

Introduction

Think Globally, Eat Locally

Eating locally-grown food has become quite a phenomenon. It tastes better and it's better for you, family farmers and the planet.

The local food movement is growing rapidly. The number of farmers markets in the United States is up 150% since 1994 from 1,755 to 4,385.¹ Sales of food directly from farmers to consumers more than doubled between 1992 and 2002, when they reached \$812 million.² Web sites and newspaper articles about eating locally abound. The New Oxford American Dictionary chose "locavore" – one who eats locally – as its word of the year in 2007. Local food is even being promoted as a solution to global warming – it shrinks the distance food travels from farm to fork, thus reducing greenhouse gas emissions.³

According to Gail Feenstra, a nutritionist and food systems analyst at U.C. Davis's Sustainable Agriculture Research & Education Program (SAREP), the local food movement is a "collaborative effort to build more locally based, self-reliant food economies – [an effort] in which sustainable food production, processing, distribution and consumption [are] integrated to enhance the economic, environmental and social health of a particular place."⁴

1 Agricultural Marketing Service, USDA, Wholesale and Farmers Markets, <http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateS&navID=WholesaleandFarmersMarkets&leftNav=WholesaleandFarmersMarkets&page=WFMFarmersMarketGrowth&description=Farmers%20Market%20Growth&acct=frmrdirnkt>

2 U.S. Census of Agriculture (2002), Market value of agricultural products sold, State by county table for California

3 See, H. Hill, National Center for Appropriate Technology, *Food Miles: Background and Marketing* (2008), www.farmland.org/documents/37012/foodmiles.pdf. Others have noted that food processing consumes far more energy than its transportation. See, C. Weber and H. Matthews, *Food-Miles and the Climate Impacts of Freight Transportation in American Food Consumption, Environmental Science & Technology* (2008), summarized at http://news.mongabay.com/2008/0602-ucsc_liaw_food_miles.html.

4 G. Feenstra, *Creating Space for Sustainable Food Systems: Lessons from the Field. Agriculture and Human Values*, 2002, p. 96.

That place could be San Francisco.

American Farmland Trust was challenged by the San Francisco Foundation to investigate how and to what extent people in the City could improve their well-being and reduce their global "footprint" by eating locally, say, from sources of food within 100 miles of the Golden Gate. This publication⁵ documents our search for answers – those we found as well as those we didn't – and recommends a broad course of action aimed at enabling San Francisco and neighboring communities to take better advantage of local sources of food and, thereby, also help the agricultural economy of its "foodshed."

What is "local" food?

Defining "local" food isn't as easy as it may sound. That is certainly the case if the objective is to identify what gives it an advantage over "conventional" food in terms of how its production, processing, shipping and consumption affect health and the environment. As Feenstra's definition of the local food movement implies, the place from which food originates is only part of what makes it "local." The closer food is produced to where it is consumed, the greater the likelihood that it will be fresh, in-season and better tasting, and that getting it to market will use less energy and produce less pollution. These are clearly among the benefits that "locavores" seek.

But the way food is grown is also considered by some to be part of what distinguishes "local" from conventional food. Much of the food now sold at farmers markets, for example, is identified, not only by local origin, but also as organically or "sustainably" grown.⁶ These methods

5 Also available on the web sites of American Farmland Trust, www.farmland.org, and Sustainable Agriculture Education (SAGE), www.sagecenter.org

6 For a good explanation of sustainable agriculture, see G. Feenstra, et al., *What Is Sustainable Agriculture?*, University of California Sustainable Agriculture Research and Education Program (SAREP), 1997, <http://www.sarep.ucdavis.edu/concept.htm>; and see the definition adopted by Congress in the Food, Agriculture, Conservation and Trade Act of 1990, Public Law 101-624, Title XVI,

of agricultural production eliminate or reduce the use of synthetic chemicals and energy-derived fertilizers, and avoid cultural practices that deplete the soil, harm wildlife and create air and water pollution. The avoidance of pesticides and other chemicals, which may remain on or in food produced with them, can also benefit the health of those who consume it. And to some consumers the sustainability of agricultural methods also embraces fair farm labor practices and animal welfare.

Finally, the concept of “local” food seems to extend to who produced it. This can include not only the identity of the grower, but also his or her personality and ethics, the attractiveness of the farm or ranch and its surrounding landscape, and other intangibles that make up the “story behind the food.” In the world of fine art, the word “provenance” is often used to describe the history of a painting or other art object that attests to its authenticity; a history that not only allows it to be traced to its originator, but also, in effect, becomes part of the art object itself. That concept, applied to food, seems to capture the essence of what many consumers are looking for when they decide to eat locally.

The San Francisco Foodshed

For the purpose of investigating how much local food is produced around San Francisco, we had to circumscribe a study area that would define what is local and what is not. We chose an area encompassing all counties, at least part of which fall within a 100-mile radius of the Golden Gate (see centerfold map). This wasn't as arbitrary as it might sound, for it seems to have currency with consumers who seek out local food. The Locavores, for instance, is a Berkeley-based organization that has challenged people in the Bay Area to eat food grown within 100 miles of home.⁷ Random House Canada recently published a book titled *The 100-Mile Diet: A Year of Local Eating*.⁸ And

according to a recent survey by the Hartman Group, when asked to define local food products, more consumers chose “within 100 miles” than any other distance.⁹

In this report, we call this 100-mile radius the San Francisco “foodshed” study area. The term “foodshed” itself was apparently coined in 1929 by Walter Hedden in his book *How Great Cities Are Fed*, and popularized in the early 1990's by Arthur Getz,¹⁰ who used the analogy of a watershed to describe “the area that is defined by a structure of supply.” According to Getz, the concept helps explain “Where our food is coming from and how it is getting to us.” Inherent in the concept, he emphasized, was “the suggestion of a need to protect a source, as well as the need to know and understand its specific geographic and ecological dimensions, condition and stability in order for it to be safeguarded and enhanced.”¹¹ When viewed from this perspective, the term “foodshed” seems to fit nicely with the broadest definition of local food suggested above.

Could the City of San Francisco feed itself entirely from what is produced by farms and ranches within 100 miles of the Golden Gate?

That is the question we asked when we embarked on this assessment of the City's foodshed. And the answer, it seems, is a qualified “yes.” On the whole, northern California farms and ranches within 100 miles of the Golden Gate produce far more food than San Francisco and, indeed, the entire Bay Area consume. But despite a growing season that is longer than in most regions of the county, there are few crops that can be produced in the region year-round. And some basic commodities like wheat, for example, are not produced in abundance in the region, mainly because other crops like fruits and vegetables yield higher economic returns to growers.

Subtitle A, Section 1603, in *Sustainable Agriculture: Definitions and Terms*, compiled by Mary V. Gold, National Agricultural Library, 1999, <http://www.nal.usda.gov/afsic/pubs/terms/srb9902.shtml>

7 See, <http://www.locavores.com/>

8 A. Smith and J. MacKinnon, *The 100-Mile Diet: A Year of Local Eating*, Random House Canada (2007); and see the authors' web site, <http://100milediet.org/>

9 The Hartman Group. *Consumer Understanding of Buying Local*. 2008, <http://www.hartman-group.com/hartbeat/2008-02-27>

10 Attributed to Getz's article *Urban Foodsheds*, in J. Kloppenberg, Jr., et al., *Coming into The Foodshed*, Agriculture and Human Values 13:3, 1996, p. 33. The authors say that the term may actually have originated as far back as 1929.

11 Permaculture and Regenerative Design News, <http://kjpermaculture.blogspot.com/2008/01/foodsheds-and-food-circles.html>

Though regional agriculture is capable of meeting much of the dietary needs of the City, not all of the food now consumed by its roughly 744,000 residents and 330,000 daily visitors comes from within a 100-mile radius. And, more to the real point of our study, the local food sector of the agricultural economy of northern California is today but a small fraction of its total production capacity. There is, in short, a lot more potential for the City and all Bay Area communities to take advantage of the cornucopia around it to improve their diet, support local farmers and, by choosing fresh produce in season and reducing the distance their food travels from farm to fork, minimize their impact on natural resources and the environment.

The main purpose of this study was to explore how San Francisco could increase the amount of locally-produced food it eats, if not to the level of regional self-sufficiency, at least to the point where it will demonstrably improve the City's quality of life while reducing its impact on the environment. The statistics we assembled help define the opportunity and the challenge, and are supplemented by more anecdotal information and opinions we gathered from experts about what it will take to create a more robust, sustainable local food system within 100 miles of the Golden Gate.

What are the specific obstacles to increasing local production of commodities for local, as opposed to global, markets? What are the challenges of distributing healthy, local produce, not only to the well-off, but to the substantial proportion of San Francisco's population that lives on the edge of poverty? What opportunities are there to increase the interest of all City consumers in locally-grown food and – this is why American Farmland Trust undertook this study – to conserve the land from which it comes?

Geographic Scope of the Study

Our original intention was to focus on food consumption only within the city of San Francisco. We considered looking at the entire Bay Area, but decided that it was simply too big, given the resources available to conduct the study. As it turned out, the only way to estimate food consumption in the City without going to great expense was to use national and regional averages. So, in fact, the consumption data we have assembled for San Francisco

can be and, as you will see, have been extrapolated to the surrounding Bay Area communities to illustrate the potential of the entire region to “eat locally.”

The production side of the study encompasses 25 counties, all or part of which fall within 100 miles as-the-crow-flies from the Golden Gate. In truth, San Francisco, like most American cities, looks to a much larger area for its food supply. As explained above, our decision to circumscribe a smaller area was based on the popularity of the 100-mile radius as an indicator of local food. It was not intended to slight the agricultural producers farther from the City, including those in both Fresno and Tulare, the nation's number one and number two farm counties, with a combined production total almost equal to the 25 counties we did study. Ultimately, the lessons drawn from examining the characteristics and challenges of agricultural production within 100 miles almost certainly apply to the area beyond where agriculture is similar to that closer to San Francisco.

Our Approach to the Research

The study has three basic parts: The first is a statistical analysis of food production within 100 miles of the Golden Gate, the resource base from which it comes, and food consumption in the City of San Francisco and the Bay Area. Second, we reviewed publications, web sites and other documents, and interviewed informed people to get a picture of how food moves from farms to consumers, as well as of the organizations that are working to promote more locally-grown and -marketed food in the region. Finally, we used the same approach to investigate the obstacles to, and opportunities for, expanding both local consumption of locally-produced food and the production of locally-grown food specifically for local consumers.

An important subsidiary issue we looked into is the extent to which local production consists of organic and other “sustainably” produced foods and the size of the market for them in the City. Agricultural production practices that minimize the use of pesticides and other fossil fuel inputs have a bearing on the impact that local food production and, by implication, consumption have on both human health and the environment. And such practices – along with the ability to trust that they were used – are undeniably part of the consumer appeal of local food. Our

intention in studying this issue was not to pass judgment, one way or another, on sustainable agriculture, but simply to try to document both its current extent and potential in the region. In the end, we didn't turn up much information on this issue, illustrating another central purpose of our study, namely, to identify gaps in our knowledge about the San Francisco foodshed that could be filled by additional research.

Most of the agricultural production data in this study came from the annual reports compiled by the Agricultural Commissioners in each California county.¹² These are quite detailed and appear to be the most reliable source of information on the production of specific commodities. However, these reports do not track where crops and livestock products are marketed. So, there is a critical gap in our knowledge about where locally-produced food is consumed – in effect, about how much the circles overlap. The only source of statistical information we could find on the production of food that is presumably marketed and consumed locally is the U.S. Census of Agriculture, which tracks the value of agricultural products sold directly to consumers, as opposed to wholesalers and other distributors. And this information does not pinpoint the location of such consumers, making it impossible to determine how much was purchased directly by people who live in or visit the City of San Francisco, rather than by those who live elsewhere in the region.

A key part of the study is an examination of the farmland from whence comes locally-produced food. The most reliable data on land use is provided by the Farmland Mapping & Monitoring Program (FMMP) of the Division of Land Resource Protection at the California Department of Conservation. This program is arguably the best of its kind in the nation, updating land use trends on a parcel-by-parcel basis every two years using aerial photography. The most recent land use data we have for all counties in the San Francisco foodshed study area (except Calaveras and Mendocino Counties) is from 2004 and the earliest is from 1990, so we used the period between these two dates to track land use changes.¹³

12 For a list of county agriculture commissioner contacts, see http://www.cdfa.ca.gov/exec/county/County_Contacts.html Annual crop reports are available on the web site of each commissioner.

13 Farmland Mapping & Monitoring Program data are analyzed by American Farmland Trust in *Paving Paradise: A New Perspective on California Farmland Conversion* (2007), http://www.farmland.org/programs/states/ca/documents/PavingParadise_

Despite our best efforts, like other researchers before us, we could find no reliable data on food consumption specifically for the City of San Francisco or other communities in the Bay Area. The data on food consumption we used in this report were derived from national and regional statistics on food availability, dietary patterns, and consumer spending patterns. These statistics are prepared by the U.S. Department of Agriculture and the Bureau of Labor Statistics. Consumer expenditures on food are tracked as part of the Consumer Expenditure Survey, an ongoing survey of spending patterns. The results of this survey are published for "Metropolitan Statistical Areas"; the San Francisco MSA includes much of the greater Bay Area, but likely provides a good estimate of consumer spending patterns in San Francisco itself. The total food supply data, known as the Loss-Adjusted Food Availability Data is estimated at the national level by compiling records of all food produced in the U.S., adding imports and subtracting exports, then applying estimates of losses due to spoilage, waste, and other losses. These data are available only at the national level. Finally, the dietary intake data we used come from the Food Commodity Intake Database, which is built using results from the Continuing Survey of Food Intake by Individuals and its Supplemental Children's Survey. We used the dataset for urban residents in the Western United States region.

Ultimately, this study had to address very complex issues with limited resources. It was not intended to be as comprehensive as similar efforts to analyze local food systems.¹⁴ Rather, it was designed primarily to take a snapshot of local food production, distribution and consumption; to identify information gaps; and to investigate the basic challenges and opportunities associated with expanding both the production and consumption of locally-grown food in the region.

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14 See, e.g., San Francisco Food Systems, *San Francisco Collaborative Food System Assessment* (2005); S. Unger and H. Wooten, U.C. Berkeley Dept. of City & Regional Planning for the Oakland Mayor's Office of Sustainability, *A Food Systems Assessment for Oakland, California: Toward A Sustainable Food Plan* (2006); J. Anderson, G. Feenstra and S. King, U.C. Davis Sustainable Agriculture Research & Education Program, *Stanislaus County Food System Project* (2002).