

Are We Planning for Sustainable Food Systems?

An Evaluation of the Goals and Vision of Food System Assessments and their

Usefulness to Planning

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Marisol Pierce-Quinonez

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Advisor: Dr. Justin Hollander, AICP

Reader: Dr. Hugh Joseph

Abstract

A sustainable food system is a complicated and nuanced idea. Communities across the US are using food system assessments (FSAs) to come up with their own vision of a sustainable food future. FSAs gather together information about the entire food system; from production, through processing and distribution, then on to the consumption of food and ending in the disposal. They also address the economic resilience, social responsibility and environmental impact of each of these links in the chain. At their best, FSAs use all of this information to plan for the future of the local/regional food system. However, the picture of the food system that each FSA presents and the issues it highlights varies from one region to the next. Even if FSAs present a remarkable vision for the future, many do not recommend concrete measures that can be taken to reach their goals. FSAs conducted in the future should adopt more of the elements of traditional planning practices to ensure that the goals they espouse are actionable and will help eventually lead to carrying out their vision of a sustainable food system.

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Chapter 1. Introduction

There has been an explosion in the application of comprehensive food system assessments lately, which follows on decades of attempts to understand the food system through the use of different assessment tools (Feenstra & Campbell 1998). Assessment tools vary in methodology and scope and thus focus on different parts of the complex system.

Section 1.1 Background and Context of Sustainable Food Systems

Only recently has the way that food travels from farm to fork been the subject of investigation, but it has captured the attention of an interdisciplinary cast of researchers, practitioners and policymakers. Questions about the current food system's ability to adequately promote both the health of people who eat it and the environment from which it comes have arisen. The study of food systems is the comprehensive examination of the production, processing, distribution, consumption and disposal of food (Raja and Born, 2008, 4). In the past these problems have been addressed in seclusion; public health and nutrition practitioners have focused on the food we eat while environmentalists address the land. However, the interconnectedness of these issues has encouraged advocates to seek system-wide change in the way food is brought to American plates. Promoting a holistic vision of a sustainable food system is a complicated matter and practitioners are increasingly turning to Food System Assessments (FSAs) to address the food chain while simultaneously taking in to consideration the environmental, social and economic externalities of the food system.

Sustainability has become the mantra of countless urban foodies and progressive farmers alike, but defining “sustainable” is a complicated task. As Lamont Hempel (p 45) points out in *Towards Sustainable Communities*, “most definitions of sustainability and of community yield enough ambiguity to frustrate even the most careful attempts at conceptual linkage and integration.” Attempts to define a sustainable food system are equally fraught with ambiguity.

Although we have yet to reach a consensus on the definition of a sustainable food system, individual components of the food system have been addressed through the lens of sustainability. Advocates have come together at the beginning of the food chain under the auspices of the National Sustainable Agriculture Coalition (2010), who define sustainable agriculture on their website as “the environmental health, economic profitability, and social and economic equity” of agriculture.

Despite the ability to surmise sustainable agriculture in a sentence or so, once food leaves the farm it is much harder to determine whether or not it continues through the system in a sustainable manner. This is partly because defining a food system is much more difficult than defining agriculture. According to Pothukuchi (2000, p 4), the food system is a comprehensive measure of the whole life cycle of food; from the cultivation of fruits, vegetables and commodity crops at farms across the country, through the processing and distribution processes, to the consumption at homes and restaurants, and ideally both ending and beginning the cycle again through the compost of food waste.

The systems framework also includes external processes that contribute to the

system like political bodies and cultural norms. It inherently encompasses many different disciplines and can be an overly complicated way to think about food for some organizations. For this reason, a comprehensive assessment of the entire food system is often neglected in favor of focusing on a singular aspect that is easier to manage like food access.

The following section outlines different types of assessment tools that are currently in use in the food system world and concludes with a brief discussion of how FSAs are similar & different to these other tools. The categories are complicated by the fact that many of the tools share similarities with each other and as of this writing there is no agreed upon typology, except for the typology co-created by the author (Freedman, Pierce-Quinonez & Meter 2011). It should be noted that categories are fluid and a singular assessment may fit in to multiple categories at once.

The Community Food Assessment (CFA) is one of the most well-established assessment tools in the local food policy world. CFAs are a community-based approach to improving food access and alleviating hunger. The Community Food Security Coalition (CFSC) has a toolkit that defines a CFA as “a collaborative and participatory process that systematically examines a broad range of community food issues and assets, so as to inform change actions to make the community more food secure.” (2002, p11) CFSC notes that while the goal of a CFA is to develop practical actions and recommendations, often the focus is on information gathering and coalition building. The main goal of a CFA is often to increase community food security, which is defined as “a condition in

which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice.” (P5)

The Bedford-Stuyvesant Community Food Assessment of New York City is an interesting example of a CFA. City Harvest conducted the assessment in collaboration with 17 other local food and agriculture organizations, churches, and community members in the Bedford-Stuyvesant neighborhood of Brooklyn (City Harvest, 2010). The assessment gathered information on the demographic and hunger-related data for the community. They also conducted interviews, surveys and focus groups to collect information about food access, affordability, quality, and personal eating habits. Six recommendations for community-based food policy changes were made.

A Local Food Economic Analysis is a tool used to quantify the amount of money that circulates through the local economy from food system related activities. This is known as the economic multiplier effect. They are typically used to demonstrate that a local food system keeps more money within the local economy than the conventional food system, thus enabling a more economically prosperous region as a whole. A variety of economic assessments have been conducted across the country, often in places like Iowa where agriculture is a principal economic driver but also in urban-influenced regions like metropolitan Denver (Metro Denver Health and Wellness Commission 2008). A good portion of the work in this area comes from Ken Meter at Crossroads Research Center. Mr. Meter has produced over 30 reports in this area.

A third type of assessment is the foodshed analysis. These reports are based on the concept of a watershed, which is defined by the geographic area that drains water to the same place (Powell 1879). A foodshed is a way to trace the movement of food from an agricultural region to a specified urban center or particular place. Cornell University has led the academic work on foodshed assessments. Starting with a 2003 paper that explored the relationship between local agricultural production and nutrition, Cornell researchers have published a series of foodshed studies to measure the land resource requirements of food production in New York. A 2006 paper tested a complete diet framework to understand how diet influences demand for agricultural land. (Peters 2006) In that paper, researchers called for a geospatial framework to improve understanding of the ability of a local region to supply more of its food. This led to a paper on mapping potential foodsheds in New York (Peters 2009), which provides a template for considering the geography of food production and consumption simultaneously. However, rather than focusing on the types of food available, Cornell's foodshed analyses use a unit called the Human Nutrition Equivalent, which is based on the caloric needs of a person. In addition to their theoretical nutritive unit, foodshed analyses do not take into consideration processing facilities, distribution networks, or the political leverage points needed to turn the local food capacity into a practical reality.

Most recently, Cornell released a Local Foodshed Mapping Tool that establishes the productive capacity of agricultural land by geospatially analyzing soils data, land use, and production averages from the US Census of Agriculture

(Cornell University Cooperative Extension, 2011). What began as Peters' Masters Thesis, aimed at linking food production and consumption, has evolved into a sophisticated web-based tool which is currently live for the State of New York, with plans to bring data for the rest of the country online as well. The tool will be very useful to planners who want to assess the capacity of local agriculture to feed communities within its foodshed. There are several limitations to this type of assessment. For one, it does not take in to consideration the extent to which the physical infrastructure or distribution networks can handle a localized foodshed.

Land inventories are another type of assessment, and are essentially a subset of foodshed assessments. They identify properties that may be suitable for agricultural production, and are used particularly by people working to promote urban agriculture. The inventory process might include: (1) listing underutilized parcels of land, (2) identifying how much land would be needed to feed a given population, (3) identifying lands in a region that are especially suited to producing food or supporting agriculture. Often the inventories are overlaid with maps showing characteristics such as soil quality, slope, and water access, to determine whether or not a given area is suitable for cultivation. Land Inventories sometimes continue by combining this supply-side data with consumption data to determine the potential contribution agriculture can make to the total food needs of a city or region. Land inventories do not necessarily address the political feasibility of converting all available land to agricultural use, nor do they address the additional infrastructure required by such a change to local land use.

A land inventory for the City of Oakland found that 5-10% of the city's

food needs could come from within city boundaries (McClintock and Cooper, 2009, p1), while a similar study in Toronto found that through community gardens, existing small farms, green roofs, and institutional lands roughly 10% of Toronto's food needs could be met (MacRae et al, 2010, p106). Like other foodshed models, these inventories do not take into account the intermediary infrastructure required to bring locally grown food to consumers. In addition, they do not address the human elements of increased urban agriculture, such as who will tend these new farms and what sort of physical stresses this new type of land use might have on existing land uses.

Lastly, food desert assessments have taken off in recent years as a means to identify urban and rural food deserts. A "food desert" is defined as a geographical area that lacks adequate access to affordable and healthy food (Cummins & Macintyre, 2002, p436). Defining access can be a complicated task: it can mean anything from lack of healthy produce at local corner stores to the absence of full-service supermarkets within walking or driving distance from a population. The Mari Gallagher Research and Consulting firm have conducted many food desert assessments and define a food desert as a "large geographic area with no or distant grocery stores" (Gallagher, 2006, p. 6). Food desert assessments have been valuable tools in calling attention to the lack of adequate access to healthy foods and are supported by graphical representation of the issue through maps. Although the term has evoked broad interest and is easy to comprehend, low-income residents themselves have not always welcomed it. In 2009 the USDA released a report on US food access, which mapped supermarkets and

other large grocery stores and classified geographic areas as low, medium, or high access areas (Ver Ploeg et al., 2009). In 2011 the data was brought online to create an interactive map in conjunction with the Let's Move! Campaign (USDA, 2011). It is meant to be an informational tool, and also as a guide for food retail development through the Healthy Food Finance Initiative (HFFI).

There are a few additional tools that diverge in scope from FSAs but are still useful to the world of food system planning. These are illuminated in detail in *Emerging Assessment Tools to Inform Food System Planning* (Freedman, Pierce-Quinonez & Meter 2011), but include food asset mapping and food industry analysis.

Food System Assessments are a tool to analyze the entire food system at once, taking in to account all of the processes that bring food to our plate. They are useful to help develop a vision of a sustainable food system. Although few research studies have been conducted in this area, planning agencies, public health organizations and coalitions focused on building the local and regional food system are increasingly conducting FSAs. These assessments focus on information gathering from interdisciplinary data sources to develop a cohesive analysis of the food system, and to figure out the strengths and weaknesses that can be built upon at the local policy level. They are relatively un-studied, but are an amalgamation of many of the previously described tools.

All FSAs are not created equal, however. Every organization that chooses to undertake an FSA comes up with their own parameters. There is no standard toolkit for design and implementation. Assessments vary widely in both their

scope of the food system and their vision for its future. Without a standard framework for FSA implementation, authoring organizations may define their vision of a food system too narrowly, and may limit the realm of potential positive policy outcomes. A lack of a shared language between FSAs also makes comparisons between two studies difficult. Similarly, FSAs that investigate the same geographical area might explore different aspects of the food system and may come to conflicting conclusions on a plan to affect change. This means that FSAs may only provide limited relevance to local, state and federal policymakers.

The purpose of this thesis is to evaluate food system assessments: given the variability in focus of FSAs, to what extent do they plan for a comprehensive vision that accounts for the complexities of a sustainable food system? This is a bold research goal. I will attempt to answer this question by focusing on the following sub questions:

1. How do individual FSAs define their vision and goals of a sustainable food system? Do they investigate the production, processing, distribution, consumption and disposal of food, while addressing issues of social justice, economic resilience and environmental awareness?
2. How do FSAs compare with traditional forms of planning such as the comprehensive plan? Can they be considered “good” planning documents?
3. What lessons can be learned from case studies of FSAs that had a comprehensive vision and could be considered quality planning documents? Have they been useful to policymakers, and if so in what way?

Despite their growing popularity, little analysis has been done on any of these tools to evaluate their effectiveness as a tool to promote sustainable food systems. This thesis represents a preliminary attempt to address this gap in research by focusing exclusively on assessments that attempt to address the entire food system all at once; following food from its cultivation all the way to its' return to the soil as compost. Without an investigation into the outcomes, future organizations may invest time and resources in to FSAs that do little to improve the food system. To date there has been no comprehensive look at FSAs that addresses both the items they choose to include in their definition of a food system, and the policy changes they suggest in creation of a new more sustainable food system.

Chapter 2. Literature Review

Relevant literature to this thesis can be broken down in to three separate categories. The first is literature that supports the philosophical underpinnings of the research, primarily devoted to the definition of a “sustainable food system,” the second is literature relating to the use of assessments as a precursor or informative tool to planning efforts, the third explores the development of FSAs as a subset of assessment tools devoted to food.

Section 2.1 Sustainable Food Systems

Much of the literature on alternative agrifood systems focuses on the dichotomy of local production versus conventional, and the inherent values associated with alternative systems. Beus (1990) proposed a duality between “conventional” and “alternative” agriculture and defined 6 categories that demonstrated the way that the two lines of thought were in opposition to each other.

Several articles have explored individual aspects of a sustainable food system, such as the economic benefits of local food systems (Swanson, 2009) (Abate, 2008), as do some on the importance of the theory of import substitution in local foods (Bellows and Hamm, 2001). However, local food is not inherently more sustainable than food stemming from a globalized system. Hinrichs (2003) investigated the food system localization policies set forth in Ames, Iowa, and found that desirable social or environmental considerations did not always match up with the concept of “local,” since the term is about scale, not value. Brandon

Born and Samina Raja continued this line of thinking by pointing out that there is much more to the food system than merely the local vs. global consideration, and that falling in to the “local trap” may overly simplify the problems associated with the food system (2006). Certainly there are elements of a “sustainable” food system that can be attributed to purchasing things locally, but some values extend beyond those focused on a more “local” food system. Sustainability is understood to be the economic, social and environmental well being of a given program, system or practice (Sustainable Development Corporation, 2009).

Sustainable food systems are sometimes conflated with the idea of a “value chain.” The term originated as a way to describe the value-adding steps a product undergoes to satisfy consumer needs (Porter, 1985). It has been adapted to describe a values-based supply chain that delineates itself from the conventional food supply chain by adhering to a set of principles. These principles can be ecological, social or both, but are an attempt to add a dimension to the economically driven concept of the supply chain. (Pirog, 2007)

Kloppenber (1996) shifted the conversation to the idea of a “foodshed,” a conceptual term that follows the flow of food in the same way that a watershed follows the flow of water. Peters (2008) expanded on this idea in his discussion of the importance of foodsheds to the concept of sustainability, primarily as a way to quantify the extent to which local food systems are able to feed a population.

The topic of sustainable food systems is complicated by a lack of a cohesive understanding of the food system. In a conference devoted to the topic of sustainable food in 2002, no definitive definition was produced, but food was

understood as a crucial element to the mission of sustainability promoted by the World Commission on Environment and Development. In fact, the general conclusion was that there were diverging interpretations on what it meant to have “sustainable food.” (Aiking and de Boer, 2004).

The food system framework expands upon the idea of the value chain by incorporating ideas outside of the direct flow of goods including public health and other community goals. Eriksen (2007) suggests that food systems extend beyond the traditional supply chain and encapsulate many of the complexities that help to determine food security. Her definition includes, “the interactions between and within biogeophysical and human environments, which determine a set of activities; the activities themselves (from production through to consumption); outcomes of the activities (contributions to food security, environmental security, and social welfare)” and any other contributors to food security.

The literature coming to terms with the complexities of a sustainable food system is scarce, but a book stemming from a conference held in Canada teases out the issue expertly. Claire Hinrichs states that “an ironclad definition of ‘sustainable food system’ is neither possible nor desirable,” but instead should be continuously amended to reflect progress (Hinrichs, 2010). As a definition for “sustainable” she suggests learning from other instances where the word is used (in agriculture, development and livelihoods) while addressing some of the trade-offs inherent in pursuing multiple goals at once. In regards to the concept of food as “system” she recognizes the importance of setting boundaries to the system so that it can be dealt with in a comprehensible way, but being aware of these

boundaries so that one does not put on blinders to issues outside of your boundaries.

In 2010 the American Planning Association teamed up with the American Dietetic Association, the American Nurses Association, and the American Public Health Association to release a joint statement published on their websites that listed the principles of a healthy, sustainable food system. They developed more than a dozen principles, including “accounts for the public health impacts across the entire lifecycle of food,” “conserves, protects and regenerates natural resources,” “supports fair and just communities,” and “is economically balanced” (American Planning Association, 2011).

The collaborative definition between the four American professional associations may be as close as we come to a consensus on what it means to be in pursuit of a “sustainable food system.” But even without this definition, many papers have explored individual components of the food system, and how they do or do not contribute to sustainability. The following section highlights studies that investigate the impacts of food on the environment, the economy, and ourselves.

Heller and Keolian (2003) conducted a lifecycle analysis on the US food system as a whole by using a similar methodology to product life cycle analyses. The pair suggested a number of indicators that could be used to address the sustainability of the food system as a whole.

Many studies have investigated the environmental impacts of the food system. The majority of literature on the topic addresses agricultural resource consumption and the ecological impact of farms and a growing body of literature

attempts to address issues related to the entire supply chain. Resource consumption literature includes an influential exploration of the distance food must travel to reach your plate (food miles) in the state of Iowa. Pirog (2001) found that conventional food systems used 4 to 17 times more fuel than locally sourced Iowa-based food systems, and resulted in 5 to 17 times more CO₂ emissions than their local counterparts. In contrast, Weber and Mathews (2008) suggest it is what you eat that matters, not where it is grown. They also studied the carbon emitting capacity of foods, and found that transportation only makes up 15% of the life cycle carbon emissions of food, while production accounts for 83%. Weber and Mathews conclude that shifting food choices away from carbon-heavy foods like beef and dairy will account for a greater shift in emissions than shifting to a more localized diet. Energy considerations have been explored at length, and include an investigation in to the energy requirements of the food system as a whole (Canning et al, 2010), the supposed energy savings of local food (Mariola, 2008) and the impact of food choices on energy use (Carlsson-Kanyama, 2003). Kim and Dale have documented the carbon emissions associated with pesticide and fertilizer use on corn crops. (2008)

Meanwhile, other farm-level environmental considerations include the loss of soil fertility due to exploitation and over-application of chemical compounds (Foster and Magdoff, 2000). To a lesser-extent the loss of crop biodiversity is sometimes cited as a cause for alarm (Goland and Bauer, 2004), particularly as GMOs become more prevalent. Although not exclusively an environmental concern but certainly a concern for farms in general is the pursuit of farmland

preservation and the reduction of urban sprawl (Heimlich and Anderson, 2001).

The social impacts of the food system have been explored at length, most notably by Conner and Levine (2007) exploration into the beneficial impact of a local food system to community health outcomes. Also important was a treatise on the social sustainability of the organic food system (Schreck, Getz and Feenstra, 2006). Schreck was less interested in the impact of organic food on the environment and to consumers, and instead researched the extent to which organic practices also encompassed social elements such as living wages and health insurance. Unfortunately survey respondents overwhelmingly responded in the negative in regards to whether they were currently or thought it was financially viable in the future to include such considerations in their business model. These two contrasting studies demonstrate that labor rights are an important and ignored element to the social sustainability of the food system. Villarejo and Schenker (2005) also extolled the importance of farm labor practices to sustainability, and Gilbert, Sharp and Sindy, (2002) focused on the importance of a diverse makeup of farmers. In fact, diversity for both race and sex across all aspects of the food system has been found to be lacking, thus meriting extra consideration (Allen and Sachs, 2007).

Healthy food access and affordability (Chung and Meyers, 1999) is a major concern for food advocates, and has been explored both through environmental interventions (Kantor, 2001) and in general (Wrigley, Margaretts and Whelan, 2002) (Ver Ploeg et al, 2009). Food access is sometimes looked at through the lens of food deserts (Mari Gallagher Research and Consulting Group, 2006) and

geospatially (Block, Scribner and DeSalvo, 2004) (Moore et al, 2008).

The obesity epidemic has dominated literature in the public health world for some time, and understanding both the role of the overconsumption of food and the lack of high-quality food options in a neighborhood are important elements of a sustainable food system. According to Wallinga (2009), the increasing prevalence of obesity across the US is due in large part to our current food system and is a reason to promote change. Some literature also supports increasing fruit and vegetable consumption to reduce obesity (Glanz and Yaroch, 2004), but the USDA has found that American agriculture does not currently produce enough to allow for Americans to eat the quantity of fruits and vegetables that would put them in accordance with the Dietary Guidelines (Buzby, 2006).

Section 2.2 Evaluation of the Planning Process and Other Assessment Tools¹

Despite the lack of existing evaluations on food system assessments, the future-oriented nature of these assessments and the focus on assets and liabilities make them similar to other aspects of the planning process that have been evaluated. Evaluations of comprehensive plans, needs assessments and health impact assessments can all provide useful templates for an evaluation of FSAs.

Oliveira and Pinho (2010) cover the history of the evaluation of planning and add that evaluations should follow evaluation theory. There is a consensus in the planning literature that seems to suggest that despite the place-based nature and specificity associated with planning, one can still discern “good” plans from

¹ This section is adapted from an article the author co-wrote entitled “Emerging Assessment Tools to Inform Food System Planning”. The full citation is listed in the references section under Freedgood, Pierce-Quñonez and Meter, 2011.

“bad” plans (Alexander, 2002) (Baer, 1997). Criteria that separate good from bad can be found through careful evaluation. Baer suggested that evaluations should address the following criteria: adequacy of context, “rational model” considerations, procedural validity, adequacy of scope, guidance for implementation, data, quality of communication, and plan format. These general categories are again broken in to specific considerations that can be used to evaluate plans. Of course, many of the questions that discern “good” from “bad” are subjective, such as the question of whether or not the plan makes a clear statement on who it is for, or if feasibility within the larger political context has been explored. Thus evaluations of plans are not inherently free of bias.

Burke and Godschalk (2009) conducted a meta-analysis of plan quality that addresses the literature surrounding the evaluation of plans. The authors compared evaluations of plans for various fields such as hazard mitigation, sustainable development, affordable housing, and ecosystems. They identified 10 plan quality characteristics that served as evaluation criteria. These included internal factors (issue identification and vision, goals, fact base, policies, implementation, monitoring and evaluation, and internal consistency) and external factors (organization and presentation, interorganizational coordination, compliance). The authors suggest that these can be used as a checklist of sorts when evaluating plans.

Another influential study conducted by Burke and Conroy (2000) evaluated 30 comprehensive plans for the existence of principles associated with sustainable development. Their research question was similar to the question I

pursue throughout this thesis, as one of their primary questions asked, “do plans achieve balance by supporting all sustainability principles, or do plans narrowly promote some principles more than others?” (P22) They defined a set of principles that characterize sustainable development, then evaluated the strength to which each comprehensive plan promoted that principle. Plans were awarded a higher score if policies were “required” as opposed to “suggested.”

Health Impact Assessments are another relatively new tool to join the planners’ tool belt. HIAs are used to determine what sort of impact programs or policies will have on human health. A conference proceeding focused on evaluating HIAs suggested an evaluation of both the process and outcomes for the following categories: health impact predictions, stakeholder involvement, and how well the HIA informed decision makers (Parry and Kemm, 2005). The workshop did not determine how to go about determining the answers to these evaluation questions, but merely laid them out as the types of guiding questions evaluations should follow.

Section 2.3 Food System Assessments

As FSAs are a relatively new tool, literature on them is scarce. FSAs can be a combination of a needs assessment, an environmental impact assessment, a health impact assessment; they can incorporate various techniques from the previously mentioned food assessment types, and involve some elements of comprehensive planning. Some FSAs are used to gather information, while others are used to measure the changes of various parameters of the system over time. They go beyond the productive capacity of a given region, and are meant to

address the entire life cycle of the food and farming system. As with CFAs, food security is one of the main points of focus for FSAs, but the larger goal is often the promotion of a local/regional food system. Toward that end, in the best cases they recommend ways to adjust every aspect of the system, including the production, processing, packing, distribution, acquisition and disposal of food. As such, they encompass the complex relationships within a food system, starting with stewardship of land and water resources; exploring the cultivation of crops and livestock; traveling through the supply chain to the acquisition and consumption of food; and completing the cycle with the disposal of agricultural and food-product waste.

Several key documents related to FSAs have come out in recent years, but none of the published articles have focused on the outcomes of assessments on a nationwide basis. Resource guides developed by the CFSC and the USDA were created to help organizations design effective assessments. The CFSC guidebook is tailored towards the creation of CFAs but has been used to guide the creation of FSAs as well. Neither of these guides have been evaluated.

Additionally, a meta-analysis conducted by Food First addresses the scope and results of 38 assessments in the San Francisco Bay Area (Food First, 2009). This meta-analysis includes studies that “focused on one or more sectors of the food system”. The report found that of the 38 food-related studies, few “used a ‘food system’ framework” and that the “absence of this framework signifies a historic lack of understanding or emphasis on how problems in one sector of the food system (such as a lack of grocery stores in low-income neighborhoods) are

connected to broader systemic patterns and trends.” (P1). The review found that only four of the assessments included for review touched on all five aspects of the food system, meaning many are not comprehensive enough to actually qualify as a food *system* assessment. Therefore the applicability of this meta-analysis to the broader world of assessments specifically focused on the entirety of the food system is limited.

Sometimes an FSA and a food system plan are released as one document. Such is the case for the “Food System Assessment for Oakland: Towards a Sustainable Food Plan,” (Oakland Food Policy Council, 2010) and the “Assessment and Action Plan for Localization in Washtenaw County, Michigan” (Davis et al, 2004). More often they are released as an attempt to gather facts about the food system with only marginal attempts to make recommendations on ways to improve it.

FSAs are part of an emerging field focused on the evaluation of systems. System evaluation involves looking at the “big picture” but also dissecting the interconnections between pieces of that picture (Williams, 2006). The food system is complex. How researchers define the boundaries of the system and investigate its relationship to other systems is also important. Ken Meter (2006) discusses the use of a systems framework in evaluating food, and found that although it is difficult to do, the system framework is a valuable way to take in to account the different perspectives from all of the “wise practitioners” involved in the food system. (P142)

Chapter 3. Methodology

A twofold research approach was undertaken for this thesis in order to understand the role of FSAs in the promotion of a sustainable food system. The first part is a meta-analysis of FSAs, which identifies quality FSAs to follow up with as case studies. The second part of the research entailed interviews with practitioners involved in these case studies. The following criteria helped to limit the scope of food assessments in this thesis. FSAs chosen for study were published within the last ten years, and were conducted with a specific city, county or region of the United States in mind. The sample includes those that were already known to the author through previous research, those that were sent to the author via email in response to a post to the Community Food Security Coalition listserv, and those that were posted to the listserv unsolicited while research was still being conducted. Assessments included for review are limited to those that attempt to address the “soil to soil” nature of the physical and political food system. This parameter excludes CFAs, economic impact analyses, foodshed analyses and the other types of food assessments profiled in the introduction. The total number of FSAs that are included in this analysis are 22, and for a full list of the selected FSAs, see Appendix 1.

Section 3.1 Food System Assessment Meta-Analysis

The FSA meta-analysis was constructed using the methodology employed by Berke and Godschalk, which was written for the evaluation of comprehensive plans. FSAs address a comprehensive vision of a food system, a similar in scope

to that of the comprehensive plan. This aspect of the evaluation was intended to determine whether or not FSAs could be useful as planning documents in the same way that comprehensive plans are currently being used. For a complete set of the criteria involved in Berke and Godschalk's analysis and how individual plans were rated, see Appendix 1.

This FSA evaluation focuses on the principles that make up a "good" planning document through a meta-analysis. Gaber and Gaber (2007) describe meta-analyses as a way to analyze secondary data including research reports and articles and comparing the findings to that of a similar study. This methodology was used to compare assessments to each other. The focus of the meta-analysis was on an identification/definition investigation to determine how sustainable food systems are defined by individual FSAs, and what type of policy interventions they suggest.

The first two criteria on Berke and Godschalk's list describe the issue identification, vision, and goals for the future. In order to rank FSAs against each other for these criteria, I had to create some sort of overarching definition of a sustainable food system. In order to do this I drew heavily upon my literature review to shape my own personal understanding, but also used a combination of the food system sustainability indicators developed by the Wallace Center and those developed by the Roots of Change Fund for the evaluation criteria. The principles of a healthy food system agreed to by the four major professional organizations discussed in the literature review section also heavily shaped my analysis. Through these many documents I developed a catalog of issues, visions

and goals that contribute to a sustainable food system. For a complete listing of the elements included as part of my definition of a sustainable food system, see table 3. I then used this catalogue as a checklist to analyze the content of FSAs. They are broken in to three categories: social responsibility, environmental stewardship and economic development. This methodology mirrors the evaluation of comprehensive plans conducted by Berke and Conroy (2000) in which they analyzed comprehensive plans as a tool for planning for sustainable development.

It should be noted here that the list used for this evaluation is not an exhaustive list of traits comprising a sustainable food system. Although the list was created by drawing from a variety of sources there are inevitably things that are left off. Also, the concept of sustainability is inherently driven by the needs of the community, so one community's idea of what it means to be sustainable may not necessarily align with the one defined by this evaluation.

FSAs were given a score of 1 in each category if they mention the aspect as a current problem with the food system or as a target for food policy intervention. If they do not mention the particular category, they were given a score of zero and it was considered to not be included as a specific goal or vision. The checklist was then used to rank FSAs on the comprehensiveness of their definition of a sustainable food system.

The remaining characteristics of Berke and Godschalk's plan quality meta-analysis were taken ad-hominem and applied to FSAs, with a few alterations to the text to include specific references to food and farming rather than more

general planning terminology. For example, “Existing land use and land supply, and future land demands for various uses (e.g., housing, commercial, industrial, public facilities)” was reinterpreted as “existing food retail” while “state of natural environment resources and constraints” became “state of local farms.” These characteristics were about the structure and organization of the document, but also about creating a document that lends itself to monitoring, evaluation and revision. (For a complete comparison between the table used by Berke and Godschalke for their analysis and my own, see Appendix 3).

Section 3.2 Case Study Investigation

The meta-analysis enabled me to rank FSAs against each other in terms of vision and quality, which then formed the basis for a follow-up evaluation of FSA implementation for three to five in-depth case studies. Case studies were selected from those that scored the highest in the separate categories of goals & vision and the methodology & scope (see Appendix 1). I also attempted to include FSAs created by each of the three types of organizations that typically conduct FSAs (non-profit, university, government). In order to ensure that FSAs have had adequate time to make an impact, but not so much time that the document has already faded in to obscurity I limited my follow-up investigation to FSAs that were completed within the last five years.

I selected the highest scoring FSAs for follow-up. There were some discrepancies between high-scoring FSAs that were excellent in quality and those that were comprehensive in scope, and I made careful considerations to ensure that case studies were selected from both categories. The six FSAs selected for

review and their cumulative scores can be seen in table 1. I sent emails to the corresponding authors of each of these FSAs requesting an interview and followed up with phone calls when the initial email did not elicit a response. Despite my best attempts, the organizations behind the Northeast Ohio and the Sonoma County plans did not respond and my analysis is limited to the first four FSAs on the table.

Table 1 FSAs Selected for Case Study Analysis

Assessment Title	Organization	Plan Quality	Comprehensive Vision
Cultivating Resilience: A Food System Blueprint that Advances the Health of Iowans, Farms and Communities	Iowa Food System Council	18	24
Greater Philadelphia Food System Study	Delaware Valley Regional Planning Commission	20	26
Vermont Farm 2 Plate Strategic Plan	Vermont Sustainable Jobs Fund	18	27
San Diego Food System Assessment	UC Davis Agricultural Sustainability Institute	12	25
Northeast Ohio Local Food Assessment and Plan	Brad Masi Consulting	14	27
Sonoma County Food System Assessment	Sonoma County Food System Alliance	9	28

Case study investigations are a way to develop a detailed picture of a specific case that can then be generalized to reflect the reality of a system at large. A case study can be exploratory (focusing on the who, what, where), or explanatory (focusing on the why and how) (Yin, 1994). Yin notes that cases should be selected to minimize threats to external validity to ensure that results can be generalized. Along those same lines, Gomm and Foster (2000) note that

case selection should be based on what is perceived as “typical,” however, a heterogeneous selection of sites based on a planned comparison will provide results that are more generalizable. For the purposes of this thesis, rather than focus on what was “typical” I chose to focus on the exemplary.

Evaluation theory encourages a Five-Tiered approach to evaluating policies and programs (Jacobs and Kapuscik, 2000). Tier One, the needs/demand assessment, is similar in scope to FSAs. Both attempt to provide a snapshot of current gaps in political or programmatic framework, and what resources are available to address these gaps. The next tier, process evaluation, monitors program performance. In order to evaluate FSA implementation I conducted a Tier Two process evaluation to find the answers to the questions of "how, with whom, by whom, and at what cost is the program being implemented?" (Jacobs and Kapuscik, 2000). The overarching purpose of this thesis is to determine what types of programs and policies have been created as a result of FSAs. It is too early to conduct a full-fledged outcome evaluation for many FSAs because they have had a limited amount of time to make an impact. Instead, the focus of this thesis has been on the *perceived* effects of the FSA towards a more sustainable food system, and a progress report on the extent to which the recommendations set forth by the FSA are being followed. This is considered a Tier 3 outcome evaluation.

The primary method to conduct these case studies was by interviewing practitioners involved in the creation of the FSA. Interview literature suggests that one way to use interviews as qualitative research is through a seven-stage

approach (Kvale, 2007). The process calls for thematizing, designing, interviewing, transcribing, analyzing, verifying and reporting. Academically, there is a lot of crossover between the thematizing and designing stages as defined by Kvale and evaluation literature. Kvale suggests that interviewing is characterized by briefing the interviewee beforehand, asking a semi-structured set of open-ended questions, and ending with a debriefing. Questions should be asked in a way that answers allow for a triangulation of interpretation, ensuring that the correct meaning of the interviewee is captured. Interviews can then be analyzed by focusing on meaning and/or on language.

Prior to conducting the interviews I submitted my research topic and list of questions to the IRB and they found my research was excluded from IRB considerations. I also informed my interviewees that the information that they provided me was purely voluntary. During the interviews I took notes as the interviewees responded to my semi-structured interview questions. These notes formed the basis of my analysis, and have been sent back to the interviewees to ensure that they were not misquoted.

FSA's were evaluated using a Tier Two/Tier Three evaluation facilitated through semi-structured interviews with key stakeholders in the FSA production process. One interview with a key stakeholder in the FSA process was conducted. Tier Two evaluation questions focused on the FSA process: background information on the interviewee, their organization, the types of outreach conducted to organizations throughout the development of the document, and the original goals behind the FSA. Tier Three questions are focused on perceived

results: where the FSA was disseminated after it's completion, what outcomes have or will come of it, and what the interviewees might have done differently to improve the FSA impact. See outline of interview questions at the end of this document.

Lastly, interviews were coded. Since only five interviews were conducted it was unnecessary to code interviews for quantification. Instead coding was used to build qualitative themes. (Holsti 1969) Full findings of both the meta-analysis and the interviews are illuminated in the next few chapters.

Chapter 4. Food System Assessment Meta-Analysis Findings

There are twenty-two FSAs included in this analysis. They run the gamut from small projects conducted by a group of Masters students to exhaustive investigations conducted by an organization with hundreds of thousands of dollars behind them. They also represent a variety of methodologies and focus areas. The singular connecting factor between these studies is that they set out to address the entirety of the food system all at once.

This chapter is broken in to two sections. The first is an investigation in to how the FSAs define a sustainable food system. The rationale behind these categories is outlined in the methodology section. Each FSA was then read in its entirety to see if it mentioned these categories as part of the problem with the current food system or as a goal the authors wish to see in the future. The cumulative results of this analysis can be seen in table 3.

The second section of this chapter is devoted to my investigation in to the utility of FSAs as a traditional planning document. The criteria adapted from Berke and Godschalk is used here as a checklist to evaluate FSA quality. The cumulative scores can be found in table 3 and an exploration of each section is elaborated in detail in the subsequent section.

Section 4.1 Issues and Goals of a Sustainable Food System

Part of this analysis was to investigate whether or not FSAs address all five elements of the food system (otherwise known as the value chain); production, processing, retail, consumption and disposal. In general, FSAs did largely touch

on all 5 aspects (see table 2). Even though no single category was addressed by all 22 of the FSAs, they did address at least some aspect of the production, distribution and consumption categories. They fared poorer in the processing and disposal sectors, but this could be in part due to the fact that there is only one category in these sections.

Table 2 Food System Sectors Identified as Issues or Goals

Sector	%	This demonstrates the
Production	41	
Urban agriculture	86	systems perspective
Petroleum use reduction	50	
Water conservation	50	associated with these reports
Reduction of pesticide use	45	
Increase farm viability	45	– they weren’t exclusively
Soil quality/erosion	41	
Fisheries	32	focused on the retail food
Renewable energy on farms	27	
Crop Biodiversity	18	environment like CFAs, nor
Humane animal practices	14	
Processing	68	did they focus exclusively on
Value-added processing facilities	68	
Distribution	80	the abstract ability for the
Farm to school/institution	91	
Food hubs/distribution centers	68	region to feed itself, like
Consumption	73	
Decrease of household food insecurity	91	foodshed assessments
Emergency food providers	73	
Food Affordability	73	generally do. Thus FSAs in
Reduction of diet related illnesses	68	
Increase Fruit and Vegetable consumption	59	general can indeed be
Disposal	64	
Waste reduction (compost)	64	classified as a systems

approach to the food chain even though the processing and disposal sectors are underrepresented. The remaining categories in this analysis are all laid out in table 3 and are broken in to categories of Social, Environmental and Economic concern.

Table 3 Issues and Goals of a Sustainable Food System

Issues Area	%	Description, keywords, characteristics
Social Responsibility	65	
Household food security	91	Hunger, USDA definition of food security
Food Access	91	Food deserts, full-service grocery stores
Farm to institution	91	Institutional purchasing, school lunch program
Urban agriculture	86	Community gardens, land use regulations
Emergency food	73	Food banks, TANF
Food Affordability	73	SNAP & WIC acceptance, food prices
Nutrition Education	73	Cooking classes, food labeling
Diet related illnesses	68	Obesity, diabetes, health care costs
Healthy food choices	59	Dietary guidelines, fruits & vegetables
Food safety	45	Food poisoning, food recalls
Safe working conditions	36	Safety and health standards, OSHA
Culturally appropriate foods	32	Ethnic crops, culturally relevant nutrition education
Diverse food system	32	Women and minority ownership
Environmental Management	41	
Farmland preservation	68	Loss of acreage, suburbanization,
Waste reduction	64	Compost, waste diversion programs
Petroleum use reduction	50	Synthetic fertilizers, large-scale machinery
Water quality	50	Irrigation practices, water conservation, runoff
Greenhouse gasses	45	Climate change, food miles
Reduced pesticide use	45	Organic, native pollinators
Soil quality/erosion	41	Tillage practices, prime farmland
Fisheries	32	Aquaculture, wild fisheries
Resilience	32	Disaster preparedness, peak oil
Renewable energy	27	Alternative energy, methane digesters
Crop Biodiversity	18	Heirloom varieties, species diversity
Animal welfare	14	Natural certification, cage free, free range
Economic Development	60	
Direct sales	86	CSAs, Farmers markets, farm stands
Job creation	73	Green jobs
Food hubs	68	Distribution center, aggregation
Value-added processing	68	Community kitchen, slaughter facilities,
Regional food marketing	59	Buy fresh buy local program, buy local first
Fair wages	50	Living wage
Local owned businesses	50	Corporate ownership
New food enterprises	50	CDBG and USDA grants, workforce training
Diverse size & scale of operations	45	Ag of the middle, small to mid-sized businesses
Farm viability	45	Technical assistance, grants, farm secession

Household food security, food access, and farm to institution programs tied for first for the most number of mentions, with 20 of 22 reports citing them as important issues to consider when shaping the food system. The first two were often stated interchangeably or as a part of the same thought. For instance, one of the goals in *A Plan for Atlanta's Sustainable Food Future* is, to “Increase food security and access to healthy food” (Atlanta Local Food Initiative, 2008, p12).

It is interesting to note that all three of the most often cited categories are a part of the social responsibility section and denote a larger emphasis on the human side of the food system. Social concerns were cited more often than environmental or economic concerns as a whole. 65% of all social concerns were presented in the FSAs². Meanwhile, only 60% of the economic categories were mentioned, and only 41% of environmental ones were.

Environmental concerns in general were not addressed as comprehensively as the other categories. Only approximately two-thirds of the FSAs mentioned the top two environmental concerns, farmland preservation and waste reduction. The poorest fairing environmental concerns were animal welfare and crop biodiversity, with only three and four FSAs mentioning them respectively. A potential reason that many of these reports have failed to adequately address environmental concerns in their assessments could be because they are by and large conducted by an urban population, or are conducted at the regional scale with a majority of stakeholders coming from the city.

Environmental food system issues are largely farm-based and rural in nature, thus

² If 100% of concerns had been met, every single FSA would have mentioned every single social responsibility category

may not be at the forefront of policymakers minds. In the Sonoma County FSA, the importance of biodiversity is mentioned in several places in the text, even going so far as to suggest that “biodiversity is the most advanced of all of the global environmental crises now happening.” (Ag Innovations Network, 2011, p73) Sonoma is a rural community with farming as a key economic driver. It is therefore unsurprising that there was a significant emphasis placed on farm-based environmental issues.

Economic development was nearly as significant in many of these FSAs as the social concerns were. Direct sales, or the importance of promoting CSAs, farmers markets and other ways for farmers to sell directly to consumers, were mentioned in 19 of 22 reports, which shows that the majority of these reports are aimed at promoting the components that make for a local/regional food system, even if that is not explicitly stated in the title. Direct sales are tracked by the National Agricultural Statistics Service, which means that often times FSAs will indicate that increasing farmers markets and CSAs is a goal and also use the NASS information as an indicator. This is the case in the San Diego Food System Assessment, the Central Ohio Local Food System Assessment and Plan and many others.

Job creation was often tied in to the direct sales claims, noting that local foods meant an increase in local jobs. However, only half of the FSAs mentioned fair wages and even fewer mentioned safe working conditions as priorities, it seems as though the type or quality of jobs that these policies might create should be investigated. Along those lines, more FSAs placed a priority on creating new

farms and businesses rather than assisting those already in existence.

Delving deeper in to the specifics of individual FSAs, there was a wide variety in terms of how comprehensively the assessments addressed each of the 34 goals. The least comprehensive only touched on 6 different issues, while the most addressed 28. The average number of categories that each report touched on was roughly 19.3, or slightly over half. For a complete list of how each individual scored, check out the appendix.

Section 4.2 Assessment of Plan Quality

The second half of the meta-analysis focused on the utility of FSAs as planning documents using the criteria set forth by Burke and Godschalke. Overall, FSAs fared fairly poorly across the board (see table 2). Some FSAs were merely intended to be a report filled with facts and information about the food system, much in the same way that food dessert assessments are a report on the state of the food retail environment; not all of them were meant to be a place for policy recommendations. Many of these studies were meant to gather information from disparate disciplines together in one place for the first time, rather than suggest a vision for the future. Therefore the following sections should not be read as an indictment of FSAs or as an indication that they lack merit, but rather that they do not follow the same criteria that make for quality plans Those FSAs that do suggest recommendations forward often do not address the dynamic nature of the population they are planning for.

Table 4 Criteria for Assessment of Plan Quality

Fact base: Analysis of current and future conditions and explanation of reasoning	%
Demographics	91
Existing food retail	77
Future food need projections	27
State of local farms	91
Clear maps and tables that support reasoning, and enhance relevance and comprehensibility	68
Policies: Specification of principles to guide public and private food decisions to achieve goals	
Sufficiently specific (not vague) to be tied to definite actions	73
Spatial designs that specify future food networks that are sized to accommodate future growth	00
Implementation: Commitments to carry out policy-driven actions	
Timelines for actions	00
Responsible organizations identified	45
Sources of funding identified	18
Monitoring and evaluation: Provisions for tracking change in community conditions	
Goals are based on measurable objectives	50
Indicators of objectives to assess progress	32
Monitoring organizations identified	18
Timetable for updating plan	09
Internal consistency: Issues, vision, goals, policies, and implementation are mutually reinforcing	
Goals must be comprehensive to accommodate issues and vision	14
Policies must be clearly linked back to goals	59
Policies must be linked forward to implementation actions	27
Monitoring should include indicators to gauge goal achievement and effectiveness of policies	23
Organization and presentation: Provisions to enhance understandability for a wide range of readers	
Table of contents, glossary of terms, executive summary	95
Clear visuals, e.g., maps, charts, and pictures, and diagrams	77
Supporting documents, e.g., video, CD, Web page	18
Interorganizational coordination: Integration with other plans or policies of public and private parties	
Vertical coordination with plans or policies of federal, state, and regional parties	50
Collaboration with plans or policies of other local parties within or outside local jurisdiction	77

Fact Base

FSAAs did well in general in this category. FSAs were fairly effective in presenting the demographic and food-related information to provide a basic snapshot of the current food system. This information can easily be found in the US Census and in the Agricultural census, thus it should be no surprise that the vast majority of reports included it in their analysis. Inclusion of the data varied from a singular table mentioning a few facts and figures to a full-blown analysis of the extent to which existing farms could feed the population, similar to the type of analysis one might find in on the scale of a foodshed assessment.

The San Francisco Food System assessment is an excellent example of both the incorporation and presentation of this information. The San Francisco FSA was filled with maps and tables outlining data from federal, state and local sources to paint a vivid picture of the city's food system. Only 68% of FSAs included maps and tables to represent this information – others relied on descriptive text alone.

An assessment of existing food retail and access was explored in three-fourths of the reports. Given that 91% of the assessments mentioned food access as an issue in their area, it is surprising that not all of them then followed up with an exploration in to the state of food access in their area. It is unclear how the remaining reports came to the conclusion that food access should be addressed without gathering the data to support it.

Future food need projections were severely lacking, with only one-fourth of FSAs mentioning projected population and demographic changes and how those

might impact the future food needs. This is a significant departure from regular comprehensive planning documents, for these are inherently future facing.

Policies

The majority of FSAs (16/22) recommended specific policies or courses of action that promote their sustainable food agenda. The remaining reports focused merely on fact-finding and did not recommend changes, or did not advocate for specific policies that could then be implemented. Below is an example of non-specific policy recommendations that were not awarded a point in this category. These two recommendations come from the Richmond Regional Food System Analysis as methods to promote food security:

Encourage grocery chains to open in underserved areas. Discourage property owners from placing restrictive covenants on the property which would prohibit another grocery store opening in vacant shopping center. Encourage stores with covenants already in place to remove these restrictive covenants. Allows (sic) residents good access to low-cost, high quality food by making neighborhoods walkable, and ensure that bus routes connect these neighborhoods to grocery stores. (Richmond Regional Planning District Commission, 2006, p25)

Despite well-intentioned recommendations that this document might hold, it is unclear who is supposed to “encourage grocery chains to open,” and who is in charge of “allowing” residents good access to food. These recommendations are not specific enough to be actionable and were instead interpreted as goal

statements rather than actionable recommendations.

Of the FSAs that recommended specific policies to implement, none of these included information on how those plans might adapt spatially to changes in the environment or demographic makeup of their region. There were many maps and charts demonstrating *existing* farms in preservation and location of *existing* food retail, but these were not combined with overlays of future population trends. FSAs completed by planning agencies could have easily incorporated information from their comprehensive or strategic plans to understand these changes, but unfortunately for the most part they did not.

Implementation

Of the 10 out of 16 FSAs that included policy recommendations, 62% identified the appropriate organizations that were responsible for making the change. Those that did not specifically identify organizations may have suggested specific changes to be made (which earned them a point in the previous category, but not this one), such as the following recommendations to improve food access at the community level in Southern Louisiana:

- Support community gardens to create and foster self-sufficiency among the community and provide food resources to under-served communities.
- Create programs to make fresh food affordable and accessible by modeling successful programs in Pennsylvania and throughout the country. These programs can change the food environment and facilitate healthy food choices among consumers. (Second Harvest

Food Bank of Greater New Orleans and Acadiana, 2010, p103)

These recommendations are clear and specific (to increase the number of community gardens and to institute a Fresh Food Financing Initiative), but it is unclear who should be tasked with these large charges. FSAs that were awarded a point in this category stipulated which agency was responsible for each individual issue area, and the specific steps they could take to accomplish the recommendations.

Four of the FSAs went so far as to recommend funding sources to implement some or all of their recommendations. These funding sources included federal USDA and CDBG grants. And Kandiyohi County went above and beyond by including additional grants and funding sources that were included that exist specifically created to support sustainable development and farmers from local foundations and development commissions (Chollet, 2009).

No FSAs included a timeline for their policy recommendations, however some did make note of individual steps that should be prioritized before others, or made distinctions between short-term and long-term goals. These prioritizations may be effective in rallying policymakers towards specific “next steps” but unfortunately they were not awarded a point in this category because they were not accompanied by a definitive schedule for implementation that would hold these policymakers accountable.

Monitoring and Evaluation

Once an organization comes to an agreement on a set of policy changes to implement, it is important to measure the outcome, if any, the recommended

changes will have. Of the 16 FSAs with specific policy recommendations, Only 11 FSAs defined their goals using criteria that were measurable. Some FSAs limited goal definitions to concepts that were inherently measurable, such as those defined by Cultivating Resilience out of Iowa. Policymakers wanted to advocate for safe and healthy work environments, thus found data points that illustrated this point. They settled on the “Incidence of nonfatal worker injuries/ illnesses in animal slaughtering and processing in Iowa.” Other FSAs listed similar goals, however did not define them in a way that made them immediately measurable.

Closely related to the clause that goals be measurable is the stipulation that they should also be represented by indicators. Again, Cultivating Resilience did a remarkable job of including indicators for each goal it includes in the assessment. It provides an up or down arrow to indicate trends in each measurable goal. This sets the stage for follow-up evaluations: when the assessment is done several years down the line readers will be able to tell if there has been measurable change, and if there hasn't, they can at least tell if trends have changed. Cultivating Resilience was one of only 7 FSAs to include indicators.

Overall FSAs paid little attention to the necessary steps that should be taken to ensure that the plan was implemented. Only four specifically mentioned which organization would be responsible for monitoring progress and enforcing action, and only two included a timeline to suggest when the collected information should be revisited. When FSAs designated a monitoring

organization to keep track of progress by and large, the authoring organization generally selected itself. For instance, The Vermont Legislature tasked the Vermont Sustainable Jobs Fund (VSJF) to write the Farm to Plate Strategic Plan in 2010. The legislation stipulates that VSJF compile food-system related information in to one overarching document as an FSA, but also that it submit an annual report that includes:

A summary of work completed in the farm-to-plate investment program, including progress toward meeting the program goals, information regarding any advisory panel meetings, an accounting of all revenues and expenses related to the program, and recommendations regarding future program activity. The report shall also include information regarding the status of state government procurement of local foods. (V.S.A. Title 10 Chapter 15A § 330. The farm-to-plate investment program; creation; goals; tasks; methods)

This FSA was funded in part by allocations from the State budget, therefore the entire time it was being researched and published the authors were aware that they would have to report back to the legislature to demonstrate their results.

Therefore, they included a plan for monitoring and evaluation to make reporting back to the legislature easier.

Internal Consistency

Sometimes FSAs suggest policies that are not tied back to their goals. Instead, policies seem to be picked at random or the connection between policy and goal is unsupported by factual evidence. Often this is because there are no

clearly defined goals such as in the case of the Charlottesville Regional Food System Study. This FSA lists “barriers” that exist, then outlines policies that could be instituted that would address these barriers. Perhaps the barriers were intended to be interpreted as a set of goals to aspire against. For instance the barrier stating that, “farmers’ incomes are low and the price of land is high,” (p35) could be reinterpreted as a goal to increase farm viability and lower land cost.

Similarly, the Oakland Food Policy Council’s Plan For Action outlines 8 priority goals for a sustainable food system in Oakland that should be prioritized, then goes on to list 10 “recommended first steps” that can be enacted right away. These policy changes include sensible items like “protect and expand urban agriculture,” (p6) but the authors leave it up to the reader to determine which goal this policy was designed to respond to.

Berke and Godschalke believe that a good plan goes in to the nitty gritty of implementable actions. Only six FSAs went so far as to include this level of detail on the types of changes that should be made to the food system. Some FSAs included specific legislation that should be drafted, such as the creation of a Transfer of Development Rights program, while others suggested revising RFP standards to include language on sustainable procurement policies.

Organization and Presentation

Berke and Godschalk suggest that a good plan is not only evidenced by the types of information included, but also how that information is then disseminated to the public. The next two sections outline the outward facing elements of the

document: the ease of understandability of the document through tables, charts and graphs, and the extent to which it corroborates other plans or includes information from other documents on the same topic.

21 of the FSAs contained guiding information like a table of contents and an executive summary. In fact, all reports produced by a professional organization (as opposed to a university) included these two elements. Most, but not all, also included a glossary of terms. Some FSAs explicitly defined such nuanced terms as “local,” “sustainability” and even the construct of their community so that readers understood the study parameters.

17 FSAs, or just over three-quarters, included charts, tables or maps to facilitate comprehension and adequately illustrate points. FSAs contain a lot of numerical and cartographic data from all sorts of different disciplines, and at times this information can get lost if it is presented in paragraph form. Aesthetic presentation is crucial for ease of comprehension.

The last criteria in this section are the existence of supporting materials such as websites, CDs, videos and other promotional materials. The vast majority of FSAs included in this study were found online and thus have at least a modicum of a web presence. The extent to which FSAs reach beyond their reports to engage with the public varies, of course. A few FSAs resulted in collaborative workspaces for local food system practitioners to interact with each other online. The Northeast Ohio Food System Assessment and Plan represents the best instance of this, and includes a website based on the ning platform that enables users to join one of the 36 affinity groups listed on the site. Groups are broken in

to the five categories including agricultural production, food systems capacity, markets, supply chain infrastructure, and supporting businesses for local food systems. The website also acts as a resource depository for food system related reports and documents produced by other organizations.

Interorganizational Coordination

These interorganizational coordination criteria demonstrate whether or not the FSA was created with the acknowledgement that other organizations also hold jurisdiction over the food system, and address how this plan works with them. These FSAs were all produced by organizations with very different levels of experience dealing with the food system and the larger political worlds around it. On one side of the spectrum, brand new food policy councils created some, while on the other they were the latest product of several decades' worth of community-based planning. Given the interdisciplinary nature of food systems, incorporating a multitude of voices in to the plan is crucial to its success. For instance, a good amount of food policy is set at the federal level: the USDA determines how much money will be given to schools to support school lunches, they determine which crops will receive price supports, and they provide funding for conservation programs that impact the local ecosystem. Meanwhile, state or local funding might support particular economic development strategies, and at the local level different departments within the metropolitan area might also have a hand in producing plans that affect the food system as well. Despite the many opportunities for FSAs to engage with policies and plans produced by different parties, only half of them did so.

FSAAs that received points in the first part of this category included an acknowledgement of policies and initiatives outside of the scope of the authoring organization, especially if those policies are not typically thought of as food-related. For instance, in “From Farm to Fork: Building North Carolina’s Local Food Economy,” section 2 outlines statewide and local recommendations for action, one of which being to “coordinate food systems policies and regulations.” (Curtis, 2010, p33) This section acknowledges the complicated set of regulatory controls associated with the food system, and suggests that further action be taken to streamline disparate food-related activities.

FSAAs that did not receive a point in this category may have included a strong set of recommendations on ways to achieve the goals it set forth, but these recommendations did not extend beyond their own jurisdiction. In “A Plan for Atlanta’s Sustainable Food Future,” the Atlanta Local Food Initiative (2010) included recommendations supporting three different goals aimed at increasing local food production. They included encouraging the development of community and backyard gardens, as well as the goal to “increase metro Atlanta acreage of sustainable farm production.” (P5) The area surrounding Atlanta has a rich farming heritage. This could have been an opportunity to call on organizations that were already familiar with working lands in the area, such as the county agricultural extension office or statewide land trusts. Instead the goal is left fairly vague and includes an action item to conduct a land inventory to find suitable farmland. Without coordination with these other groups it is unknown whether or not this has already been done.

Collaborating with other local parties is almost as equally important as coordinating with different bureaucratic levels of policy, and this was the second criteria in this category. In some cases the two could be seen as one and the same, especially if a local jurisdiction houses the state capital or county seat. The final metric in this meta-analysis was a question of whether or not the authoring organizations collaborated with other organizations on the formation of the document. The importance of this metric can't be stressed enough. If the authoring organization created their guiding goals and objectives on their own, there is no way to know that their vision of a sustainable food future is truly representative of the rest of the regional food system, or if it is theirs alone. Also, without buy-in from other organizations it will be hard to convince outside parties to participate in their designated action-items. Over three-quarters of the FSAs included at least some participation from outside organizations.

Some of the best examples of collaborative planning included coalitions of non-profits, food policy councils, and regional planning agencies. These organizations invited constituents to participate in working groups, and allowed the individual groups to come up with their own recommendations specific to their topic area. The Delaware Valley Regional Planning Commission is a perfect example of this type of collaboration. The DVRPC created a Greater Philadelphia Food System Stakeholder committee that met on a semi-regular basis to advise the creation and implementation of both the food system study and plan. The stakeholder committee was made up of 94 individuals representing organizations that spanned the entirety of the food system.

Several FSAs also indicated the importance of continuing to build partnerships as one of their primary goals. For many FSAs this meant the creation of a food policy council or other interdisciplinary entity specifically focused on food.

The quarter of the FSAs that did not include collaborative processes were generally conducted as an academic exercise, either as a Masters thesis or were the product of a food system class. Others aggregated lots of data without making follow-up recommendations like the San Francisco Foodshed Assessment. It is possible that these groups did not reach out to other organizations because they saw their work as the initial investigative steps and lacked the capacity to continue to convene groups together to create recommendation and goal-setting steps in the future.

Chapter 5. Case Study Findings

This chapter describes the story behind four select FSAs. Through semi-structured interviews I investigated the rationale for undertaking these assessments, the types of resources that were involved, and a few preliminary outcomes. Cases were selected for individual follow-up based on their scores in the meta-analysis: FSAs that excelled at both comprehensive goal definition and usefulness as a planning document were selected for follow-up review. As noted in the methodology, I originally chose six FSAs, but was unable to reach two. The remaining four FSAs are included in this analysis.

I begin by giving a little bit of background information on the selected cases, including background information on the authoring organization, demographic and food-related data for their defined region that helps to provide a backdrop for the types of issues they were dealing with, and a brief discussion of the FSAs goals and objectives. The second portion of this section includes an analysis of interviews conducted in the fall of 2011. These interviews have been grouped together by theme.

Section 5.1 Case Study Profiles

The reports chosen for this analysis represent some of the most comprehensive assessments that have been released to date. They also represent very different populations with different overall needs for their food system. The jurisdictions they are attempting to plan for range from the agricultural powerhouse of the State of Iowa to the overwhelmingly urban Greater Philadelphia region. Table 5.1

outlines a few key facts about the regions and their food system. More detail about each assessment and their region is continued in the section below.

Table 5 Key facts for case study comparisons

<i>Assessment Title</i>	<i>Region</i>	<i>Population</i>	<i>Poverty Rate</i>	<i>2010 Food Insecurity</i>	<i>2007 Acres in Farms</i>
Cultivating Resilience	State of Iowa	3,046,355	12.5	12.1	30,747,550
Greater Philadelphia Food System Study	100 mile radius from Philadelphia	30,954,544	12	10.8 ³	5,198,720
San Diego Food System Assessment	San Diego County	3,095,313	12.6	12.2 ⁴	303,889
Vermont Farm 2 Plate Strategic Plan	State of Vermont	625,741	12.4	13.8	5,898,698
US total		308,745,538	15.1	14.5	2,260,994,361

Cultivating Resilience: A Food System Blueprint that Advances the Health of Iowans, Farms and Communities.

The state of Iowa has a booming agricultural industry primarily focused around corn for grain (13 million harvested acres) and soy (9 million harvested acres). Iowa is considered part of the agricultural heart of America, and Iowa’s ex-Governor Tom Vilsack currently heads up the USDA as Secretary. Large farms make up a significant percentage of the total number of farms, with the average farm size registering 330 acres. Despite the fact that Iowa has more than 30 million acres of farmland, roughly 12.1% of the population reported being food insecure at one point during 2010.

³ This figure is an average of the food insecurity levels of the two states spanning DVRPC’s jurisdiction, New Jersey and Philadelphia.

⁴ This information is the data for the entire state of California. Information specific to San Diego County could not be found.

Despite the perception that Iowa is primarily focused on industrial-sized farms and “Big Ag,” the sustainable food movement is gaining traction. Iowa is home to the Leopold Center for Sustainable Agriculture, and Iowa State offers one of the only graduate programs in the country in sustainable agriculture. These two organizations have shifted the conversation away from large-scale farming systems and towards a food system level approach to Iowa’s food and farm policy.

Cultivating Resilience was the product of a nearly yearlong collaborative effort spearheaded by the Iowa Food System Council (IFSC), culminating in the release of the report in February 2011. The two principal authors, Angie Tagtow and Susan Roberts are the co-founders of the Iowa Food Systems Council, an interdisciplinary group of stakeholders with members representing every sector of the Iowa food system. The Council received a grant from the Kellogg Foundation to undertake this assessment, and began work at the end of 2010.

Cultivating Resilience was completed during the same time period as a complementary report, the “Iowa Food and Farm Plan.” This was conducted by the Leopold Center as a report intended for the Iowa Legislature on building the local food economy. The authors of Cultivating Resilience were careful not to create a duplicate product. Therefore, while the Leopold Center conducted research to find “policy and funding recommendations for supporting and expanding local food systems and for assessing and overcoming obstacles necessary to increase locally grown food production,” (Leopold Center, 2011, p5) Cultivating Resilience reached beyond the realm of agricultural production and

sought “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.”

(P6) Cultivating Resilience is different in that it uses a public health lens to assess the food system.

Greater Philadelphia Food System Study and Plan

Greater Philadelphia is a densely populated area in the most urbanized part of the country, the Boston to Washington corridor. The population of 30 million people makes it the 5th largest metropolitan area in the country. A 100-mile radius extending from Philadelphia, which includes parts of New York City and other densely populated areas of New Jersey, defines the report’s designated area of study. Despite the presence of the largest urban centers in the country, the area has a rich agricultural history and a relatively large contemporary agricultural industry. In 2007 there were roughly 5 million acres of land in farms in the region, most of which were in farms with less than 50 acres. The average farm size in the study area is 114 acres, much smaller than the national average of 418. The State of Pennsylvania is historically known for its rolling hills and dairy farms, and the dairy industry is still a prominent player in the agricultural industry to this day. Milk and dairy are second only to poultry and eggs in agricultural sales in the region, followed by grains. Fruits and vegetables make up a distant fourth.

True to its urban roots, much of the push for food system change is

coming from the cities. The Food Trust has worked to promote urban food security since 1992 and recently spearheaded Philadelphia's Fresh Food Financing Initiative. This initiative is a nationally renowned program in which capital financing is made available to local businesses to increase the availability of fresh fruits and vegetables in underserved areas. The Pennsylvania Association for Sustainable Agriculture also plays a prominent role in the area, and is the largest statewide member-based sustainable farming organization in the US.

The Greater Philadelphia Food System Study and Plan was a two-staged approach to first understand and then make recommendations for the region's food system. It was conducted by The Delaware Valley Regional Planning Commission (DVRPC), the regional planning agency for the Greater Philadelphia region, and represents the interests of 9 counties. They frequently release reports aimed at "improving transportation, promoting smart growth, protecting the environment and enhancing the economy." (DVRPC, 2012) The DVRPC undertook this assessment under their own volition and completed it using funds allocated for research.

Alison Hastings, a Senior Environmental Planner at the DVRPC is the primary author on the report. Ms. Hastings coalesced 171 surveys in to a stakeholder analysis for the original study completed in 2008, and led working group meetings for 94 organizations to come up with recommendations for the final plan in February 2011. The food system study was intended as a preliminary attempt at understanding what was happening in the regional food system and laid the groundwork for the following plan. The Food System Plan was "aimed at

increasing the security and economic, social, and environmental benefits of the regional food system that feeds Greater Philadelphia.”

San Diego Food System Assessment

San Diego County is the fifth largest county by population in the country, and is also the largest agricultural county in California. This duality is reflected in the nature of the current agricultural industry. San Diego County has some of the highest grossing farms in the country, but also has a thriving local food economy, with 10.4% of farms selling directly to the public. This number vastly exceeds the 6% of farms who do so nationally. San Diego also leads California in the number of small farms. Despite these local food successes, San Diego is an urbanizing county, and lost over 100,000 acres of farmland between 2002 and 2007. Urbanization contributes to the county’s escalating water issues and water shortages create conflicts between urban residents and farmers. Farms often come out on the losing end of these conflicts.

The push for a more sustainable food system is coming from multiple fronts in San Diego. San Diego Roots Sustainable Food Project has been advocating for local family farms since 2001 and has partnered with San Diego City College to build an urban farm and training center on the community college campus. And although now defunct, The Tierra Miguel Foundation was a large commercial farm that helped to develop one of the first Food Hubs in the nation.

The San Diego Food System Assessment was implemented by the San Diego Food System Working Group – a new organization that began in 2009

through grant funding from the California Endowment specifically for the purpose of conducting this assessment. The Ag Innovations Network, a prominent organization in California agriculture, helped to facilitate stakeholder involvement. Prior to this endeavor the Network helped to organize county-based agricultural alliances across the state aimed at encouraging food system leaders to come together to work towards mutual goals. Gail Feenstra of the Sustainable Agriculture Research and Education Program at UC Davis spearheaded data collection and report synthesis.

The goal of this assessment was to bring together a coalition of “governmental, public health, social service, environmental and agricultural experts from throughout San Diego County to identify key steps necessary to strengthen the foundation for a thriving local food system.” (Feenstra, 2010, p1) It was intended as a guiding document for the San Diego Food System Working Group, and is meant to pair with the California AgVision 2030, a strategic plan for the state of California’s agriculture and food system.

Vermont Farm to Plate Strategic Plan

Vermont is a largely rural, agricultural state. The largest city is the state capital of Burlington, but with a population of 42,000 it would barely register as a town in a more populous state. The majority of farms are also small due in part to the hilly landscape and rocky soils. The majority of its agriculture industry is made up of milk and other dairy products, which account for 73% of the \$673 million market value of Vermont’s goods. Despite their market dominance, dairy

farms are disappearing from Vermont. In 1950 there were roughly 257,000 dairy cows in the state, but by 2007 it had dropped to 139,710. Vermont also produces 46% of the Nation's maple syrup, and because of its small population it could more than satisfy its own needs for several specialty crops including sweet corn, pumpkins, apples, honey and pumpkins.

According to Erica Campbell, the state government recognizes that "food system development is economic development" and has made strategic planning for the food system a priority. In addition to state level support, Vermont is home to many organizations that hold a sustainable food system at the core of their mission. Shelburne Farms and the Intervale center are just two organizations devoted to training the next generation of sustainable farmers. Several universities including Sterling College and the University of Vermont Montpelier also have sustainable agriculture programs incorporated in to their curriculum. UVM houses the Sustainable Agriculture Council, who consulted on the creation of the Farm to Plate plan.

The Vermont Farm to Plate Strategic Plan was initiated by the Vermont legislature in the fall of 2009. The Vermont Sustainable Jobs Fund (VSJF) worked in concert with the Sustainable Agriculture Council to gather input from over 1,200 different Vermonters through interviews, focus groups, surveys and a statewide summit. The VSJF were themselves enacted by State legislation in 1995, and their mission includes providing "grant funding, technical assistance and loans to catalyze and accelerate the development of markets for sustainably produced goods and services." (Vermont Sustainable Jobs Fund, 2012). This was

the first time that the VSJF had attempted to create a plan for the food system, although they had been involved in providing technical assistance to the agriculture industry for some time.

Much of the Farm 2 Plate Plan is defined by Chapter 15A of the Vermont State Assembly, which stipulates that “the Vermont farm-to-plate investment program shall create a strategic plan for agricultural economic development” (V.S.A. Title 10 Chapter 15A § 330). The legislation stipulates several items that should be included in the report including an inventory of Vermont’s current food system and an assessment of the gaps in infrastructure and distribution. The VSJF expanded upon these items and focused on the following three goals:

1. Increase economic development in Vermont’s food and farm sector.
2. Create jobs in the food and farm economy.
3. Improve access to healthy local foods. (VSJF, 2010)

As of this writing the report is a work in progress, with pieces released online as they are completed. The Executive Summary and three chapters have already been posted, with publication of the rest of the document expected over the coming months.

Section 5.2 Interview Analysis

These interviews were conducted between November and December 2011. I attempted to interview either the primary author or project manager for each case. In San Diego, Sadie Sponslor represented the San Diego school district and is neither of these, but she played a significant role in one of the working groups

and was able to provide a significant amount of background on the project. Each interview took place over the phone and was guided by a set of interview questions (see Appendix 2). I took notes throughout the conversations then read through the notes to find patterns.

Through the course of my interviews, several themes developed. Despite the different agricultural situations and needs of the community at hand, their approaches to conducting their FSAs were similar in many ways. The answers that I received largely fell in to the following four categories; the rationale behind the project, the guiding principles behind the research and reporting, the assessment process, and some insight in to what they perceived to be preliminary results. The findings from my interviews are grouped together thematically in the sections below.

Rationale for Undertaking this Type of Project

All four of the cases chosen for further investigation were exemplary models of a comprehensive food system-planning document. But the principle authors behind the reports; a regional planning agency, a non-profit food system council, an economic development organization and a newly formed working group cited very different rationale for choosing to undertake this type of study.

In Iowa, a once-thriving food policy council saw their political mandate get overturned when political office changed hands. 180 policymakers and food system stakeholders regrouped between 2008 and 2010 to attempt to rebuild the state council and strategically plan for their food system. Their efforts moved along intermittently until they applied for a grant from the Kellogg Foundation to

conduct food system research. The original meetings then evolved in to a full-blown food system assessment.

In Vermont, several groups were in discussion about the need for a long-term vision for agriculture. However, despite the many active public health and food security organizations in Vermont, the Green Jobs angle was the one that catalyzed the project in to motion. Since so much of Vermont is rural, it was not hard to encourage legislators to understand that agricultural development meant economic development. The Vermont Legislature tasked the VSJF, who already had strong connections with the legislature, with the creation of the assessment.

Even though the San Diego Food System Assessment is credited to the San Diego Food System Working Group, the Working Group itself did not exist before the assessment began. Instead, the group was founded through a grant from the California Foundation for the express purpose of creating the report. The California Foundation has a long history of funding projects related to food security and environmental health, and they jumped at the opportunity to support this kind of research. Since the working group was a novel concept in the region, one of the key objectives of the report was not only to come up with a vision for the future, but was the process of creating the report in and of itself. The assessment was intended to open the doors to collaboration between food system professionals since the area was previously lacking an overarching food system framework.

Food Systems as a Guiding Principle

In all four cases, the “system” aspect of the food system was an important

concept that helped to define the shape of their analysis. Although the study of food systems is relatively new, all five interviewees suggested a similar definition of “food system,” and understood the importance of taking a systems-approach when planning for the future of food. Erica Campbell of VSJF defined the food system as a “soil to soil approach” to looking at food, but that in addition to farms it also includes the “array of businesses and organizations along a local or regional value chain.” Alison Hastings from DVRPC defined the food system a little more vaguely, and suggested that the non-concrete definition was an asset. She described the definition of the food system as similar to the economic system in that it is something that is “ethereal – it’s more than just physical – it’s the larger picture that you can’t quite put your finger on. It is the physical - geographic, retail, economic, but also the societal- the personal choices, biases, and customs that shape our decisions.”

Ms. Hastings was careful to differentiate between “food system” and “foodshed,” noting that the term foodshed is often used at the DVRPC to denote the geographical area of land that could supply Philadelphia with food. However, Sadie Sponslor of the San Diego Food System Working Group noted that her group used the terms interchangeably. In San Diego, both foodshed and food system were understood as a system in which food travels from “farm to table to waste and back around again, and all the pieces that fall in between.”

The complex set of issues that arise when attempting to address an entire system as a whole lends itself to the type of widespread stakeholder engagement that all four organizations undertook. Ms. Campbell noted in her definition, that

the food system is “a circular cycle, but that system also includes a lot of cross-cutting issues. Food security, energy, policy, regulations, financing, education, a lot of different cross-cutting issues are connected to farm and food sector businesses and non-profits.”

All four cases stressed the importance of engaging as many stakeholders in the process as possible. Both the DVRPC and the VSJF conducted outreach for about a year before any word touched the page. In the case of Iowa, the Food System Council determined that building the systems framework in to their mission was crucial to fully address some of the larger issues they wanted to tackle, but were aware that the makeup of the Iowa agricultural industry meant that the “broader food system approach could potentially be very divisive and highly politicized.” The Council attempted to address anxiety by ensuring that everyone had a seat at the table and by conducting specific outreach targeted at key industry groups.

Assessment Process – Resources and Intended Audience

There was a lot of variability in the professionalism of some of the FSAs included in the meta-analysis. Some were written as master’s theses and presented the facts without much fanfare, while others were conducted by organizations employing a team of people to collect data, write the report, and design appealing visuals. All four of the cases I chose to profile are more similar to the later – teams of professionals conducted them with a relatively large budget supporting their efforts. Despite this fact, smaller organizations and students who have a smaller budget at their disposal can still benefit from the lessons outlined

in this section.

When asked about the amount of resources specifically allocated to this project, not all respondents had a clear idea of how much time or money was spent, but all noted that it was significant. In San Diego, the California Endowment provided \$150,000 for the 18-month project, which paid for staff-time from two different organizations. Additional funding was also procured to support the participation of other organizations, as well. In Vermont, Ms. Campbell was unaware of the exact amount that had been spent on the F2P plan, except that four staffers were assigned to this project for varying portions of their workload. Outside of VSJF's staff additional funding was allocated for a data analysis professional and several consultants that worked on the appendices.

Much like the other organizations the DVRPC had several designated staffers working on their assessment while working on a number of other projects. Throughout the three-year period a project team of 6 to 8 people were involved in the process, whose skills and abilities ran the gamut from upper level management to college interns. None of the staffers worked full-time on the project. During stakeholder meetings an "all-hands-on-deck" approach was taken and everyone was utilized as facilitators. Ms. Hastings estimates that approximately \$300,000 was spent on both the study and plan over the entire three-year period. Incidentally, she noted that there was a budget set at one point, but the study exceeded that budget.

In contrast, Angie Tagtow reports that the biggest resource constraint for the Iowa Assessment was time. There was some money spent on meeting

facilities, printing and web development, but it was very hard to find money for people's time, meaning that most organizations worked for free.

When asked for whom the FSA was written, all four interviewees agreed that the primary audience for the completed report was the stakeholders themselves. The DVRPC specifically mentioned that their audience was an "informed stakeholder," and wrote their report so that it was "not too overly-technical, but also not too watered down to the level of the general public." Ms. Sponslor echoed this sentiment and acknowledged that the question of "audience" was something that the working group wrestled with throughout the assessment process. She noted that they "wanted it to be digested by residents but also needed it at a level that would be respected by politicians, so we shot in the middle."

The F2P plan is slightly different than the other three cases in the sense that it is specifically focused on economic development, rather than a more general goal of an improved food system. Therefore, much of the prospective audience members were thought to be food and farm businesses. In addition to businesses Ms. Campbell noted that there were many intended audiences, and rattled off a list of a dozen different types of potential users including non-profit food system organizations, potential new food entrepreneurs, and planning and zoning boards. Many of these organizations were solicited for input as stakeholders, but not all.

Another common denominator for two of the four cases profiled was that the FSAs were intended to be a blueprint for food system development in general,

but also as a guiding document for the organization itself. The IFSC sought out food system stakeholders to participate in a hybrid strategic planning process in which exercises involved using a systems framework to address food, but also how best to build a new state council. The assessment was intended to be a guide as the IFSC continues to build upon its mission in the years going forward.

Similarly, the VSJF is currently in the process of launching a Vermont F2P Network. The Network is primarily made up of stakeholders that participated in the original F2P Plan. Thus the Network created the Plan, and is now being used as a framework to build the Network.

In San Diego and Philadelphia it was less apparent that the FSAs were being used as organizational documents. The DVRPC is not the central house for food system related actions in the area. Instead it sees its role as an opportunity to shine a spotlight on the work that everyone else is doing. It did highlight further collaboration as a central recommendation, and the Food Trust is leading that charge. Ms. Hastings noted that the DVRPC would continue to stay involved in food system work for as long as the stakeholders remain engaged, and as long as the planning process adds value to the work that others are doing.

Results

All of these FSAs have been released within the last year or two meaning that any evaluation of their impact would be premature. Nevertheless, interviewees were asked to name some of the perceived preliminary impacts of the FSA, and all four respondents reported back a considerable amount of food system action as a result of the assessment. The primary response was that there

was some evidence that stakeholders were using the report just as the authoring organizations had originally intended. The DVRPC were aware of around a dozen organizations that had used information from the FSA in grant applications. Ms Hastings pointed out that non-profits used the list of recommendations to demonstrate that their missions are aligned with a larger strategy, and that a grant to them would ultimately produce a larger impact than merely supporting the organization's operations. Similarly, because of the FSA, one of the working groups in Iowa received grant funding to create new food gardens. Ms. Tagtow also mentioned that some of the constituents in the food access working group have presented the FSA back to their own constituents to help drive the point home of the importance of their mission.

Another key product cited in all four cases was the fact that new collaborations and partnerships stemmed out of the FSA process. The F2P Plan helped to stimulate a newly founded F2P Network, whose organizational structure was informed by the Plan and was finalized in November of 2011. The three other FSAs also include nods to the importance of relationships between members of the food system, and the DVRPC plan contains specific goals tailored to fostering continued collaboration.

One area where the four cases varied greatly was in their plan for monitoring and evaluating food system progress. The Vermont F2P Plan and the DVRPC both have evaluation plans that measure outcomes based on the indicators stipulated in the assessments. However, the evaluation strategies for Iowa and San Diego were much more inchoate. According to Ms. Tagtow, the

IFSC plans to conduct follow-up evaluations in the future, but there are no current plans to do so or a timeframe in which she would like to see them done. San Diego was in a similar situation. Ms. Sponslor suggested that the same funders who supported the creation of the assessment may return with more funding to create a food policy council, and this new council would be tasked at updating the indicators and evaluating how far the county has progressed towards the recommendations.

Chapter 6. Conclusion and Recommendations

Food System Assessments are being conducted all over the country as a way for communities to gather information about their food system and to make collaborative recommendations on ways to improve it. In theory, this is very similar to the role that traditional planning documents are intended to address for other human needs like water, housing, open space and air. In practice, FSAs are not plans. The case study investigation provided significant insight in to the strengths and shortcomings of some of the highest scoring FSAs, and also opened the door for more research in to the utility of FSAs down the line.

Section 6.1 FSAs as a tool for Food System Planning

FSAs share many similarities to other traditional planning documents. For instance, some FSAs like the Vermont F2P Plan started their investigative process with a SWOT analysis; a tool commonly used in needs assessments. They then follow the methodology commonly employed in comprehensive planning – they draw in a large number of stakeholders to collaboratively define a vision for the future based on common goals and aspirations. Despite the methodological similarities to these two planning techniques in the Vermont F2P Plan, there is a lot of diversity in the focal areas and objectives of FSAs as a whole. As both needs assessments and as comprehensive plans, there is much room for improvement.

The way that policy recommendations and implementation items are

presented in FSAs demonstrates that some FSAs on their own may not be effective tools for food system planning. According to Berke and Godschalk (2007), a key tenet of quality planning documents is the ability to link from vision to policy recommendation to implementable action. Only 64% of the FSAs linked policies back to their underlying vision, and only 27% linked policies forward to action. With only 6 of 22 FSAs suggesting implementable actions, FSAs in general may be relegated to a library shelf rather than being incorporated into a practitioner's workbook.

Even though FSAs in general may lack the necessary elements to be useful tools for food system planning, the four case studies were selected to shine a light on what can result from a "quality" FSA. These FSAs were chosen for deeper exploration because their vision for the future food system was comprehensive in scope and they paid attention to the many elements that make for a quality plan. The utility of these FSAs was very apparent in interviews with practitioners, particularly as a means to guide the formation of fledgling food system coalitions. In these instances the FSAs were valuable tools to bring practitioners from various sectors of the food system together in one room – something that had not been done at such a scale before. The initial rounds of meetings that lead to the FSA have continued in all cases, except for San Diego, which was waiting funding. This means that the collaborative planning process is continuing, with the FSA as a backdrop.

Section 6.2 Limitations and recommendations for further research

The author of this thesis took great pains to research as many FSAs as

possible in a way that would shed a light on this burgeoning field. However, the methods undertaken in this analysis are largely subjective and should be addressed before the results are adopted ad hominem.

The meta-analysis relied on a single researcher reading through pages and pages of text, awarding them a score based on whether or not the text mentioned a particular aspect of the food system or adhered to a specific planning principal. In some cases the line draw between awarding a point and not awarding a point was blurry, and it is possible that another researcher would have come to a different conclusion in some cases. In a similar study conducted on Comprehensive Plans by Berke and Conroy (2000), three researchers read through the selected plans and came up with scores individually. They agreed 84% of the time, which demonstrates that the analysis of FSAs may have been different if another reader were to conduct it using the same methodology.

It should be noted once more that the list of elements that contribute to a sustainable food system (table 3) are in no way an exhaustive list of concepts. In fact, there are many elements that were not included in the scope of this study. This does not mean that these ideas or concepts are not important to the idea of a sustainable food system. In fact, some FSAs were more focused on certain priorities like health care and access to capital than they were on those chosen for inclusion.

Another major limitation to this study is that the methodology used to assess the quality of planning documents is not necessarily relevant to a tool that is merely intended for gathering information. Many assessments make no claims

to be planning documents – they are merely a first-attempt at building a snapshot at what is happening in the region. For that reason it may not be surprising that many of them do not tie their vision to their goals to their indicators. It may be that FSAs are less like comprehensive plans and more like needs assessments in that they gather information on the needs of the food system rather than gather information and also make recommendations.

Similar to the decision to award or not award points in categories, the case study investigation is also highly subjective. In all four cases one of the corresponding authors or a stakeholder with significant input into the makeup of the FSA was interviewed. The interviewees were able to provide answers and insight in to many questions about the utility of FSAs, but their responses were not triangulated. It is possible that the rest of the community does not share their responses. Any conclusions drawn relating to individual FSAs may be fraught with bias, but when taken as a whole the four cases can provide insight. Future investigations using this methodology should attempt to use more than one reader to triangulate the results.

FSAs are a relatively new type of tool in the food policy world, but if changes begin to be made based on their recommendations, they merit more investigation. The case study investigation was limited to a Tier 2/Tier 3 process evaluation because it was too early to determine if FSAs had actually set out to achieve the goals they set for themselves. In order to truly ascertain that FSAs were useful food system planning tools a follow-up study should be conducted in a few years to determine what role the FSA had in changes to the food system.

This goes beyond the question that I used to frame my thesis – whether or not they were perceived to contribute to policy changes.

Another useful exploration would be to determine the effectiveness of FSAs in stimulating food system change versus other food assessment tools. FSAs are often characterized by stakeholder engagement, GIS mapping and data mining, which can take a lot of resources. If they are just as effective as less resource-intensive processes like foodshed assessments or community food assessments, then it may not be worth it to continue to conduct FSAs.

The authors behind these FSAs ran the gamut from a pair of Masters students to a team of professionals. An investigation into the types of organizations that author FSAs, the different elements of the food system that they choose to focus on and the different recommendations that they come up with would be an interesting study. Along those same lines, although some of the FSAs were supposed to be multi-stakeholder initiatives coming to a consensus on the future of the food system, there may be variability in the extent to which individual stakeholders were actually included in the process and how much of their voices were actually incorporated. It is possible that despite the massive outreach campaigns and extensive strategies for stakeholder engagement, the “wise practitioner” ended up dominating community meetings and the vision is driven by a more singular voice than an initial reading of the FSA document may let on.

Section 6.3 Recommendations for future food system assessments

First and foremost, for documents that purport to assess the entire

“system” of food, they are sorely lacking in comprehensiveness. As outlined in chapter three, there are several areas that are not explored by a majority of plans. FSAs need to spend more time addressing the environmental problems associated with the food system. During this period of economic downturn environmental concerns have fallen out of vogue to a certain extent, but the problems associated with our current food and farming systems will not go away even if the spotlight has. Future FSAs should do more to include environmental issues in their analysis, particularly if their geographic scope includes lots of farmland. Farms are a major source of non-point source water pollution and harmful greenhouse gasses, and although these issues are hard to quantify, it is important that they not be ignored.

Future food system practitioners who attempt to undertake an FSA should pay attention to both how they define their scope of the food system and how they then use that definition to suggest changes. If the FSA is defined too narrowly and elements are left out, it is possible that these aspects will not garner political attention even if they are major problems. Practitioners should look to the criteria set forth by the Roots of Change fund and the Wallace Foundation to gather a list of elements that should be addressed when looking at the entire “system.”

The areas that were frequently left out by even the most comprehensive FSAs include social cultural considerations such as respectfulness of traditional dietary habits, and the extent to which food businesses are women and minority-owned. Of course, limits to the scope of the system have to be drawn somewhere, and it is possible that communities drew the line at these particular issues. But without recognition of the

analysis parameters the FSA runs the danger of establishing a discourse in which problems continually ignored in future conversations. The DVRPC acknowledged that labor issues were largely absent from their original study and plan, and this seems to be a problem for a lot of plans. If Food Systems are being advocated for as a job creation engine, its important to explore how many jobs are actually being created, and whether or not these jobs can pay a living wage.

If it is infeasible to address the entire system at once due to time or resource constraints, some effort should be taken to acknowledge that there are missing elements so that they do not go completely ignored. All four case studies recognized that their reports could be overwhelming to some people given the amount of information they included. The interview respondents acknowledged that there were elements that could have been included, and suggested means by which their organizations could incorporate them in to future evaluations and programming. The respondents stressed the importance of creating a report that was comprehensive in scope but also useable and manageable in size.

Gathering information on the current food system is certainly important, but food system practitioners should not stop at a comprehensive picture of the food system, it is also important to make recommendations on what to do with that information and how to improve the system. FSAs should include specific policy recommendations that are supported by facts, and suggest timelines for the appropriate actors to enact these recommendations. Of course it is hard to suggest a timeline if the organization does not have the authority to enact changes itself, which is a strong case for having all of the appropriate authorities at the table

while the FSA is being written.

Despite the many misgivings I outlined in this thesis about the usefulness of FSAs, when conducted appropriately they can lead to successful plans that direct the food system towards a more sustainable future. Communities that have not already undertaken the effort to conduct an FSA should do so. This will ensure that the entire food system, from the production on farms through the processing, distribution, consumption and disposal helps to ensure a community that is social just, economically resilient and environmentally friendly.

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Appendices

Appendix A: Food System Assessment Meta-Analysis

Appendix AA: Food System Assessment Characteristics and Overall Scores

Report Title	Author	Type of Author	Region	Date	Quality Plan Points	Sustainable vision points
A Plan for Atlanta's Sustainable Food Future	The Atlanta Local Food Initiative	Coalition	Atlanta	2008	7	19
Cultivating Resilience: A Food System Blueprint that Advances the Health of Iowans, Farms and Communities	Angela Tagtow, Susan Roberts	Consultant	Iowa	2011	18	24
From the Bayou to the Boucherie: A food System Assessment for South Louisiana	Second Harvest Food Bank	Non-profit	New Orleans Metro	2010	10	19
FoodWorks A Vision to Improve NYC's Food System	Manhattan borough President	Government	New York City	2010	7	17
From Farm to Fork: A Guide to Building North Carolina's Sustainable Local Food Economy	NC State University	University	North Carolina	2010	11	16
Greater Philadelphia Food System Study	Delaware Valley Regional Planning Commission	Government	Philadelphia MPO	2011	20	26
Kandiyohi County: Local Food System Assessment	University of Minnesota Morris Center for Small Towns	University	Kandiyohi County Minnesota	2009	12	22
Multnomah Food Action Plan	Multnomah Office of Sustainability	Government	Multnomah County	2010	14	24
Northeast Ohio Local Food Assessment and Plan	Brad Masi	Consultant	Cleveland	2010	12	27
Northern Colorado Regional Food System Assessment	Colorado State University	University	Northern Colorado	2011	5	13
Oakland Food System Assessment	Oakland Food Policy Council	Government	Oakland	2005	12	22
Richmond Regional Food System Analysis	Richmond Regional Planning District Commission	Government	Richmond	2006	4	11
San Diego Food System Assessment	UC Davis Agricultural Sustainability Institute	University	San Diego County	2010	12	25
San Francisco Collaborative Food System Assessment	San Francisco Food Alliance	Non Profit	San Francisco	2005	8	10
Seattle Food System Enhancement Project	University of Washington	University	Seattle	2007	9	6
Sonoma County Food System Assessment	Sonoma County Food System Alliance	Non-Profit	Sonoma County	2011	9	28

Report Title	Author	Type of Author	Region	Date	Quality Plan Points	Sustainable vision points
The Charlottesville Region Food System	University of Virginia School of Architecture	University	Charlottesville	2006	9	16
Think Globally ~ Eat Locally. San Francisco Foodshed Assessment	American Farmland Trust	Non-Profit	Bay Area	2008	6	9
Transforming the Oakland Food System: A Plan for Action	Oakland Food Policy Council	Non-profit	Oakland	2010	13	22
Toward a Sustainable Food System: Assessment and Action Plan for Localization in Washtenaw County, Michigan	University of Michigan	University	Washtenaw County	2004	7	21
Vermont Farm 2 Plate Strategic P	Vermont Sustainable Business Fund	Non-Profit	Vermont	2011	18	27
Central Ohio Local Food System Assessment and Plan	Mid-Ohio Regional Planning Commission	Government	Ohio	2010	9	21
Average					10.55	19.31

Appendix AB: Social Responsibility

	Household food insecurity	Food Access	Farm to school/institution	Urban agriculture	Emergency food providers	Food Affordability	Nutrition Education	Reduction of diet related illnesses	Increase Fruit and Vegetable consumption	Regional food marketing	Food safety	Safe working conditions	Culturally appropriate foods	Diversity of food system workers
A Plan for Atlanta's Sustainable Food Future	1	1	1	1	0	0	0	1	1	1	0	1	0	0
Cultivating Resilience: A Food System Blueprint that Advances the Health of Iowans, Farms and Communities	1	1	1	1	1	1	0	1	1	0	1	1	0	0
From the Bayou to the Boucherie: A food System Assessment for South Louisiana	1	1	1	1	1	1	0	1	1	1	1	0	1	0
FoodWorks A Vision to Improve NYC's Food System	1	1	1	1	0	1	1	1	0	0	1	0	0	0
From Farm to Fork: A Guide to Building North Carolina's Sustainable Local Food Economy	1	1	1	1	0	1	1	1	1	0	0	0	0	1
Greater Philadelphia Food System Study	1	1	1	1	0	1	1	1	1	1	1	1	1	1
Kandiyohi County: Local Food System Assessment	0	0	1	1	1	1	1	1	0	0	1	0	1	1
Multnomah Food Action Plan	1	1	1	1	1	1	1	1	1	1	0	1	1	1
Northeast Ohio Local Food Assessment and Plan	1	1	1	1	1	1	1	1	1	1	1	0	0	0
Northern Colorado Regional Food System Assessment	1	1	1	0	1	0	0	1	1	1	0	0	0	0
Oakland Food System Assessment	1	1	1	1	1	1	1	1	1	1	1	0	1	0
Richmond Regional Food System Analysis	1	1	1	0	1	0	0	0	0	0	0	0	0	0
San Diego Food System Assessment	1	1	1	1	1	1	1	1	1	1	0	0	1	1
San Francisco Collaborative Food System Assessment	1	1	1	1	1	1	1	0	0	0	0	0	1	0
Seattle Food System Enhancement Project	1	1	0	1	1	1	1	0	0	0	0	0	0	0
Sonoma County Food System Assessment	1	1	0	1	1	0	1	1	1	1	0	1	0	1

	Household food insecurity	Food Access	Farm to school/institution	Urban agriculture	Emergency food providers	Food Affordability	Nutrition Education	Reduction of diet related illnesses	Increase Fruit and Vegetable consumption	Regional food marketing	Food safety	Safe working conditions	Culturally appropriate foods	Diversity of food system workers
The Charlottesville Region Food System	1	1	1	1	1	1	1	0	0	0	1	0	0	0
Think Globally ~ Eat Locally. San Francisco Foodshed Assessment	0	0	1	0	0	0	1	0	1	1	0	0	0	0
Transforming the Oakland Food System: A Plan for Action	1	1	1	1	1	1	1	1	0	0	0	1	0	1
Toward a Sustainable Food System: Assessment and Action Plan for Localization in Washtenaw County, Michigan	1	1	1	1	1	0	1	0	0	1	0	1	0	0
Vermont Farm 2 Plate Strategic Plan	1	1	1	1	1	1	1	0	0	1	1	1	0	0
Central Ohio Local Food System Assessment and Plan	1	1	1	1	0	1	0	1	1	1	1	0	0	0
Average	91	91	91	86	73	73	73	68	59	59	45	36	32	32

Appendix AC: Environmental Concerns

	Farmland preservation	Waste reduction (compost)	Petroleum use reduction	Water conservation	Greenhouse gas emissions	Reduction of pesticide use	Soil quality/erosion	Fisheries	Resilience (disaster preparedness)	Renewable energy on farms	Crop Biodiversity	Humane animal practices
A Plan for Atlanta's Sustainable Food Future	1	1	1	1	0	1	1	0	0	0	1	0
Cultivating Resilience: A Food System Blueprint that Advances the Health of Iowans, Farms and Communities	0	1	0	1	0	1	1	0	1	1	1	0
From the Bayou to the Boucherie: A food System Assessment for South Louisiana	0	0	1	1	0	0	0	1	1	0	0	0
FoodWorks A Vision to Improve NYC's Food System	1	1	0	0	1	0	0	0	0	0	0	0
From Farm to Fork: A Guide to Building North Carolina's Sustainable Local Food Economy	1	0	0	0	0	0	0	1	0	0	0	0
Greater Philadelphia Food System Study	1	0	0	1	0	0	1	0	0	1	1	1
Kandiyohi County: Local Food System Assessment	0	1	0	1	1	0	1	0	1	1	0	0
Multnomah Food Action Plan	1	1	0	0	0	0	0	0	0	0	0	0
Northeast Ohio Local Food Assessment and Plan	0	1	1	1	1	1	1	1	1	1	0	0
Northern Colorado Regional Food System Assessment	1	0	0	1	0	0	1	0	0	0	0	1
Oakland Food System Assessment	1	1	1	0	1	1	0	0	0	0	0	0
Richmond Regional Food System Analysis	1	1	1	0	1	0	0	0	0	0	0	0
San Diego Food System Assessment	1	1	1	1	1	1	0	1	1	0	0	1
San Francisco Collaborative Food System Assessment	0	1	0	0	0	0	0	0	0	0	0	0
Seattle Food System Enhancement Project	0	0	0	0	0	0	0	0	0	0	0	0
Sonoma County Food System Assessment	1	1	0	1	1	1	1	1	1	0	1	0
The Charlottesville Region Food System	1	1	1	1	0	1	0	0	0	0	0	0
Think Globally ~ Eat Locally. San Francisco Foodshed Assessment	1	0	0	0	1	0	0	0	0	0	0	0
Transforming the Oakland Food System: A Plan for Action	0	1	1	0	0	1	0	0	0	1	0	0
Toward a Sustainable Food System: Assessment and Action Plan for Localization in Washtenaw County, Michigan	1	0	1	0	1	1	1	0	0	0	0	0
Vermont Farm 2 Plate Strategic Plan	1	1	1	1	0	1	1	1	0	1	0	0
Central Ohio Local Food System Assessment and Plan	1	0	1	0	1	0	0	1	1	0	0	0
Average	68	64	50	50	45	45	41	32	32	27	18	14

Appendix AD: Economic Resilience

	Direct ag sales (local food economy)	Good Food job creation	Food hubs/distribution centers	Value-added processing facilities	Fair wages	Locally owned and operated farms/businesses	Support for new food enterprises	Diverse size and scale of operations	Increase farm viability
A Plan for Atlanta's Sustainable Food Future	1	1	0	0	0	1	1	0	0
Cultivating Resilience: A Food System Blueprint that Advances the Health of Lowans, Farms and Communities	1	1	1	1	1	1	0	1	0
From the Bayou to the Boucherie: A food System Assessment for South Louisiana	1	1	0	0	0	1	0	0	1
FoodWorks A Vision to Improve NYC's Food System	1	1	1	1	1	0	0	0	1
From Farm to Fork: A Guide to Building North Carolina's Sustainable Local Food Economy	1	1	1	1	0	0	0	0	1
Greater Philadelphia Food System Study	1	1	0	0	1	1	1	1	1
Kandiyohi County: Local Food System Assessment	1	1	1	1	1	1	1	0	0
Multnomah Food Action Plan	1	1	1	1	1	1	1	1	1
Northeast Ohio Local Food Assessment and Plan	1	1	1	1	0	1	1	1	0
Northern Colorado Regional Food System Assessment	1	0	1	0	0	0	0	0	0
Oakland Food System Assessment	1	1	1	1	0	0	1	0	0
Richmond Regional Food System Analysis	0	0	0	1	0	0	1	1	0
San Diego Food System Assessment	1	1	0	0	1	0	0	1	0
San Francisco Collaborative Food System Assessment	0	0	1	0	0	0	0	0	0
Seattle Food System Enhancement Project	0	0	0	0	0	0	0	0	0
Sonoma County Food System Assessment	1	1	1	1	1	1	1	1	1
The Charlottesville Region Food System	1	0	1	1	0	0	0	0	0
Think Globally ~ Eat Locally. San Francisco Foodshed Assessment	1	0	1	1	0	0	0	0	0
Transforming the Oakland Food System: A Plan for Action	1	1	0	1	1	1	1	1	1
Toward a Sustainable Food System: Assessment and Action Plan for Localization in Washtenaw County, Michigan	1	1	1	1	1	1	1	0	1
Vermont Farm 2 Plate Strategic Plan	1	1	1	1	1	1	1	1	1
Central Ohio Local Food System Assessment and Plan	1	1	1	1	1	0	0	1	1
Average	86	73	68	68	50	50	50	45	45

Appendix AE: Plan Quality Part 1

	Fact base					Policy		Implementation		
	Demographics	Existing food retail	Future food need projections	State of local farms	Clear maps and tables that support reasoning and enhance relevance and comprehensibility	Sufficiently specific (not vague) to be tied to definite actions	Spatial designs that specify future food networks sized to accommodate future growth	Timelines for actions	Responsible organizations identified	Sources of funding identified
A Plan for Atlanta's Sustainable Food Future	1	1	0	0	0	1	0	0	0	0
Cultivating Resilience: A Food System Blueprint that Advances the Health of Iowans, Farms and Communities	1	1	0	1	1	1	0	0	1	0
From the Bayou to the Boucherie: A food System Assessment for South Louisiana	1	1	0	1	1	1	0	0	0	0
FoodWorks A Vision to Improve NYC's Food System	0	0	0	0	0	1	0	0	1	0
From Farm to Fork: A Guide to Building North Carolina's Sustainable Local Food Economy	1	1	1	1	1	1	0	0	0	0
Greater Philadelphia Food System Study	1	1	1	1	1	1	1	0	1	1
Kandiyohi County: Local Food System Assessment	1	1	0	1	0	0	0	0	1	1
Multnomah Food Action Plan	0	1	0	1	1	1	0	0	0	0
Northeast Ohio Local Food Assessment and Plan	1	1	1	1	1	1	0	0	1	0
Northern Colorado Regional Food System Assessment	1	0	0	1	1	0	0	0	0	0
Oakland Food System Assessment	1	1	0	1	1	1	0	0	1	0
Richmond Regional Food System Analysis	1	1	0	1	0	0	0	0	0	0
San Diego Food System Assessment	1	0	0	1	1	1	0	0	0	0
San Francisco Collaborative Food System Assessment	1	1	0	1	1	0	0	0	0	0
Seattle Food System Enhancement Project	1	1	1	1	0	1	0	0	0	0
Sonoma County Food System Assessment	1	1	1	1	1	0	0	0	0	0
The Charlottesville Region Food System	1	1	0	1	1	1	0	0	1	0
Think Globally ~ Eat Locally. San Francisco Foodshed Assessment	1	0	0	1	1	1	0	0	0	0
Transforming the Oakland Food System: A Plan for Action	1	1	0	1	1	1	0	0	1	1
Toward a Sustainable Food System: Assessment and Action Plan for Localization in Washtenaw County, Michigan	1	1	0	1	0	0	0	0	0	0
Vermont Farm 2 Plate Strategic Plan	1	1	1	1	1	1	0	0	1	0
Central Ohio Local Food System Assessment and Plan	1	0	0	1	0	1	0	0	1	1
Average	91	77	27	91	68	73	05	00	45	18

Appendix AF: Plan Quality Part 2

	Monitoring & Evaluation				Internal Consistency			
	Goals are based on measurable objectives	Indicators of objectives to assess progress	Monitoring organizations identified	Timetable for updating plan	Goals must be comprehensive to accommodate issues and vision	Policies must be clearly linked back to goals	Policies must be linked forward to implementation actions	Monitoring should include indicators to gauge goal achievement and effectiveness of policies
A Plan for Atlanta's Sustainable Food Future	1	0	0	0	1	1	0	0
Cultivating Resilience: A Food System Blueprint that Advances the Health of Iowans, Farms and Communities	1	1	1	1	1	1	1	1
From the Bayou to the Boucherie: A food System Assessment for South Louisiana	0	0	0	0	1	0	0	0
FoodWorks A Vision to Improve NYC's Food System	1	0	0	0	0	1	0	0
From Farm to Fork: A Guide to Building North Carolina's Sustainable Local Food Economy	0	0	0	0	0	1	0	0
Greater Philadelphia Food System Study	1	1	1	0	0	1	1	1
Kandiyohi County: Local Food System Assessment	1	1	0	0	0	1	0	0
Multnomah Food Action Plan	1	1	1	0	0	1	1	1
Northeast Ohio Local Food Assessment and Plan	0	0	0	0	0	1	0	0
Northern Colorado Regional Food System Assessment	0	0	0	0	0	0	0	0
Oakland Food System Assessment	1	0	0	0	0	1	0	0
Richmond Regional Food System Analysis	0	0	0	0	0	0	0	0
San Diego Food System Assessment	1	1	0	0	0	1	1	1
San Francisco Collaborative Food System Assessment	0	1	0	0	0	0	0	0
Seattle Food System Enhancement Project	0	0	0	0	0	1	0	0
Sonoma County Food System Assessment	1	0	0	0	0	0	0	0
The Charlottesville Region Food System	0	0	0	0	0	0	0	0
Think Globally ~ Eat Locally. San Francisco Foodshed Assessment	0	0	0	0	0	0	0	0
Transforming the Oakland Food System: A Plan for Action	0	0	0	0	0	1	1	0
Toward a Sustainable Food System: Assessment and Action Plan for Localization in Washtenaw County, Michigan	0	0	0	0	0	0	0	0
Vermont Farm 2 Plate Strategic Plan	1	1	1	1	0	1	1	1
Central Ohio Local Food System Assessment and Plan	1	0	0	0	0	1	0	0
	50	32	18	09	14	64	27	23

Appendix AG: Plan Quality Part 3

Report Title	Presentation			Interorganizational Coordination	
	Table of contents, glossary of terms, executive summary	Clear visuals, e.g., maps, charts, and pictures and diagrams	Supporting documents, e.g., video, CD, Web page	Vertical coordination with plans or policies of federal, state, and regional parties	Collaboration with plans or policies of other local parties within or outside local jurisdiction
A Plan for Atlanta's Sustainable Food Future	0	0	0	0	1
Cultivating Resilience: A Food System Blueprint that Advances the Health of Iowans, Farms and Communities	1	1	0	1	1
From the Bayou to the Boucherie: A food System Assessment for South Louisiana	1	1	0	1	1
FoodWorks A Vision to Improve NYC's Food System	1	0	0	1	1
From Farm to Fork: A Guide to Building North Carolina's Sustainable Local Food Economy	1	1	0	1	1
Greater Philadelphia Food System Study	1	1	1	1	1
Kandiyohi County: Local Food System Assessment	1	1	0	1	1
Multnomah Food Action Plan	1	1	1	0	1
Northeast Ohio Local Food Assessment and Plan	1	1	1	0	1
Northern Colorado Regional Food System Assessment	1	0	1	0	0
Oakland Food System Assessment	1	1	0	1	1
Richmond Regional Food System Analysis	1	0	0	0	0
San Diego Food System Assessment	1	1	0	0	1
San Francisco Collaborative Food System Assessment	1	1	0	0	1
Seattle Food System Enhancement Project	1	1	0	0	1
Sonoma County Food System Assessment	1	1	0	0	1
The Charlottesville Region Food System	1	1	0	1	0
Think Globally ~ Eat Locally. San Francisco Foodshed Assessment	1	1	0	0	0
Transforming the Oakland Food System: A Plan for Action	1	1	0	1	1
Toward a Sustainable Food System: Assessment and Action Plan for Localization in Washtenaw County, Michigan	1	1	0	1	1
Vermont Farm 2 Plate Strategic Plan	1	1	0	1	1
Central Ohio Local Food System Assessment and Plan	1	0	0	1	0
Average	95	77	18	55	77

Appendix B: Interview Script

Interview Introduction Script

Hello and thanks again for agreeing to participate in this research project. My name is Mari Pierce-Quinonez and I am evaluating the implementation of Food System Assessments as part of a larger research project that is contributing to my master's thesis.

I am performing a study of food-related policies and programs that have either directly stemmed from or been assisted by the Food System Assessment that your organization authored. Participation is voluntary and you may choose to stop at any time. The information you provide me with today will be used to build a more comprehensive understanding of food system policy in your region and will be useful to other organizations wishing to undertake similar reports. So that I can accurately report your responses, do I have your permission to record this interview?

This interview consists of about 20 questions that are divided in to four types of questions: background information about you and your organization, questions about the process of researching and writing your FSA, questions about your perceived outcomes of the FSA and how these are being monitored, and finally, questions about your region's future food policy goals.

Do you have any questions before we begin?

OK, these first sets of questions are for me to learn more about you and the organization you work for.

1. How long have you been working on food issues in your community?

(Probe: what have your various roles been?)

2. How do you define a food system?

(Probe: are production, processing, distribution and consumption all a part of this definition? How does this differ from value chains, foodsheds and other farm-to-fork related terms? Is sustainability a part of this definition?)

Thank you. The next sets of questions are about the process that you and your organization undertook to create your FSA

3. What was the rationale behind your organization's decision to undertake an FSA?

(Probe: Had your organization undertaken any similar efforts in the past?)

4. What sort of resources (funding, staff time, etc) were devoted to the implementation of this FSA?

5. How did you go about reaching out to other organizations to gather their input?

(Probe: if you did not, how did you ensure that voices from across the food system spectrum were included in this report?)

These next sets of questions have to do with the progress that your region has made towards the goals outlined in your FSA, and the type of monitoring that is in place to make sure these goals are being accomplished.

6. What audience was this report intended for?
 7. How have this report's findings been disseminated to the public?
 8. Are there any aspects of the food system that you feel deserved more attention in this assessment? Any aspects that were missing?
 9. Can you give me a few examples of what you perceive to be some of the direct effects of the FSA on local food policy and programs?
 10. What sort of monitoring systems are in place to insure that FSA recommendations are either being implemented or are advocated for? If the effects are unmeasurable, how are you tracking progress?
- (Probe: What sort of data are you tracking to understand the changes in your food system, and who is tracking it?)

That concludes the questions that I had for you today. I appreciate your participation in this research project. If you think of anything else that is relevant to our conversation today please feel free to get in touch with me. I will be conducting interviews over the next several weeks and hope to have my report completed by late summer. I will be sure to send you a draft before it is completed so that you can approve of any of the information I have included from this interview. Thanks again for your time, and have a lovely rest of the day.

Appendix C: Plan Quality Evaluation Rubric vs. FSA Meta-analysis

Berke and Godschalk’s Characteristics of Plan Quality That Serve as Evaluation Criteria	FSA meta-analysis category
<i>Issue identification and vision:</i> Description of community needs, assets, trends, and future vision Assessment of major issues, trends, and impacts of forecasted change	Included in Table 1
Description of major opportunities for and threats to desirable land use and development	Included in Table 1
A vision that identifies what the community wants to be	Included in Table 1
<i>Goals:</i> Reflections of public values that express desired future land use and development pattern Statements of future desired conditions that reflect breadth of community values	Included in Table 1
<i>Fact base:</i> Analysis of current and future conditions and explanation of reasoning	
Present and future population and economy	Demographics
Existing land use and land supply, and future land demands for various uses (e.g., housing, commercial, industrial, public facilities)	Existing food retail/State of local Farms
Existing capacity and future demand for public infrastructure	Future food need projections
State of natural environment resources and constraints	State of local farms
Clear maps and tables that support reasoning, and enhance relevance and comprehensibility	No change
<i>Policies:</i> Specification of principles to guide public and private land use decisions to achieve goals	
Sufficiently specific (not vague) to be tied to definite actions	No change
Spatial designs that specify future land use, infrastructure, transportation, and open space networks that are sized to accommodate future growth	Spatial designs that specify <i>future food networks</i> that are sized to accommodate future growth
<i>Implementation:</i> Commitments to carry out policy-driven actions	
Timelines for actions	No change
Organizations identified that are responsible for actions	Responsible organizations identified
Sources of funding are identified to supporting actions	Sources of funding identified
<i>Monitoring and evaluation:</i> Provisions for tracking	

change in community conditions	
Goals are based on measurable objectives, e.g., 40 percent of residents within a quarter mile of transit stop	No change
Indicators of objectives to assess progress, e.g., annual percentage of residents within a quarter mile of transit stop	No change
Organizations identified responsible for monitoring	No change
Timetable for updating plan based on monitoring of changing conditions	No change
<i>Internal consistency:</i> Issues, vision, goals, policies, and implementation are mutually reinforcing	
Goals must be comprehensive to accommodate issues and vision	No change
Policies must be clearly linked back to goals and forward to implementation actions	No change
Monitoring should include indicators to gauge goal achievement and effectiveness of policies	No change
<i>Organization and presentation:</i> Provisions to enhance understandability for a wide range of readers	
Table of contents, glossary of terms, executive summary	No change
Cross referencing of issues, vision, goals, and policies	No change
Clear visuals, e.g., maps, charts, and pictures, and diagrams	No change
Supporting documents, e.g., video, CD, Web page	No change
<i>Interorganizational coordination:</i> Integration with other plans or policies of public and private parties	
Vertical coordination with plans or policies of federal, state, and regional parties	No change
Horizontal coordination with plans or policies of other local parties within or outside local jurisdiction	No change
<i>Compliance:</i> Consistent with the purpose of plan mandates	
Required elements are included in plan	There are no required elements for FSAs. These sections were not included in the meta-analysis
Required elements fit together	