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INTRODUCTION

NEVA HASSANEIN AND MAXINE JACOBSON

Food and farming are essential. Like breathing, we all need to eat to live. Despite how central food is to our lives, most of us know very little about where the food we eat comes from, how it is grown, and how it reaches our plates. This lack of knowledge is true not only for individuals, but also for communities as a whole. Our local food system – what some refer to as our “foodshed” in a thought-provoking analogy to the concept of a watershed – is a complex web that incorporates farming and land use, food processing, distribution, food consumption, and waste in a particular geographic area.¹ Understanding how well our local food and farming system functions and has changed over time can help our community know how sustainable and secure that system is.

To increase understanding of Missoula County’s food system, we initiated a process known as a community food assessment in spring 2003. Such assessments – which have been conducted in about 15 other communities in the United States – are designed to look systematically at a wide range of issues related to food and agriculture in a particular place. The aim is to utilize the research process to identify what is working well in our food system and what problems need to be addressed. In developing the overall process for the assessment, we relied a great deal on *What’s Cooking in Your Food System? A Guide to Community Food Assessment* produced by the Community Food Security Coalition.² It provides excellent guidance for anyone undertaking such an endeavor.

Community food assessments are a collaborative and participatory process. In order to be responsive to community input, we organized a steering committee that represents 15 different organizations or interests in the local food and farming system. The committee includes farmers, County extension, a public health official, a planner, anti-hunger advocates, conservationists, and others (see inside front cover). The role of the steering committee has been to identify specific questions that need to be investigated, to give input into the research process, and to develop recommendations based on the findings.

University of Montana students have also been key participants in this process. The students involved in the project are primarily working at the graduate level and come mainly from the Environmental Studies Program and the Social Work Department.³ Under our supervision and the guidance of the steering committee, students have carried out much of the data collection and analysis for the food assessment. The process has given them a unique opportunity to learn valuable skills while making a strong contribution to a community-based research project.

For purposes of this assessment, we have chosen to define the “community” as Missoula County. In part, this is because much of the data are available at that level. We realize, however, that what happens in Missoula County is integrally tied to neighboring counties and that those are equally important to the long-term sustainability and security of our

local food system. Future studies on neighboring counties would greatly complement the Missoula County Community Food Assessment.

ABOUT THIS REPORT

As one of four components of the Missoula County Community Food Assessment, *Our Foodshed in Focus: Missoula County Food and Agriculture by the Numbers* utilizes existing statistical data, primarily from U.S. census reports and other government sources, to describe patterns in the local food system and how these have changed over time. Seven chapters, all authored by students, detail relevant trends in the following areas: demographics; agricultural production; environment; food distribution; employment in farming and food-related businesses; consumption; and food security and access. Each chapter also discusses why these trends might be occurring and explains why these measures are important. Appendices include (a) the raw data for each chapter and (b) the data sources used for each chapter. Additional reference material is presented at the end of each chapter in endnotes.

While each chapter of the report details changes in a particular facet of the food system, it is critical to consider the overall picture that is presented here. Accordingly, a synopsis of the findings follows this introduction.

A strength of this report is that it documents many of the food system changes that have occurred or are occurring in the County over time. We know of no other compilation of such data for Missoula County. Although some facets of the food system have been studied in the past, many of these reports are dated and/or partial. For example, the Missoula County Extension Office analyzed agricultural trends in the County for the period of 1950 to 1979.⁴ Missoula Measures, compiled by the City-County Health Department, provides information on a number of relevant community health indicators, but does not link that information to other facets of the food system.⁵ Thus, *Our Foodshed in Focus* fills a notable gap by providing a recent and fairly comprehensive analysis of the food system.

In compiling the data for Missoula County, we relied heavily on the work of other food system analysts, utilizing accepted methodologies and approaches. Particularly useful was the template developed by researchers at the Sustainable Agriculture Research and Education Program at University of California – Davis and the series of county reports they have produced.⁶ Their model was extremely helpful in specifying a methodology and a format for writing up the analysis. We gratefully acknowledge SAREP's contribution to this report.

It is important to note that we were necessarily limited by available data. For example, there are slight variations in the time period covered by our measures due to differences in availability of various statistics we relied upon. In addition, the censuses and measures have their own limitations. For instance, in some cases the UM student population and tourists may affect the accuracy of certain statistics, such as those describing per capita

food expenditures. Where known, we have tried to identify these limitations; thus, the report should be utilized with these limitations in mind.

OTHER COMPONENTS OF THE FOOD ASSESSMENT

Our Foodshed in Focus is designed to complement the other components of the Missoula County Community Food Assessment. These include:

Food and Farming Resources. This guide, available in May 2004, provides contact information and a brief description for a wide variety of organizations, programs, and businesses involved in the County food and farming system.

Agricultural Viability. This report, which will be released in the autumn of 2004, presents findings of research designed to answer the following questions: What is needed for viable and sustainable, commercial food production in and around Missoula? What are the existing assets and barriers to creating a more viable and sustainable production system? The report includes findings from data our team gathered during spring of 2004, specifically a telephone survey, in-depth interviews, and a focus group with farmers, ranchers, and market gardeners.

Residents' Concerns about Food. This report, also to be released in autumn of 2004, presents the findings of research designed to answer the following question: What concerns do Missoulians of various income levels have about food (including quality, access, transportation to food outlets, cost, eating behaviors and choices)? The report is based on findings from an extensive self-administered survey of a sample of County residents and from two focus groups with low-income Missoulians, all conducted by our research team during spring 2004.

¹ Kloppenburg, Jack Jr., John Hendrickson, and G.W. Stevenson. 1996. Coming in to the Foodshed. *Agriculture and Human Values* 13(3):33-42.

² Pothukuchi, Kami, Hugh Joseph, Hannah Burton, and Andy Fischer. 2002. *What's Cooking in Your Food System? A Guide to Community Food Assessment*. Venice, CA: Community Food Security Coalition.

³ In addition, one student is in the Society and Conservation Department, and another is in Communication Studies. Several undergraduates have been involved in the research as well.

⁴ Missoula County Extension Office. No date. *Agricultural Trends in Missoula County 1950-1979*. Missoula, Montana.

⁵ Missoula City-County Health Department. *Missoula Measures: Community Health Information*. Retrieved May 2004 at: <http://www.co.missoula.mt.us/measures/>

⁶ King, Shawn, and Gail Feenstra. 2001. *Placer County Foodshed Report*. Davis: UC Sustainable Agriculture Research and Education Program. SAREP has also produced reports on Stanislaus and Alameda Counties in California. See the following site for more information and for copies of the reports: <http://www.sarep.ucdavis.edu/cdpp/foodsystems/countystudies.htm>

SYNOPSIS
OUR FOODSHED IN FOCUS:
MISSOULA COUNTY FOOD AND AGRICULTURE BY THE NUMBERS

NEVA HASSANEIN AND MAXINE JACOBSON

As a component of the Missoula County Community Food Assessment, *Our Foodshed in Focus* compiles existing statistical data, primarily from U.S. census reports and other government sources, to describe patterns in the local food system and how these have changed over time. Seven chapters detail relevant trends on the following indicators of the food system: demographic; agricultural resource base; agricultural-related environmental impacts; economic productivity in agriculture and food distribution; employment in farming and food-related businesses; food consumption; and food security and access.

Here, we have synthesized some of the most salient findings from the report. Please see the appropriate chapter for details on the statistics and complete references, which have been omitted from this synopsis to simplify the presentation of overall findings. All dollar figures have been adjusted for inflation into 2002 dollars unless otherwise noted. As discussed in the Introduction, these statistical measures have both strengths and limitations.

AGRICULTURE

At first blush, the Census of Agriculture's statistics on farms in Missoula County can be misleading. The number of farms dropped by almost half (48%) between 1950 and 1974 (from 594 to 310), but then the number rose fairly consistently, increasing to 482 by 1997 (for a net decrease of 19% since 1950). The increased number of farms in recent decades is probably not due to an agrarian resurgence. Rather, number of farms tells only part of the story, because for purposes of the Agricultural Census, the term "farm" (which includes ranches throughout this report) refers to any place that produces or has the potential to produce \$1,000 or more of agricultural products (gross sales) in a given year. In other words, it does not take much production to be counted as a farm.

Statistics on acreage in farming and on the size of farms begin to fill in the picture. The total acreage in farming in the County dropped from a high of nearly 397,000 acres in 1954 to just over 262,000 in 1997, a 34% decrease. Although the total amount of land in farming and ranching has stayed roughly the same since the early 1970s, the average size of farms has been dropping (from 1,038 in 1969 to 544 in 1997). We are basically losing our larger farms (those over 100 acres), while the number of small farms (with 10-49 acres) has increased by 86% since 1950. This scaling down of farm size suggests that that many of our smaller farms may be primarily rural residences with agricultural enterprises playing a fairly minor economic role. Although further research is needed, such a trend would be consistent with the fact that the rural areas of the County (i.e., all

of the County except the Missoula urban area) saw a 46% increase in population during the 1990s (as compared with 22% for the County as a whole).

In response to these and related trends, there has been an increased use of conservation easements to protect agricultural land from development. As of 2001, nearly 22,000 acres of land in the County were enrolled in conservation easements held by a non-profit land trust. Land protected through conservation easements by 2001 accounted for a small percentage of the land in agriculture (about 8%).

Economically, Missoula County makes a very modest contribution to the state's total market value of agricultural products sold, accounting for less than half of one percent of that total. In 2001, agricultural products sold from Missoula County amounted to about \$7 million. Thus, it is not surprising that the vast majority of farm operators in the County make most of their living from off-farm jobs or income. In 1997, only 35% of the County's farm operators considered farming to be their principal occupation, a considerable drop from 49% in 1974 and a substantially lower percentage than farmers in the state of Montana as a whole (i.e., 65% in 1997). In addition, farm workers – those who work 150 or more days per year for wages on a farm – account for a negligible percentage (less than .5%) of overall County employment.

The Census of Agriculture also tells us some relevant facts about farm operators in the County. First, 75% percent of the farm operators in 1997 were full owners of their farms, 21% were part owners (i.e., they own some land and rent other land), and 4% were tenant farmers (i.e., rent land). Second, in 1997, the Census of Agriculture recorded only five farmers in the County who are Native American. Lastly, as elsewhere in the nation, the average age of farmers in Missoula County is rising, from 50 in 1950 to 56 in 1997.

This report also looks at several environmental factors with respect to agriculture in Missoula County, principally water pollution, water use, and use of synthetic pesticides, fertilizers, and petroleum. According to the U.S. Environmental Protection Agency, agriculture is the number one source of non-point source water pollution; however, there is only limited data on the subject for Missoula County. Although there is concern about water pollution from nitrates here, there is little evidence to suggest that fertilizers used in agriculture have been a major contributor to that pollution (which appears to result primarily from residential septic systems). With respect to supplemental water use, over half of the farms (57%) relied on some form of irrigation in 1997, but this accounts for only 8.5% of the acreage in farming in the County.

Specific data on the use of pesticides, fertilizers, and petroleum is not available. For purposes of the assessment, we used information on farm expenditures for these products as a surrogate measure of quantities used. From 1974 to 1997, there was a 298% increase in the amount farmers in the County spent on chemicals and a 117% increase in the amount spent on fertilizer. However, over the same period of time, petroleum (fuel) expenditures decreased by 7%. These figures (all of which are adjusted for inflation) are a very rough surrogate for use data because it is impossible to determine to what extent these changes in expenditures reflect changes in the prices of these materials as opposed

to changes in quantities used. It is clear, however, that Missoula County farm operators spend a considerable amount of money on petroleum, chemicals, and fertilizers, which accounted for nearly 14% of total farm expenditures (over \$9.22 million) in 1997 (not adjusted for inflation).

FOOD DISTRIBUTION NETWORK

The food distribution network is how food gets to consumers, including processors, wholesalers, retailers, and eating places such as restaurants. While the infrastructure needed by farmers and ranchers to process and handle their products is not well developed here, there has been considerable growth in the retail and food service sectors.

Missoula County has lost much of the infrastructure necessary for handling and processing agricultural products. The number of food manufacturers (which transform livestock and agricultural products into products for consumption) declined from 16 in 1959 to nine in 2001, a 44% drop. The number of farm product raw material wholesalers in the County is negligible (one in 1997).

While more conventional means of marketing agricultural products have declined, direct marketing to consumers may provide new opportunities. Missoula has a vibrant farmers' market, with about 100 vendors at the height of the season in recent years, although not all of the vendors are from the County. In 1982, the Census of Agriculture recorded that 66 farms in the County participated in direct marketing to individuals (e.g., through stands, farmers' markets). By 1997 that number had dropped to 33. The Census of Agriculture also indicates that direct market sales are a small percentage of the value of the County's gross agricultural production. Missoula also has two community supported agriculture (CSA) programs, both operated by the non-profit organization, Garden City Harvest. In CSA, members purchase a "share" of the farm/garden's produce at the beginning of the season and receive a weekly box of fresh food throughout the growing season. We suspect that some of the direct marketing activity is not captured by available statistics, and we have tried to address that concern in other parts of the Community Food Assessment.

In contrast to the infrastructure for processing and handling raw agricultural products, there is certainly an established and economically viable system for distributing food that has already been prepared for consumption. The number of food wholesalers (which typically distribute groceries to retail outlets) rose during the 1990s, increasing from 12 in 1992 to 16 in 2001. Their sales accounted for nearly \$60.5 million in 1997. As of 2001, there were 52 food retailers in the County (i.e., stores that sell food items for home preparation or consumption, excluding convenience stores). Food retail sales were \$164 million in 1997 (in 2002 dollars).

As eaters in Missoula County increasingly purchase food to eat away from home, the number of food servers – places that sell prepared food/drink for consumption on the premises such as restaurants – has grown considerably, reaching over 260 in 2001. Sales

in this sector topped \$125.7 million in 1997. Employment in the food distribution system (i.e., processors, wholesalers, retailers, and eating places) accounted for about 13.6% of all employment in the County in 1995 (the most recent statistics obtained). Most of that employment is in the retail sector and in food services, rather than in food processing or wholesaling, which have declined in importance as job sectors in the County.

EATERS

Population growth in the County is well recognized, but rarely do we think of the people who live here as eaters. The steady increase in the number of eaters (population) – growing by 114% between 1960 and 2000 – greatly influences our food system.

Missoula County residents spend a considerable amount of their per capita income on food, and they also are increasingly spending money to eat meals away from home. In 1997, residents spent nearly 16% of their per capita income on food. In that same year, residents spent 36% more on food than the typical US citizen. And, like most people in the U.S., Missoula County residents are dining away from home more frequently than in the past. For every dollar that eaters in Missoula County spent on food to eat “away from home” in 1972, they spent \$2.55 for food to eat “at home.” By 1997, for every dollar spent on food to eat away from home, eaters in the County spent only \$1.31 on food to eat at home. (Note that tourists and the University of Montana student population may affect the accuracy of these estimates).

Despite the abundance of food produced in the U.S., many people still go hungry or are food insecure (i.e., they experience times when they do not know if they can obtain their next meal). Hunger and food insecurity are largely a function of the ability to buy food. Although per capita income in Missoula County is relatively high in comparison with other Montana counties (4th out of 56), it is still below the national per capita income. In 2000, nearly 15% of people and 9% of families in the County lived below the poverty line.

Often we think of the government food and nutrition programs as providing a safety net. For a variety of reasons, however, many people in need are not accessing these programs. For example, the average monthly participation in the Women, Infants, and Children (WIC) Program was 2,533 in 2002. Strikingly, only about 30% of the students eligible to participate in the Free and Reduced School Lunch Program actually do participate (based on data from 1999 through 2002). Likewise, many low-income people are apparently not participating in the food stamp program. For instance, at the time of the last Census of Population in 2000, about 6% of the County’s population received food stamps in an average month. But nearly 15% of the population lived below the poverty line. Although program participation has increased somewhat in recent years, anti-hunger advocates have identified increasing food stamp participation as a priority. As discussed in this report, welfare reform, funding cuts, and other barriers play a role in these participation rates.

Food pantries and other emergency food providers often fill the gap left open by the modest rates of participation in government food and nutrition programs. Evidence suggests that most of the emergency food providers in the County have seen an increased use of their services in recent years. Clients made nearly 31,300 visits to the Missoula Food Bank in 2002; that number was up 19% from four years prior (1998). The Poverello Center served about 300 meals a day in 2001 and 2002, while a fairly new agency, Missoula 3:16, served an average of 66 meals a day in 2002. The only agency that saw a decline in the number of clients served in recent years was the Salvation Army, which distributed 48% fewer food boxes in 2002 than it did in 1999. The Seeley-Swan Food Pantry was the only rural agency for which we were able to obtain statistics. They distributed 825 boxes of food in 2002, which was 77% more than they did in 1999, the year they opened the pantry. It appears that most emergency food programs are located in the City of Missoula, leaving many rural areas underserved.

Our Foodshed in Focus suggests that there is a greater need for attention to the changes occurring in Missoula County's food system. Despite the increase in the number of farms in the County, it seems possible that many of our smaller farms may be primarily rural residences with agricultural enterprises playing a fairly minor economic role. Economically, agriculture here has not generated much in terms of the market value of agricultural products sold, which in turn is compounded by the loss of the infrastructure necessary for handling and processing agricultural products. Perhaps the brightest spot in the local food system is the strength of the food wholesaling, retailing, and food service sectors of the distribution system. This trend is consistent with population increases and with the reality that, like most North Americans, we spend a greater portion of our food dollars eating out than we used to. The extent to which food distribution establishments are locally owned was not part of this analysis, but it is an area in need of further study. Although the retail and the food service sectors may be doing well, far too many people in the County are living in poverty, struggling to obtain their next meal, and increasingly relying on emergency food sources.

This synopsis tells only part of the story; we hope you will find the details of the report useful and illuminating. The other components of the Missoula County Food Assessment will add to the analysis presented in this report. The long-term health of our local food system is an important indicator of agricultural sustainability and our community's food security now and in the future.

