh and healthy food to Colorado's students while benefiting Colorado's agriculture economy.

An early task in developing farm to school (or any farm to institution) programs, is to better understand the state's food system, and the state's ability to produce, process, transport, sell, and consume a greater degree of state- and locally-grown fresh, healthy foods.

A specific task to achieve the ARRA goals is to develop a "Food Assessment Framework" – the FAF – which will collect information about every aspect of the state's food system in one place and better equip local communities to do the same about their own food systems.

## VISION OF THE FOOD ASSESSMENT FRAMEWORK

The FAF will ultimately be a web-based, interactive tool that communities, regions, or state-level stakeholders could "mine" for information about certain aspects of the food system. The vision is to develop a comprehensive series of indicators, from which a community can select to best meet their needs, which provide information about the state's capacity to produce, process, and transport healthy foods. Additionally, and equally as important, the FAF will provide detailed information about where data is kept, who manages it, how to access it, how to use it and talk about it, who might care about it, and other guidance.

Recently, the University of Missouri's Center for Applied Research and Environment Systems (CARES) released an integrated online database platform, the [CARES National Reporting Tool](#) (NRT), the [CARES National Interactive Maps](#) (NIM), and the [Community Commons](#)<sup>1</sup>, which have over 7,000 indicators pulled from many of the databases identified in the Colorado FAF's four modules. For many communities, the NRT can serve as a "one-stop" site to pull down the secondary indicators in GIS maps and reports.

The online version of the FAF includes access to models, resources, and primary data collection instruments for all aspects of assessing the food system. The tool will enable communities across Colorado to conduct their own local food assessment. Communities will be better equipped to begin such a process, will see other completed models and examples, and will be guided to collect some of the same information as other communities across the state, therefore contributing to a strong, common body of knowledge about the food system across the state of Colorado.

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<sup>1</sup> The Community Commons, launched on October 31, 2011, is a more recent version of NIM, which similarly has the capability to create personalized GIS maps with over 7,000 GIS layers to select among. Throughout the remainder of the Colorado FAF Overview, and the Production, Transportation, Processing, and Access reports, when the NIM is referred to, the Community Commons is interchangeable as a data source.

## **MORE INFORMATION ON THE FAF**

To get started on your community food assessment, see the [Colorado Food Assessment Framework: An Overview and How to Get Started](#). Once you have completed the initial organizing and planning activities, choose this module or one or more of the other modules to dig into those aspects of the food system that are important to your community.

## **FOOD ASSESSMENT FRAMEWORK COMPONENTS: FOOD TRANSPORTATION AND DISTRIBUTION**

Although unseen by consumers, food distribution and transportation is crucial to any well-functioning food system (Unger & Wooten, 2006). The present module considers the variables of food distribution and transportation. A comprehensive examination of food distribution and transportation considers the number and type of direct distributors, wholesaler sales and employment, policies relating to local distribution, the distance food travels, and transportation energy use.

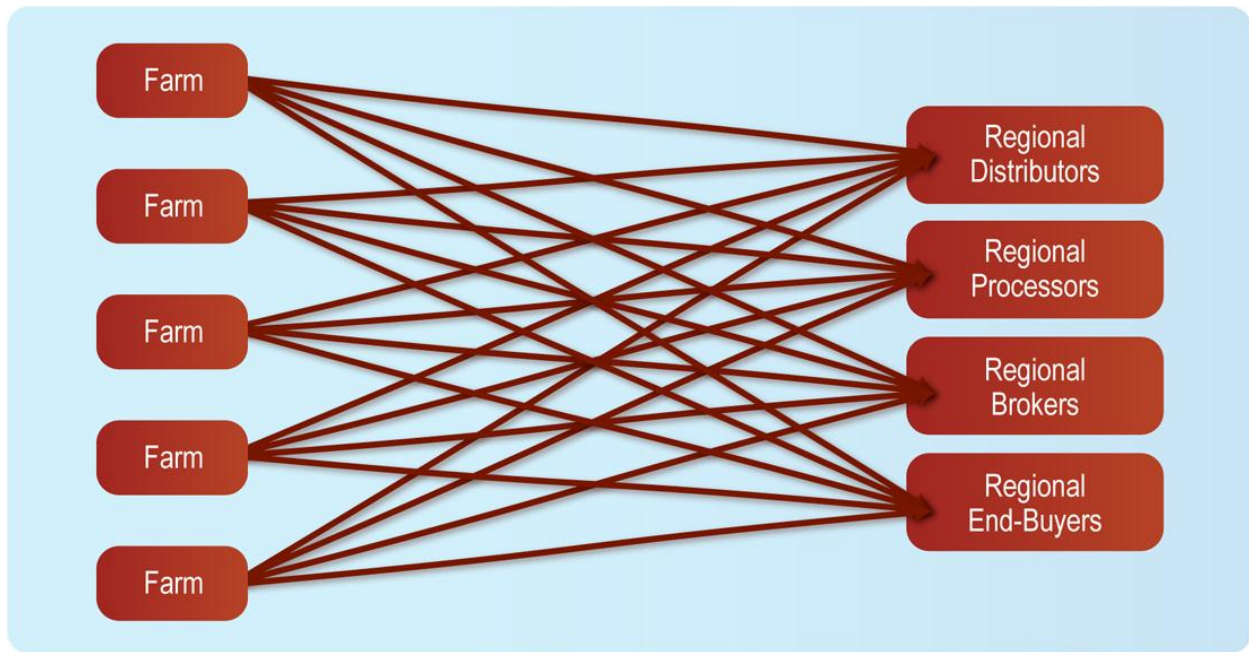
## **II. FOCUS ON FOOD TRANSPORTATION & DISTRIBUTION**

### **THE ORIGINS OF FOOD TRANSPORTATION AND DISTRIBUTION**

Contemporary industrialized and centralized food systems have successfully managed to provide large measures of inexpensive food to numerous people (Biringer, Lee, & Thissen, 2011). However, there are hidden social, economic, and environmental costs to this model, including a problematic inequitable distribution of healthy, affordable food (Biringer et al., 2011). Presently 925 million people suffer from starvation (World Food Programme, 2010), while other parts of the world are afflicted with an obesity epidemic (Biringer et al., 2011). A growing world population implicates that by 2050 an additional two to three billion more people will also need access to food (Biringer et al., 2011). Food access activists concerned about these inequities often emphasize an increase in local production, but this is a limited approach (Clark, Inwood, & Sharp, 2011). The overwhelming majority (90%) of food purchased for at home meals is from retail stores, such as grocery stores (USDA, ERS, 2010), suggesting that distribution of local foods to retail markets should be a significant concern of developing local food systems.

Food distribution and processing are the two steps in the value chain where food moves from production to consumption (Unger & Wooten, 2006). Distribution tends to be a low-margin, capital-intensive process that requires facilities and trucks (Cheng, 2011). Distributors act as a conduit between buyers and producers, providing information regarding supplier inventory and customer needs, operating as both information and product distributors (Cheng, 2011). Distributors additionally can explain complicated regulations to small producers and increase demand for local products through properly identifying and marketing regional food (Cheng, 2011). One advantage of local distributors is their superior ability to trace of the origins and production of food, satisfying locavore needs, and providing a level of information that the present corporate food model cannot, due to its large production scale (Thompson, Harper, & Kraus, 2008).

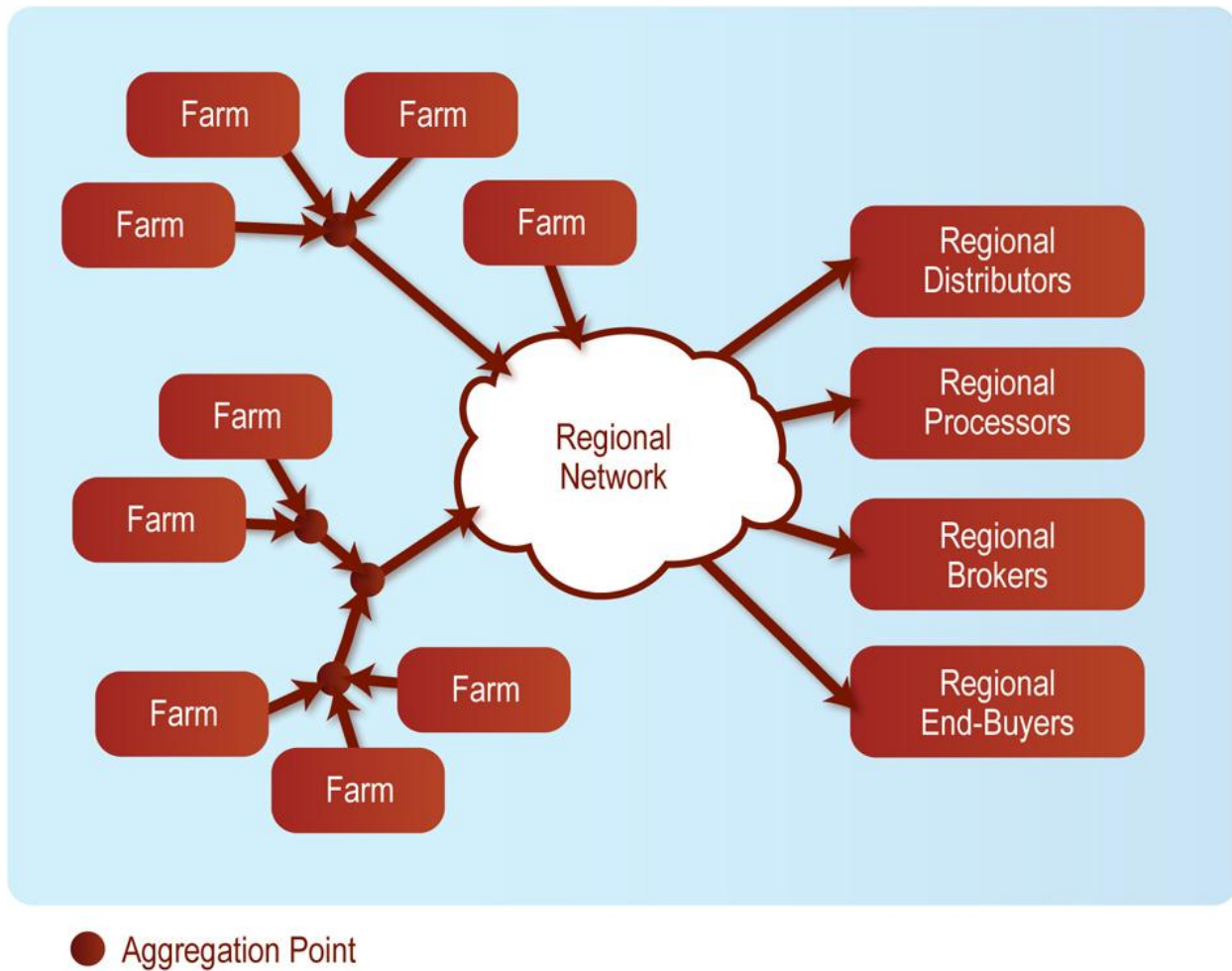
**Figure 1.** Prevalent Inefficient Regional Distribution.



Adapted from Cheng (2011).

Currently, producers receive minimal profits from the retail cost of their products, as transportation, packaging, advertising, energy use, and labor costs drive the value-addition (Unger & Wooten, 2006). Local distribution systems, through eliminating costly transportation distances, enable farmers to earn fair prices and provide low-income and price-sensitive consumers (such as schools) with reasonably priced food (Unger & Wooten, 2006). However, the infrastructure serving local distribution encounters multiple barriers due to inefficient information management regarding harvests, regulations, billing, and inventory (Cheng, 2011). As consumer Awareness of and demand for local food increases, small and medium-sized farms confront a distribution bottleneck (see Figure 1) (Cheng, 2011). Aggregation or shipping points, such as local wholesalers, auction houses, or cooling facilities, are needed to permit local farmers and distributors to share trucks and minimize the number of distribution trips and miles taken (Cheng, 2011). Local shipping points additionally permit distributors to purchase and travel from one location, rather than a variety of local farmer locations (Clark, Inwood, & Sharp, 2011). A network of regional hubs would complement the present corporatized system, by permitting small and medium-sized farms to distribute within their community and regionally (see Figure 2) (Cheng, 2011).

**Figure 2.** Aggregation Enabling an Efficient Regional Network.



Adapted from Cheng (2011).

Although city planners consider shelter, pollution control, and air and water quality when structuring cities, food is commonly overlooked (Roberts, 2001). However, food choices inspire around 80% of sewage, 40% of garbage, 25% of fossil fuel energy use and air pollution, 20% of retail sales, 20% of service jobs, 10% of industrial jobs, 20% of traffic, and 20% of chronic diseases (Roberts, 2001). Despite the major role food plays in cities, urban sprawl has threatened the preservation of agricultural land (Roberts, 2001). Economic challenges endemic in small farming motivate local farmers to sell their land to exurb city developers (Roberts, 2001). Without policies or city planning preserving high quality farm land, development of this land will threaten the food system and access to inexpensive, local food (Unger & Wooten, 2006). A consideration of infrastructure for local distribution is essential in order to increase access of local food products to consumers, and preserve food security (Clark, Inwood, & Sharp, 2011).

Lastly, long-distance food transportation negatively impacts the environment. Due to consolidated production structures, food is transported extensive distances in order to reach consumers (See Figure 3). Additionally, much of transportation involves “redundant trade,” where products are imported from the same location that they are exported (Carter-Whitney, 2010). Local sustainable food systems can

reduce GHG emissions due to minimized food transportation (Cowell & Parkinson, 2003; Pirog, van Pelt, Enshayan, & Cook, 2001).

**Figure 3.** Average Daily Long-Haul Truck Traffic on the National Highway System.



Adapted from U.S. Department of Transportation (2007).

### **DEFINING FOOD TRANSPORTATION AND DISTRIBUTION**

There are several concepts that can be examined regarding the types of data and information in this module. Depending on the goals of a community, indicators can be assessed to convey a variety of concepts. Some of the concepts that may be important to communities include those defined here. An important early step for any state or community is to identify and agree on what concept is critical to convey – in other words, what are the primary (or at least initial) values and goals of the process? A state or community could focus in on understanding a variety of these concepts.

### **III. FOOD TRANSPORTATION AND DISTRIBUTION INDICATORS**

Food distribution within a community comprises multiple components. When assessing distribution in a food system, one examines what types of distributors are community based, whether distribution is profitable for distributors, the economic impact of local distribution, and to what degree community and political support exists for local distributors.

- 1. What Do Our Local Distributors Look like?** Profile of distributors in community.
- 2. What Is the Profitability of Distribution?** Assessment of community distributor sales.
- 3. What Is the Economic Impact of Local Distribution?** Assessment of the fiscal and labor effects of local distributors.



4. **Does Our Community Value Local Distribution?** Assessment of public and political support for community distributors.
5. **Is Local Distribution and Transportation Sustainable?** Assessment of emissions resulting from transportation and distribution.

## 1. WHAT DO OUR LOCAL DISTRIBUTORS LOOK LIKE?

### Direct Distribution

Because direct marketing comprises a limited proportion of all distribution, producers tend to rely on expensive and large distribution companies, an option unavailable for small and local farmers (Unger & Wooten, 2006). As a result, many small farmers choose to enter production contracts with corporate farms, reducing regional accessibility to local food (Unger & Wooten, 2006). Direct distribution programs help to establish preferences for locally grown food and increase collaboration among local businesses involved in the food system (Thompson, Harper, & Kraus, 2008). For example, private sector companies and public institutions that engage in farm-to-table programs encourage local purchase and distribution of food to their cafeterias (Thompson, Harper, & Kraus, 2008). Farm to institution programs demand a streamlined distribution process that customers can afford and rely on, as cost, access, convenience, and consistency are important and inter-related factors for consumers (Cheng, 2011). Regionally based distributors can expedite the institutionalization of farm to school programs (Izumi, Wright, & Hamm, 2010). However, buying food directly contrasts with the present model of school food procurement where limited timelines and budgets result in preferences for “broadline” distributors, or single location organizations where food, supplies, and equipment are all available (Izumi et al., 2010). Consequently, establishment of intermediaries are necessary for local farmers to sell products to, which schools can easily access without administrative burdens (Izumi et al., 2010).

## SECONDARY DATA

### Indicators of direct distribution:

Two indicators describe direct distribution in a community. Data for these indicators are available at the [National Farm to School Network](#) and the [USDA Food Environment Atlas](#). These indicators are additionally available on the [CARES National Interactive Maps](#) platform and the [Community Commons](#).

- **Number of Farm to School Programs:** (county level indicator – Food Atlas; locational – CO-FTS): Number of farm-to-school programs, where “farm-to-school” programs include: direct sourcing from local producers, local sourcing through the Department of Defense procurement system (known as “DOD Fresh”), school gardens, farm tours, farm-related nutrition education or other classroom activities, and school menus and snacks highlighting locally-sourced or locally-available foods.
- **Number of Farm to Institution Programs:** (county level indicator – Food Atlas; locational – CO-FTS): Number of farm-to-institution programs, where “farm-to-institution” programs include: direct sourcing from local producers and local sourcing to institutions such as hospitals, prisons, produce wholesalers, processing operations, and grocery stores.

## PRIMARY DATA

Another indicator describing local direct distribution is the number of farm to restaurant programs. Farm to restaurant programs source directly from local producers to serve restaurant meals. Presently there are no known data sources, and primary data collection must be conducted.



For primary data collection instruments to assess **farm to restaurant programs**, go to [What Do Our Local Distributors Look like: Tools for Collecting Primary Data](#) in the *Primary Data Collection Instruments* section of this document.

### Wholesalers

Food wholesalers transport food from farmers to retail, commercial, processors, and other buyers (Unger & Wooten, 2006). Farm wholesalers are considered “mediated marketers,” as opposed to farm-to-table programs or farmers markets, which are “direct marketers” (Unger & Wooten, 2006). Mediated and direct marketing are two methods of food distribution (Unger & Wooten, 2006). Wholesalers efficiently link farmers and markets to provide end-buyers with affordable food (Unger & Wooten, 2006). If cities have insufficient distribution networks, farmers are forced to rely on distant and centralized wholesalers, rather than local wholesalers (Unger & Wooten, 2006).

## SECONDARY DATA

### Indicators of wholesalers:

Data for on number of wholesalers may be found at the [US Economic Census](#) or at [Local Harvest](#).

- **Number of Wholesalers:** Number of wholesalers, or organizations that purchase large quantities of goods and produce and resell to merchants rather than directly to the end buyer.

## PRIMARY DATA

Additional sources of information on community access and use of wholesalers may be observed in the following indicators: number of hybrid wholesale/retail markets, number of shipping point markets, and number of wholesale/terminal produce markets. Hybrid wholesale/retail markets are organizations selling to both small businesses and individual consumers. Shipping point markets are facilities where fresh food products are cooled, graded, packaged and marketed to wholesalers, distributors, or retail grocers. Lastly, wholesale/terminal produce markets involve wholesalers who sell to grocers, restaurants, institutions, and other businesses (Bragg & Barham, n.d.). Presently there are no known data sources on these indicators and primary data collection must be conducted.

### Distributor Size

Distributor size relates to local farmer access to distribution. Very small and small distributors prefer to buy directly from farmers. Large distributors are less likely to have and less interested in developing

personal relationships with farmers (Clark, 2011). A higher number of very small, small and medium-sized distributors are an indicator of greater opportunity for small farmers.

## PRIMARY DATA

Information on the number, size, and location of distributors indicates the ease with which local farmers are able to connect with distributors. Presently there are no known data sources on distributor size and location, and primary data collection must be conducted.



For primary data collection instruments to assess **distributor size**, go to [What Do Our Local Distributors Look like: Tools for Collecting Primary Data](#) in the *Primary Data Collection Instruments* section of this document.

## 2. WHAT IS THE PROFITABILITY OF DISTRIBUTION?

### Gross Receipts of Wholesalers

One measure of the profitability of distribution would be the gross receipts of local food wholesalers. The gross receipts, or total amount wholesalers earn annually without subtracting any expenses, reflect local usage of wholesalers, and the degree to which community wholesalers are able to access a viable market.

## PRIMARY DATA

Presently there are no known data sources for the gross receipts of wholesalers, and primary data collection must be conducted.

## 3. WHAT IS THE ECONOMIC IMPACT OF DISTRIBUTION?

### Employment and Wages

The fiscal effects of distribution on a community may be measured through labor opportunities and wages as a result of distribution. Wage information provides a greater picture of the sustainability of the food system from a worker's perspective (Magnusson & Gittel, 2010) and may have further implications on social justice. According to Roberts (2001) food choices comprise around 20% of service jobs and 10% of industrial jobs in cities. Both local wholesalers and food support services provide regional employment. Food support services describe the labor sustaining crop and animal production, professional and commercial wholesalers, machinery, equipment, and supplies wholesalers, paper and paper produce merchant wholesalers, grocery and related product merchant wholesalers, and commercial and industrial machinery repair (Magnusson, 2010). In one recent study in Vermont, food support services were the highest paying industry (Magnusson, 2010).

## SECONDARY DATA

### Indicators of employment and wages:

These three indicators may all be assessed at the [US Economic Census](#).

- **Farm Product Raw Material Wholesaler Wages Paid:** Average wages that wholesale employees earn.
- **Farm Product Raw Material Wholesaler Number of Workers:** Average number of workers employed by each wholesaler.
- **Employment in Food Support Industries:** Number of people employed by food support industries, such as support for crop and animal production, professional and commercial wholesalers, machinery, equipment, and supplies wholesalers, paper and paper produce merchant wholesalers, grocery and related product merchant wholesalers, and commercial and industrial machinery repair
- **Wages of Food Support Workers:** Average wages employees in food support industries earn.

## 4. HOW DOES OUR COMMUNITY VALUE DISTRIBUTION?

### Policies

One method through which a community can assess local support for distribution is through examining policies regarding federal support for rural road maintenance, shipping limitations, farmland use city planning, and policies supporting transparency in traceability of food. In the prior quarter century, rural transportation has been affected by deregulation, devolution, and traffic growth (Stommes & Brown, 2002). Changes in transportation have benefited rural areas through increasing access to distant jobs and permitting commercial shipping, but have negatively affected rural areas due to higher road maintenance costs, which require local governments to support 80% of rural roads (Magnusson, 2010). Further, many rural areas have suffered from reduced or no rail or bus services, diminishing shipping options (Magnusson, 2010). As a result, shipping limitations can seriously harm small distributors, whose primary transportation option includes roads. Alternately, a policy that can benefit small distributors includes requirements of transparency and food traceability. The predominant food system is able to produce large quantities of inexpensive and safe food, but these economies of scale conceal information about the origin and agricultural practices of food (Thompson, Harper, & Kraus, 2008). Policies requiring traceability encourage communities to support locally produced foods, and benefit local distributors, who can more easily determine food origin than centralized distributors (Thompson et al., 2008).

Land use planning is another policy option beneficial to local distributors, which prevents agricultural lands from being converted for other uses and can help the agricultural industry plan transportation and distribution of products (Roberts, 2001). One method of examining the effects of development on farmland is measuring what percentage of farm land has been developed (Thompson, Harper, & Kraus, 2008). In California, 33% of land developed in San Francisco and 76% of developed land in San Joaquin Valley in the past 20 years was high quality irrigated cropland (Thompson, Harper, & Kraus, 2008). One advantage of considering food in city planning is that food and beverage processing is not threatened by changes in government subsidies and tariffs or recessions (Roberts, 2001). Zoning is one land use planning strategy to maintain affordable pricing in expensive land markets (Unger & Wooten, 2006). Contracts are another option, where developers interested in converting industrial land for non-

industrial use must agree to dedicate the land to the food system—such as wholesale or farmers markets (Unger & Wooten, 2006). Without such zoning or contracts, companies may choose to situate themselves in other less expensive cities; and money that could have been reinvested locally will instead benefit centralized distributors and wholesalers (Unger & Wooten, 2006).

As industrial land rent and prices increase, local food processing and distribution may become too expensive to sustain (Unger & Wooten, 2006). Without sufficient local distribution systems, producers will be obstructed from connecting with local markets (Unger & Wooten, 2006).

## PRIMARY DATA

### Indicators of policies:

A number of variables represent policies that facilitate or hinder local distribution networks, including what percentage of road maintenance funding is funded by local government, shipping limitations meant to reduce road costs, land use planning, and policies requiring transparency in traceability of food from farm to table. Funding sources regarding road maintenance designate to what degree local government must fund road maintenance in order to permit transportation of goods—a cost that is often prohibitive to smaller cities. Shipping limitations would diminish the significant deterioration to roads that commercial shipping inflicts, lowering the financial burden that local governments, particularly in rural areas, must disperse. However, shipping limitations would also restrict rural distributors' abilities to transport food in bulk. The existence of food system land use planning in a community indicates an awareness of the importance of local food production, processing, distribution, and access. Policies requiring transparency in traceability of food from farm to table would additionally support local food systems. Presently no data sources are available for these indicators, and primary data collection must be conducted.



For primary data collection instruments to assess **farmland use policy planning**, go to [Does Our Community Value Local Distribution: Tools for Collecting Primary Data](#) in the *Primary Data Collection Instruments* section of this document.

## 5. IS LOCAL DISTRIBUTION AND TRANSPORTATION SUSTAINABLE?

### Sustainability of local distribution and transportation

Transportation of food products long distances can negatively affect both ecology and fairness within a food system. It is estimated that a range of 12 to 20% of all energy consumption in the U.S. is due to the food system, partially due to food traveling an average of 1500 miles between producer and consumer (Hendrickson, 1996). Localization of food production and consumption can reduce GHG emissions and nonrenewable fuel usage due to long distance food transportation, or “food miles” (Cowell & Parkinson, 2003; Pirog, van Pelt, Enshayan, & Cook, 2001). Further, proximity to production and processing labor minimizes community ability to deny exploitation of human labor, and a centralized food system additionally contributes to greater density and intensity within production and consumer networks (Cowell & Parkinson, 2003).

## PRIMARY DATA

One important indicator that reflects the energy requirements for transporting food is an energy “credit” equaling the number of megajoules (MJ) required per ton of food per kilometer of transportation multiplied by the distance between trading partners and the weight of the food product.<sup>2</sup> Energy credits for heated and chilled transport are another important element—43% of emissions associated with Spanish lettuce in one study were due to refrigerated transport (Hospido, Canals, MacLaren, Truninger, Edwards-Jones, & Clift, 2009). Presently there are no known data sources, and primary data collection must be conducted.



For primary data collection instruments to assess **transportation energy credits**, go to [Is Local Distribution and Transportation Sustainable: Tools for Collecting Primary Data](#) in the *Primary Data Collection Instruments* section of this document.

## IV. IMPLEMENTATION TOOLS

### RECENT REPORTS AND RESEARCH EXAMINING TRANSPORTATION EMISSIONS

Pirog, R., Van Pelt, T., Enshayan, K., & Cook, E. (2001). Food, fuel, and freeways: An Iowa perspective on how far food travels, fuel usage, and greenhouse gas emissions. Ames, Iowa: Leopold Center for Sustainable Agriculture. Available at: <http://www.leopold.iastate.edu/pubs-and-papers/2001-06-food-fuel-freeways>

### PRIMARY DATA COLLECTION INSTRUMENTS

#### 1. What Do Our Local Distributors Look like: Tools for Collecting Primary Data

##### *Tools from across the Country:*

##### [Ohio Distributor Survey.](#)

The survey (pp.45-56) was developed with the Ohio Department of Agriculture’s Office of Sustainable Agriculture. The distributor survey inquires about: types and locations of retail distributors, size and location of distributors, distributor products, how distributors select, purchase and collaborate with producers, volume of Ohio produced fruits and vegetables carried, challenges associated with buying local, motivations for buying local, standards and certification, and interest in continuing or increasing collaboration with Ohio producers and Ohio Department of Agriculture.

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<sup>2</sup> Energy units, weight, and distance may also be measured in other derived measurement units or base units such as kilocalories (kcal) or kilograms (kg).

### **[Desirability of Specialty Food Items among Restaurants Survey.](#)**

This survey (pp. 157-158) was developed by the University of British Columbia for distribution to restaurant owners in order to determine whether restaurants purchase specialty food items, what locations items were imported from, and if the owners would consider buying products locally if available.

## **2. Does Our Community Value Local Distribution: Tools for Collecting Primary Data**

### ***Tools from Colorado:***

#### **[Colorado State University \(CSU\) Colorado Agriculture Public Attitude Survey.](#)**

This online survey collects data regarding Colorado residents' perspectives on agriculture. Questions concern respondents' experience with farming/ranching, familiarity with CO produce, understanding of the economic impact of local agriculture, behaviors regarding purchase of local food, and attitudes toward preserving land for agriculture. Not only will this questionnaire inform city planners about public attitudes toward farm land planning, this survey additionally benefits CSU through advising educational efforts on the environmental and economic impact of Colorado preserving land for local agriculture.

## **3. Is Local Distribution and Transportation Sustainable: Tools for Collecting Primary Data**

### ***Tools from Across the Country:***

#### **[Life Cycle Assessment \(LCA\)](#)**

The [OpenLCA](#) project is in the process of creating free software for life cycle analysis and sustainability assessments. LCA permits assessment of food systems from cradle-to-grave regarding environmental impact, such as GHG emissions.

#### **[Sustainable Sites Initiative \(SITES\): Guidelines and Performance Benchmarks 2009](#)**

This report includes an extensive series of benchmarks to rate site sustainability. Such benchmarks include assessing how site designs treat water, soil and vegetation, materials selection, and human health and well-being, among other variables. Energy and GHG emissions are also assessed regarding on-site usage and transportation. The first document is the manual explaining the benchmarks. The second document is an Excel spreadsheet sample with benchmark definitions and survey.

- [SITES Guidelines and Performance Benchmarks Report](#)
- [SITES Addenda, 2010](#)
- [SITES Performance Benchmarks sample spreadsheet](#)

### ***Business Emissions Calculators***

#### **[Cool Climate Small Business Footprint Calculator](#)**

The [Cool Climate Business Calculator](#) permits businesses to calculate total carbon footprint for facilities, including food manufacturing, and transportation. The calculator also compares output to similar organizations and offers recommendations for lowering one's carbon footprint.

## APPENDIX A: FOOD TRANSPORTATION & DISTRIBUTION MATRIX

Category	Indicator (geographic level)	Rationale	Data Source Location that CARES Accesses	Indicator Available on the CARES?	CO Priority for CARES & Notes	Location on the CARES Platforms & Indicator Name			
						1. National Interactive MAPS-Drop Down Menu Path	2. National Reporting Tool		
							Drop Down Menu Path	First Screen Indicators	Data Record Indicators
Food - retail	See Module 4: Food Access for indicators related to where people buy food								
Direct Distribution	Number of farm to schools	Direct distribution programs help to establish preferences for locally grown food and increases collaboration of local businesses involved in the food system (Thompson, Harper, & Kraus, 2008).	Farm to School programs listed at Colorado Farm to School, <a href="http://www.coloradofarmto-school.org">www.coloradofarmto-school.org</a> ; National Farm to School Network – Colorado, <a href="http://www.farmtoschool.org/state-home.php?id=48">http://www.farmtoschool.org/state-home.php?id=48</a> , and the USDA Food Environment Atlas, <a href="http://www.ers.usda.gov/data-products/food-environment-">http://www.ers.usda.gov/data-products/food-environment-</a>	No	1	Food Environment>Fo od Atlas 2011>Local Foods>Local Foods-County Level Data>"Farm to School Program (2009, USDA)"	Not available. Must be uploaded by community		
	Number of farm to institution (hospitals, prisons, senior centers, daycare centers, etc) programs		No	1	Not available. Must be uploaded by community	Not available. Must be uploaded by community			



	Number of school districts participating in Farm to School		<a href="#">atlas.aspx</a> No known source for Farm to Table/Restaurant	No	1	Not available. Must be uploaded by community	Not available. Must be uploaded by community		
	Number of farm to restaurant programs			No	Would be primary data collection by communities	Not available. Must be uploaded by community	Not available. Must be uploaded by community		
<b>Wholesalers</b>	Number and gross receipts of food wholesalers and by type of wholesaler:  General line grocery Poultry and poultry product Fish and seafood Meat and meat product Fresh fruit and vegetable Other grocery and related products Other farm product raw material	Food wholesalers connect farmers to markets, distributing products from food producers to food manufacturers or retail, commercial, and other businesses (Unger & Wooten, 2006).	US Economic Census, <a href="http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t">http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t</a> and Local Harvest lists wholesalers (but not receipts) by type: farm, farmers market, restaurant, grocery, and other (Select “wholesale” under “What are you looking for?”): ( <a href="http://www.localharvest.org/">http://www.localharvest.org/</a> )	No	1	Not available. Must be uploaded by community	Not available. Must be uploaded by community		

	Number and location of combined wholesale/retail hybrid markets, shipping point markets, and wholesale/terminal produce markets	These businesses perform individual functions that could potentially be expanded or combined to form a food hub (Bragg & Barham, n.d.).	No known source-primary data collection needed	No	Would be primary data collection by communities	Not available. Must be uploaded by community	Not available. Must be uploaded by community		
<b>Distributor Size</b>	Number and location of very small, small, mid-sized, and large distributors.	Very small and small distributors prefer to buy directly from farmers. Medium-sized farmers more motivated to collaborate on logistics, education, and planning with farmers. Large distributors are less likely to have and less interested in developing personal relationships with farmers (Clark, 2011).	No known source-primary data collection needed		Would be primary data collection by communities	Not available. Must be uploaded by community	Not available. Must be uploaded by community		
<b>Employment and Wages</b>	Farm product raw material wholesaler wages paid and number of workers	Wage information provides a greater picture of the sustainability of the food system from a worker's	US Economic Census, <a href="http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t">http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t</a>	No	1	Not available. Must be uploaded by community	Not available. Must be uploaded by community		

	Food distribution system wages paid and number of workers	perspective (Magnusson & Gittel, 2010) and may have further implications on social justice.	US Economic Census, <a href="http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t">http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t</a>	No	1	Not available. Must be uploaded by community	Not available. Must be uploaded by community		
	Wages and employment of other industries related to food support services: Support activities for crop production Support activities for animal production Grocery and related product merchant wholesalers		US Economic Census, <a href="http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t">http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t</a> ; US Bureau of Labor Statistics Quarterly Census of Employment and Wages	No	1	Not available. Must be uploaded by community	Not available. Must be uploaded by community		
Policies	Funding for road maintenance- % local government vs % other	Rural areas have fewer resources for road maintenance, which affects the transportation options for smaller farms (Stommes & Brown, 2002).	No known source- primary data collection needed	No	Would be primary data collection by communities	Not available. Must be uploaded by community	Not available. Must be uploaded by community		
	Shipping limitations meant to reduce road costs (e.g. weight restrictions and	Shipping limitations affect the transportation options for smaller farms	No known source- primary data collection needed	No	Would be primary data collection by	Not available. Must be uploaded by community	Not available. Must be uploaded by community		

	limited access postings)	(Stommes & Brown, 2002).			communities				
	Land use planning includes consideration of food system	Land use planning can protect agricultural lands from being converted for other uses and can help the agriculture industry plan transportation and distribution of products (Roberts, 2001).	No known source-primary data collection needed	No	Would be primary data collection by communities	Not available. Must be uploaded by community	Not available. Must be uploaded by community		
	Policies that require transparency in traceability of food from farm to table	Increasing transparency and food traceability encourages communities to support locally produced foods (Thompson et al., 2008).	No known source-primary data collection needed	No	Would be primary data collection by communities	Not available. Must be uploaded by community	Not available. Must be uploaded by community		
<b>Transportation</b>	Energy credits used in transportation	Transportation of food long distances, particularly in heated or cooled trucks can result in significant GHG production (Hendrickson, 1996).	No known source-primary data collection needed	No	Would be primary data collection by communities	Not available. Must be uploaded by community	Not available. Must be uploaded by community		

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