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REDEVELOPING A MONTANA FOOD PROCESSING INDUSTRY:  
THE ROLE OF FOOD INNOVATION CENTERS

By

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Professional Paper

presented in partial fulfillment of the requirements  
for the degree of

Master of Science  
in Environmental Studies, Sustainable Food and Farming

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## Redeveloping a Montana Food Processing Industry: The Role of Food Innovation Centers

Chairperson: Dr. Neva Hassanein

Montana produces a staggering amount of food crops, yet the state struggles to enjoy the fruits of this abundance. The majority of Montana crops and livestock are shipped out of state as raw commodities, a practice that retains very little of the added value of the crop. Processing these crops within the state would help retain more of their value; however, Montana's food processing industry has undergone changes that have resulted in decreased availability of food processing facilities and services to agricultural growers and producers. Over the past 70 years, there has been a simultaneous decline in decentralized food manufacturing and an increase in food manufacturing consolidation nationally. Although the process of change is not well documented, the result has been a decreased availability of food that was both grown and processed in Montana. This decreased availability of Montana foods may be remedied in part by the establishment of food innovation centers.

This professional paper aims to increase understanding of food innovation centers in order to contribute to the discussion surrounding the desired redevelopment of a Montana food processing industry. For the purpose of this research, a food innovation center is any program that offers facilities for food processing and testing, and often includes technical assistance for marketing, business development, and regulation compliance. The research objectives are threefold: 1) explain both the historical and contemporary context of food processing in Montana, 2) describe and analyze what other states are doing with regard to food innovation centers, and 3) utilize the research findings to make recommendations for how food innovation centers may or may not address identified needs regarding food processing in Montana. Eleven existing food innovation centers are described and analyzed based primarily on telephone interviews with their directors and staff. Based on the analysis, the report concludes by outlining recommendations and options for establishing a food innovation center network in Montana.

## ACKNOWLEDGEMENTS

Many people deserve credit for making this research possible. First, I would like to thank the Grow Montana coalition for its commitment to the vision of a sustainable, equitable, food-reliant Montana. Thank you to Grow Montana's Steering Committee for sharing their valuable expertise, and for the funding that made this research possible. Thanks are also in order for the Economic Affairs Interim Committee of the Montana Legislature for being an outlet for this research and for taking the time to listen to what I had to say.

This research is due in large part to the willingness of food innovation center professionals across the United States and Canada who gave freely of their time and knowledge. To these people—Jan Tusick, Ken Gossen, Jim Toomey, Gary Reineccius, Rolando Flores, Lou Cooperhouse, Elena Arguello, Olga Padilla-Zakour, Michael Morrissey, Jim Smith, and Brian Norder—thank you. It is my hope that this research may be of some use in the valuable work you are all doing at your respective food innovation centers.

I would be remiss if I did not acknowledge all of the friends and family who stuck by me through this whole process, especially during those times when life got in the way of my goals. They offered encouragement, support, and advice whenever I needed it. Without them, this paper would never have come to be.

Finally, thank you to my professional paper committee. To Dr. Neva Hassanein, for her tireless reading of drafts at every stage of development. Without her insightful comments and suggestions this research would have been a mere shell of what it has turned out to be. And for her teaching and the important lessons I have learned. To Tom Campbell, who brings his unique knowledge of the culinary world to the table and adds valuable insight to the dialog surrounding a sustainable Montana food system. And to Josh Slotnick, for opening my eyes to the poetry of sustainable farming, the beauty of agricultural Montana, and the joy that comes with getting your hands dirty for something you care about. And most of all, for his unwavering friendship.

TABLE OF CONTENTS

List of Figures and Tables .....v

Introduction .....1

Chapter 1: The historical and contemporary context  
of food processing in Montana .....5

Chapter 2: Laying the groundwork: The ins and outs  
of food innovation centers .....24

Chapter 3: Lessons from existing food innovation centers.....59

Conclusion: Recommendations for improving and expanding  
food innovation centers in Montana .....75

Works Cited .....88

Appendix A: Grow Montana Steering Committee members.....93

Appendix B: Senate Joint Resolution 13.....94

Appendix C: SJR 13 preliminary interview analysis.....96

Appendix D: SJR 13 initial list of innovative value-added  
food and agriculture policies from other states.....101

Appendix E: Recommendations regarding Montana food  
processing and distribution generated at the  
Governor’s Food and Agriculture Summit.....105

Appendix F: Food innovation center interview guide.....106

LIST OF FIGURES AND TABLES

Table 1.1: Crops and animals that have been commercially grown in Montana .....6

Figure 1.1: Change in number of Montana food manufacturing establishments over time .....8

Figure 1.2: Change in number of Montana food manufacturing employees over time .....9

Figure 1.3: Most of the value of US food, fiber, and fuel products at final sale is added after they leave the farm .....15

Figure 2.1: Value added as a percentage of total agriculture and food exports (2004).....25

Table 2.1: Organizational structures of food innovation centers.....32

Figure 2.2: University-based structure .....34

Figure 2.3: Government structure.....36

Figure 2.4: Non-profit structure.....38

Table 2.2: Services offered by food innovation centers.....39

Figure 2.5: Interim production and co-packing.....41

Table 2.3: Markets served by food innovation center clients.....52

## INTRODUCTION

Montana produces a staggering amount of food crops, yet the state struggles to enjoy the fruits of this abundance. The majority of Montana crops and livestock are shipped out of state as raw commodities, a practice that retains very little of the monetary value of the crop. An alternative to shipping commodities out of state would be to process them first. Food processing is defined as “any of a variety of operations by which raw foodstuffs are made suitable for consumption, cooking, or storage” (Encyclopedia Britannica Online 2008). Processing these crops within the state would help retain more of their value; however, Montana’s food processing industry has undergone changes that have resulted in decreased availability of food processing facilities and services to agricultural growers and producers. Over the past 70 years, there has been a simultaneous decline in decentralized food manufacturing and an increase in food manufacturing consolidation. Although the process of change is not well documented, these changes have resulted in a decreased availability of food that was both grown and processed in Montana.

On a deeper, more personal level, this decline in availability of Montana-grown and –processed food translates into a lack of connection between people and the land they live on, the food that is grown there, and the individuals who grow it. Across the state, and indeed the entire country, there is an increased demand for local food. Consumers are beginning to place more importance on where and how their food was grown and processed. The individuals behind this increased demand have many reasons for

choosing local food—the joy of eating fresher, tastier food, the desire to support local economies, and even the hope of contributing fewer fossil fuels to the atmosphere by eating closer to home.

Montana is not alone in this struggle to consume more local food in the face of so many challenges. Across the country, food processing is consolidating, food imports are increasing, and agricultural dollars seem to disappear right out of the hands of much-deserving farmers and food entrepreneurs. In order to move toward a solution, some states have created food innovation centers in order to retain more of the value of agricultural crops within their respective communities.

Food innovation centers may be a part of the solution to these problems. A food innovation center is any program that offers facilities for food processing and testing, and often includes technical assistance for marketing, business development, and regulation compliance. These centers fall under different names, offer different services, have different structures, and are funded in different ways. The general purpose of these centers is assisting food businesses with the development and manufacture of their product, which increases the amount of value-added food processing in a given area. This increase in regional value-added food processing does several things: it gives agricultural growers and producers an alternative, non-commodity outlet for their crops and livestock, connects these growers and producers with local food entrepreneurs who want to turn their crops and livestock into value-added food products, keeps more agricultural dollars circulating within the region, and increases the availability of locally-grown and –processed food to consumers. Together, these factors translate into a more sustainable food system. Though there is a distinct lack of literature on these types of



centers as a whole, this research seeks to begin to understand how food innovation centers could help reinvigorate food processing in Montana.

Grow Montana was the impetus behind the research. Established in 2002, Grow Montana is a broad-based coalition of groups (See Appendix A) whose common purpose is “To promote community economic development policies that support sustainable Montana-owned food production, processing, and distribution, and that improve all of our citizens’ access to Montana foods” (Grow Montana 2007). Towards this goal, Grow Montana has prioritized the improvement and expansion of food innovation centers within the state as a means of making more Montana food available to Montanans and of revitalizing the local food economy. In the 2007 Montana Legislature, Grow Montana and its allies helped to pass Senate Joint Resolution 13 (SJR 13), an interim study bill on Montana food processing (see Appendix B for bill language). Specifically, SJR 13 focuses on identifying the barriers, needs, and opportunities associated with value-added food processing in Montana. In order to assist Grow Montana and to inform the SJR 13 study process, this professional paper explores the possibilities of improving Montana’s only existing food innovation center, Mission Mountain Food Enterprise Center (MMFEC), and of creating a network of food innovation centers across the state.

There is no single solution to the declining sustainability of Montana’s food system. It will take countless people working on many initiatives and on various levels to start retaining more of Montana’s agricultural dollars within the state and thereby creating a more sustainable food system. Food innovation centers may simply be one small step toward that future.

The goal of this research is to figure out how food innovation centers may help reinvigorate Montana's food processing industry. Chapter One examines the historical and contemporary context of food processing in Montana. Chapter Two explains the ins and outs of the various facilities studied, noting both similarities and differences between all of them. From there, Chapter Three looks at what the key staff people at these centers said works well for them and what is most challenging. In particular, Chapter Three pays close attention to the advice these staff had for Montana with regard to improving and expanding a network of food innovation centers in the state.

CHAPTER 1:  
THE HISTORICAL AND CONTEMPORARY CONTEXT OF FOOD PROCESSING IN MONTANA

*In 1950, seventy percent of all the food Montanans ate was grown in state. We used to grow and process, on a commercial scale, peaches and apricots, watermelon and strawberries, asparagus and celery, sweet potatoes and squash. Montanans had year-round access to local apples, beets, cabbage, carrots, onions, potatoes, turnips, rutabagas, and miscellaneous other vegetables. Together with our grain and meat products, Montana produced a nutritionally complete year-round diet (Matheson 2000).*

The Problem: Decline of Food Processing Industry and Montana's

Ability to Retain Profits From It

Montana used to be relatively self-sufficient when it came to producing much of the food that was eaten in the state. Native American peoples made use of over 60 species of wild, edible food plants (Herrin and Gussow 1989). Additionally, in spite of the fact that Montana has less than ideal climate and soil conditions, historical documents show that Montana's early European settlers were self-sufficient in food production (Herrin and Gussow 1989). This self-sufficiency was largely out of necessity: Montana was (and still is) relatively isolated and lacking in transportation networks, forcing people to grow or forage what they needed to survive. Montana's food autonomy began to decline as transportation costs dropped and foreign markets opened in the early 1900s. However, "until the early 1950s, much of the state's food supply continued to be produced locally" (Herrin and Gussow 1989, 271). Table 1.1 lists the many foods that have been grown commercially in Montana.

**Table 1.1: Crops and animals that have been commercially grown in Montana**

Grains	Vegetables	Fruits	Animals	Herbs	Forages
Barley	Asparagus	Apples	Beef	Basil	Alfalfa seed
Buckwehat	Arugula	Apricots	Bison	Caraway	Alfalfa hay
Canola	Beans, green	Blackberries	Chickens	Coriander	
Corn	Beets	Cantaloupe	Emu	Dandelion	Austrian winter pea
Flax seed	Broccoli	Cherries	Fish (farmed)	Echinacea	Bromegrass seed
Kamut©	Cabbage	Elderberries	Lamb	Fenugreek	Corn silage
Millet	Carrots	Grapes	Llamas	Garlic	Grass silage
Montina©	Cauliflower	Huckleberries	Ostriches	Lavender	Kentucky bluegrass seed
Mustard seed	Celery	Peaches	Pheasants	Milk Thistle	
Oats	Corn	Pears	Pigs	Mint	Small grain hay
Rye	Cucumber	Plums	Turkeys	Parsley	Sorghum silage
Safflower	Lettuce	Raspberries		Shallots	Tame hay
Sorghum	Onion	Rhubarb		Many more	Wheatgrass seed
Spelt & emmer	Parsnips	Strawberries			
Sunflower	Peas, green	Watermelon			
Triticale	Peppers		<b>Other</b>		
Wheat	Potatoes		Christmas trees		
	Pumpkins		Fleeces		
	Radishes		Flowers, cut		
<b>Legumes</b>	Rutabagas		Flowers, edible		
Garbanzo & other dry beans	Spinach		Honey		
	Squash		Luffas		
Lentils	Sweet potatoes		Mushrooms		
Peas (dry)	Tomatoes		Nursery plants		
Soybeans	Turnips		Sod		

*Source: Mish 2004, 49*

In 1941, only about 32 percent of Montana’s food was imported from out of state; by 1985, that number had more than doubled to 66 percent (Herrin and Gussow 1989).

Today, Montana ranks second in the nation for the number of acres in agricultural production (McLeay and Barron 2006). Yet, most of what is produced on these acres is being shipped out of the state, and often out of the country. “In a time span of just 50 years the percentage of Montana-produced food consumed by Montanans has fallen from 70% to closer to 5%” (McLeay and Barron 2006, 4-10). This has many serious implications for Montana consumers, producers, and communities, including a lack of fresh food, falling profits for agricultural products, and economically depressed rural communities. The situation has gotten so dire that “In 2003, eight of the ten poorest counties in the nation (based on wages and salaries) were in Montana, all of them

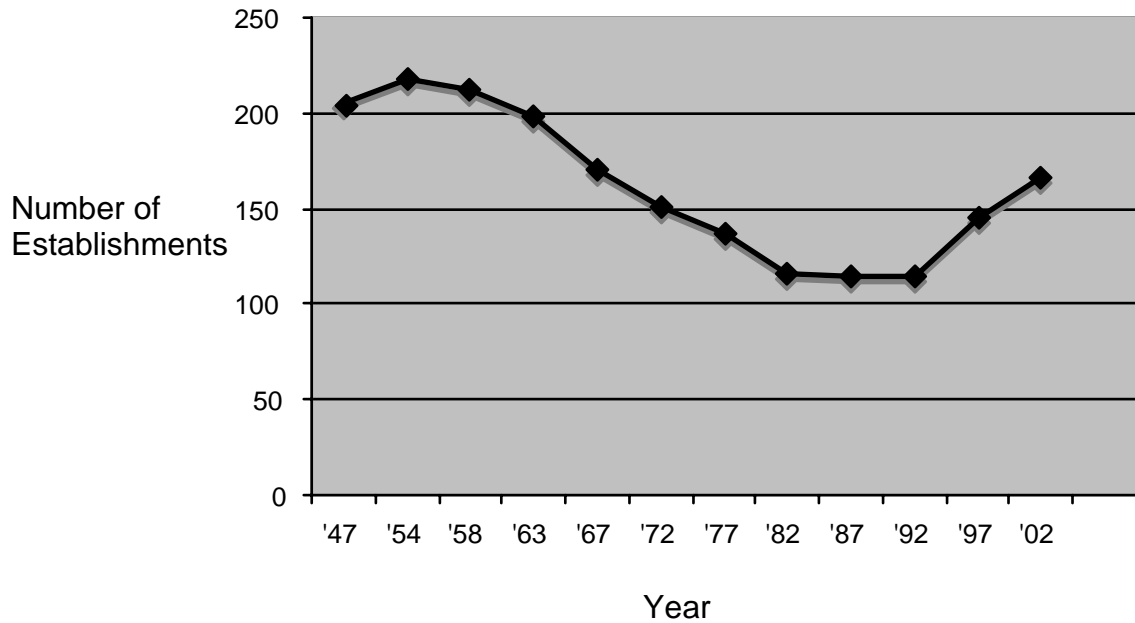
agricultural” (Western 2005, 8). In 2005, when the U.S. Census Bureau released its report, “Montana was 45<sup>th</sup> in the nation in terms of median household income, rolling around at the bottom of the barrel with West Virginia and Louisiana” (Western 2005, 9).

Crops are now being shipped out of state along with the value that could have been retained if we had processed and consumed the food in state. Meanwhile, we send money out of state in order to ship food in from elsewhere for us to eat. Herrin and Gussow (1989) found significant increases in the amount of food imported to Montana between 1941 and 1980. These increases were a result of the decline and consolidation of food processing industries in the state. One of the reasons that Montana used to be so food self-sufficient was because the state had a thriving food processing industry to process its ample agricultural resources.

The U.S. Census Bureau defines a food manufacturing establishment as any establishment that “transform[s] livestock and agricultural products into products for intermediate or final consumption” (U.S. Bureau of the Census 2008). In 1947, Montana had 206 food manufacturing establishments, a number which peaked in 1954 at 218. The number of Montana food manufacturing establishments has steadily decreased over the years (U.S. Bureau of the Census 1949). By 1992, the number of these establishments had been nearly cut in half, falling to only 114 (U.S. Bureau of the Census 1992). There has been a slight increase of food manufacturing establishments in Montana over the past decade, with 166 establishments in 2002 (U.S. Bureau of the Census 2003). This increase in food manufacturing establishments is an excellent opportunity for further research. Who are these new businesses? What have been their successes and challenges? As we shall see, the demand for local, value-added food remains to be met in

spite of this increase in food manufacturing establishments. See Figure 1.1 for an illustration of this trend in Montana food manufacturing establishments.

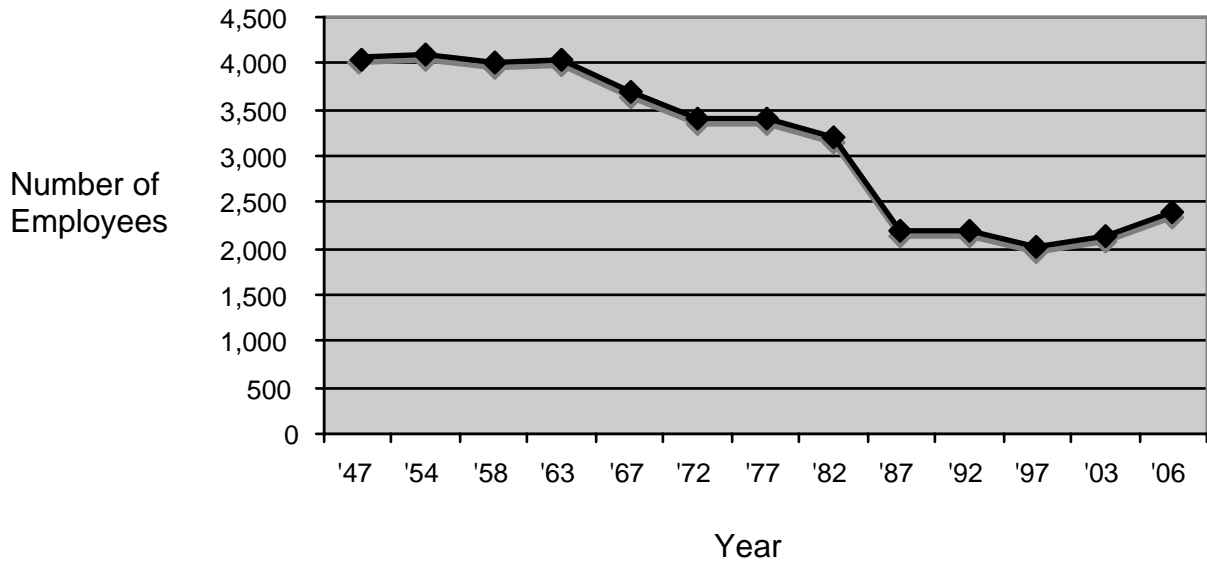
**Figure 1.1: Change in number of Montana food manufacturing establishments over time**



*Source: U.S. Bureau of the Census*

Accordingly, the number of Montanans employed by food manufacturing establishments has also decreased. In 1947, these establishments employed 4,079 people, a number which had dropped to only 2,381 in 2006 (U.S. Bureau of the Census 1949 and 2006). The historic low came in 1998, with only 2,024 individuals employed by food manufacturing establishments in Montana (U.S. Bureau of the Census 1998). Figure 1.2 is a representation of this downward trend in Montana's food manufacturing employment.

**Figure 1.2: Change in number of Montana food manufacturing employees over time**



*Source: U.S. Bureau of the Census*

Fewer available food manufacturing establishments has many serious economic implications for Montana. Fewer establishments means fewer jobs, which discourages economic investment and growth. Similarly, fewer establishments translates into a limited number of facilities in which farmers, ranchers, and food entrepreneurs can process their products. This limited number of value-added products makes it increasingly more difficult to meet the consumer demand for local food.

Across the country and in Montana, consumers have begun demanding local food. There has been a surge in consumers' desire to know where their food comes from, who grew it, and how it was produced. Institutional markets are one example of this increased demand. The University of Montana's Farm to College program began in the spring of 2003, the first of its kind in Montana. Over the past decade, "farm to cafeteria" programs

like this one have sprung up across the country in order to serve local and regional foods in schools and on college campuses. In fact, “at least 200 colleges and an estimated 950 schools (K-12) in more than 35 states” are participating in the movement to bring local food to these institutional markets (Hassanein et al. 2007, 1).

In 2006, researchers from the University of Montana, in conjunction with Grow Montana, conducted a study of the University’s Farm to College Program in order assess the benefits, challenges, and needs associated with the program. The research team conducted a dot survey of 380 students who eat regularly in the main dining hall to assess their perceptions of Farm to College. Most of the students value the program, “with 84% reporting it is very or somewhat important to them as consumers in the dining halls. The most frequently mentioned reasons are that they like supporting Montana’s farmers and ranchers (42%) and keeping more money in Montana’s communities (21%) . . .” (Hassanein et al. 2007, 3).

One of the difficulties associated with providing local and regional food products to the University is that many of the participating growers and producers sell only food products in their base form (e.g., heads of lettuce instead of washed, chopped lettuce). However, universities and other institutions have become used to receiving pre-processed, ready-made food products. The difference between these two forms of food products creates a challenge for both the institution and the vendors who supply it with product. A major finding of the University of Montana study was that “more value-added processing in the state could greatly expand the ability of our food-related businesses to serve the needs of public institutions and extend the availability of local products throughout the year” (Hassanein et al. 2007, 2).



Farm to cafeteria projects are not the only evidence of increased interest in local food. Across the state local food advocates have come to realize the importance of expanding entrepreneurs' access to food processing facilities in order to retain value in Montana and to meet consumer demand. This increased attention to local food has reinvigorated interest in rebuilding food processing infrastructure across the state. In March of 2007, nearly 300 people with an interest in Montana's food system met in Helena to develop some concrete recommendations for how to overcome the food and agriculture challenges we face as a state. This meeting, the Governor's Food and Agriculture Summit, held several working groups that each came to consensus on the most important steps needed to improve the state's food system. The overall recommendation of the food processing and distribution workgroup was to: "Promote development of more local and regional food processing and distribution systems. Increase the resources and capacities needed to support such development, including cooperatives" (see Appendix E). Demand for local food is strong across the state, but this demand is not being met in part because of a decrease in available food processing infrastructure.

But why did Montana lose its food processing capabilities in the first place? The answer lies in the story of Montana agriculture, a story that has been repeated in similar fashion across the country. Warren Palmer, in conjunction with The Cornucopia Project, conducted a study of the Montana food system, which found that "Montana shares some, but not all, of the problems of the larger U.S. food system. In addition, [Montana's] food system will encounter in the years ahead pressures that are uniquely its own" (1983, 3). Agriculture in this country has made a relatively swift transition from decentralized,

small-scale, family-owned farms that produce diverse crops to a system characterized by a high degree of regional specialization and production of commodities in monocultures. Economic power has become concentrated in the hands of a few giant corporations. According to Hendrickson and Heffernan (2002, *Opening spaces*), food chain clusters are a significant factor in this trend and in the loss of available food processing across the country. “Food chain clusters are networks of relationships where relatively few decision-makers control vast amounts of resources” (Hendrickson and Heffernan 2002, *Opening spaces*, 347). Food chain clusters take the power of decision making out of the hands of people living and working in a particular locale who are more likely to take into account unique factors such as local environment and economy.

Possibly even more alarming, however, is the corresponding economic concentration of food processing. In the late 1980s Hendrickson and Heffernan (2002, *Multi-national*) began keeping track of the total market share held by the four largest corporations in each of the major agricultural commodities. They used the four firm concentration ratio, or CR4, because “there was a degree of consensus among economists that if four firms had 40 percent or more of the market, it was losing its competitive character. At that time, the market share held by the largest four processing firms for the various grains and oilseeds was already over forty percent” (2002, *Multi-national*, 7). Over the past 20 years, this concentration has increased significantly.

Flour milling, one of Montana’s principal food manufacturing sectors, reached the CR4 threshold of 40 percent back in 1982 (Hendrickson and Heffernan 2007). Essentially, this means that for the past quarter century wheat milling in the United States has been operating without competitive constraints. If a CR4 of 40 percent were not

serious enough, this number has increased dramatically over the years. In 2005, the CR4 for wheat milling was up to 63 percent (Hendrickson and Heffernan 2007). By 2007, the CR4 was no longer known, but the CR3 (or total market share of the *three* largest firms) was up to 55 percent (Hendrickson and Heffernan 2007). To put it a different way, these three firms—Cargill/CHS (Horizon Milling), ADM, and ConAgra—controlled a full 55 percent of the total market share of the wheat milling sector in the United States in 2007. Not surprisingly, it is near impossible for smaller wheat millers to compete with such giants.

Beef, the other main agricultural sector in Montana, has undergone an even more alarming concentration. Most Montana calves end up in the feedlots of the four largest such firms, who in 2007 had a total one-time capacity of 1,926,000 calves (Hendrickson and Heffernan 2007). The calves are then transferred from the feedlots to the beef packers, which are also massively concentrated. In 2007, the four largest beef packing firms—Tyson, Cargill, Swift & Co., and National Beef Packing Co.—controlled 83.5 percent of the total market share, up from 72 percent in 1990 (Hendrickson and Heffernan 2007).

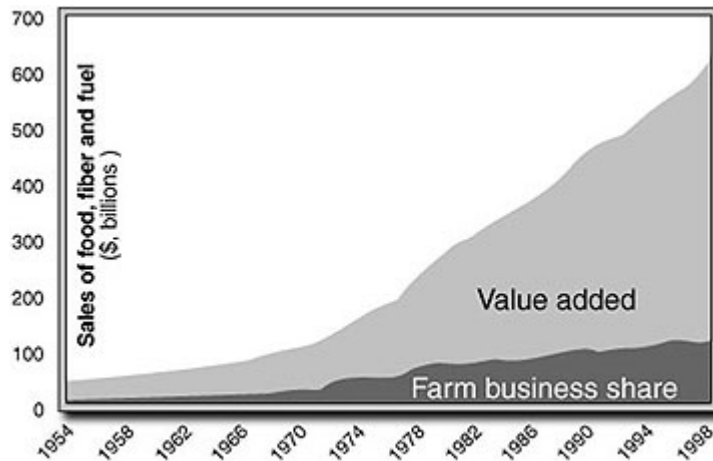
Other agricultural sectors are no exception. In 2007, the CR4 for pork packers was an estimated 66 percent, 58.5 percent for broilers, 55 percent for turkeys, and 80 percent for soybean crushing (Hendrickson and Heffernan 2007). In the corn seed sector, two sole companies control 58 percent of the total market share (Hendrickson and Heffernan 2007).

What are the implications of all of these numbers for food processing in Montana? Hendrickson and Heffernan (2002, *Multi-national*) are careful to point out that these data are nation-wide. They go on to explain the situation in a local context:

. . . Because of shipping expenses and limited information, farmers do not realistically have access to all the markets. In most local markets, the concentration is much higher. Increasingly, farmers report that they have access to only one market. In broiler production for example there are about forty broiler-integrating firms in the country. In total they have about 240 processing centers where they process the feed and the birds. The integrating firms will travel up to 25 to 30 miles from the centers to secure growers. There are very few places in the country where two 30-mile radius circles overlap and even in those areas a norm has evolved between integrating firms to not raid the other firm's growers. Thus, most all broiler growers operate in a monopolistic market (Hendrickson and Heffernan 2002, *Multi-national*, 8).

Some of Montana's characteristics—large geographic area, low population, and particularly high transportation costs—only serve to amplify these monopolistic tendencies. Agricultural producers have few, if any, options for adding value to their crops and livestock. If a beef producer decided she wanted to sell cuts of her beef locally or regionally so that she could retain more value for her efforts, where would she process it? Many see their only option as shipping their crops and livestock out of the state as raw commodities, a practice which is far from economically feasible. Figure 1.3 is an illustration of the disparity between the value agricultural growers and producers receive for their crops and what value-added enterprises receive.

**Figure 1.3: Most of the value of US food, fiber, and fuel products at final sale is added after they leave the farm**



*Source: Parcell, Brees, and Giddens 2002*

This has been the story of United States agriculture over the past century—consolidation, centralization, and commoditization. Montana has been no exception. Neighbors have bought out neighbors, and small and medium-sized farms have become larger operations—all in an effort to keep a foothold in the ever more power-centralized agriculture industry.

#### Part of the Solution: Food Innovation Centers

A possible solution to at least part of this expansive, many-layered problem is to increase the amount of value-added food processing within the state. About 75 percent of agricultural products have undergone some form of processing before being purchased by the consumer (Palmer 1983). If we carried out more of that processing within the state,

we would retain a higher percentage of the value of our crops, which translates to higher profits for Montanans in all stages of the food and agriculture system.

One proposed strategy for increasing the amount of food processing in Montana is to improve and expand the state's network of food innovation centers. There are many different types of programs that deal with value-added food processing, and almost as many names for them. *Value-added* refers to anything that "allows farm and ranch products and/or services to be sold for more than commodity prices" (Mish 2004, 5). Value can be added to agricultural products through several means: developing new products, processing to transform existing products, marketing to increase consumer value, and/or organizing to increase efficiencies (Mish 2004). An example of adding value through processing is taking a head of lettuce and chopping and bagging it. The chopped and bagged lettuce has a higher value than the head of lettuce. Selling a steak as grass-fed or organic is one example of marketing to increase consumer value. For this paper I will be focusing on value-added in the sense of processing food to transform existing products.

Value-added agriculture often has a much broader meaning than solely food products, and the term *agriculture innovation center* reflects this breadth. However, using the word agriculture, while inclusive of farmers and ranchers, may alienate food entrepreneurs who are not agricultural producers. As an alternative, the term *food innovation center* is more inclusive. For the purpose of this paper, the term *food innovation center* refers to any program that offers facilities for food processing and testing, and often includes technical assistance for marketing, business development, and regulation compliance.

Other terms used for value-added food facilities include food enterprise center, cooperative development center, commercial kitchen, business incubator, pilot plant, and food processing center. I use *food innovation center* as an umbrella term for all of these; most of the terms in this list are included as services provided by food innovation centers. For example, business incubation assistance is often provided at food innovation centers. The one exception is *food enterprise center*. While *food enterprise center* (as in Mission Mountain Food Enterprise Center) is very similar to *food innovation center*, my sense is that *innovation* is a more often used term than *enterprise* in the national and international contexts. Additionally, though Mission Mountain calls itself a food enterprise center, it operates within an agricultural innovation center, and so can be included in both terms.

### Research Overview

In order to address the continuing decline of Montana's food processing industry, Grow Montana helped pass Senate Joint Resolution 13 (SJR 13) in the 2007 Montana Legislature. SJR 13 is an interim study bill that calls for research on how best to redevelop a food processing industry in Montana (see Appendix B for the bill language). One of the primary goals of the study is to investigate how the state of Montana can invest in value-added food production as a form of community economic development. The hope is that such investments will help the state better meet the increased demand for local food, keep more money circulating in Montana, and assist food businesses and agricultural growers and producers as they struggle to preserve their livelihoods.

The 2007 Montana Legislature assigned the Economic Affairs Interim Committee (EAIC) responsibility with carrying out the SJR 13 study during the legislative interim.

Since Grow Montana had a hand in getting the study bill passed, the EAIC asked them to help with the necessary research. As Grow Montana's policy intern and research assistant, I helped conduct research for SJR 13. The study calls for a two-prong research approach. One part of the research emphasizes the importance of getting input on Montana's food processing industry from Montanans in all sectors of the food system. The other part calls for finding out what other states are doing to effectively support food processing.

For the first part of the research, SJR 13 identifies 15 categories of key stakeholders to consult for input on how Montana should go about redeveloping its food processing industry (see Appendix B). Several individuals representing the Grow Montana steering committee helped conduct a total of 18 interviews within these categories of stakeholders. Data from the interviews were analyzed for common themes and presented to the EAIC at their meeting in Miles City in November 2007 (see Appendix C). I also presented information on innovative food and agriculture policies from other states (see Appendix D). Finally, I compared the results of the SJR 13 interviews with the recommendations generated from the March 2007 Governor's Food and Agriculture Summit (see Appendix E) to show the high degree of overlap in what people across the state are saying regarding food processing in Montana.

The SJR 13 interviews focused on identifying barriers, needs, and opportunities associated with food processing in Montana. Lack of technical and marketing assistance was perceived as the number one barrier to implementing more food processing in the state. Some other barriers were a lack of processing infrastructure/facilities; high costs



coupled with a lack of available capital; the need for a more cooperative and entrepreneurial climate; and complex and overwhelming regulations.

The number one perceived need/opportunity in order to overcome these barriers was to promote research and training in the University System and other appropriate agencies. A close second was the need to establish food-processing centers throughout the state to meet regional processing needs. A full seven of the eighteen respondents specifically mentioned the need to establish more facilities like Mission Mountain Food Enterprise Center (MMFEC) around the state.

MMFEC garnered attention because it is an innovative model that brings together business and cooperative development assistance with food processing capabilities in order to serve the small- to medium-sized food entrepreneur. MMFEC is housed within the Lake County Community Development Corporation (LCCDC), which is also a Certified Regional Development Center that provides leadership and support to its regional partners in Lincoln, Mineral, and Sanders counties (Lake County Community Development Corporation 2007). In addition, LCCDC houses the Mission Mountain Business Development Center and the Mission Mountain Cooperative Development Center. LCCDC also helps staff the City of Ronan's Housing Authority and the Lake County Community Housing Organization.

LCCDC was established as one of five Montana Agriculture Innovation Centers in 2004. The Montana Agriculture Innovation Center Program (MAIC) began with authorization by section 6402 of the 2002 Farm Bill (Knudson et al. 2004). The MAIC Program "operates to foster the entrepreneurial ability of agricultural producers, allowing them to reap the benefits of producing and marketing value-added products" (Montana

Agriculture Innovation Center 2005). The program is based out of the College of Agriculture at Montana State University. Four other centers were started as part of the program; they are Bear Paw Development Corporation in Havre, Beartooth Resource Conservation & Development in Joliet, Great Northern Development Corporation in Wolf Point, and Snowy Mountain Development Corporation in Lewistown (Montana Agriculture Innovation Center 2005). The goal of the Montana Agriculture Innovation Center Program is to

Provide Montana's agricultural producers with support and technical assistance in the assessment and implementation of a value-added process or product. [They] will assist the agricultural entrepreneur [in guiding] their enterprise from concept to a thriving value-added agricultural business thus enhancing profitability (Montana Agriculture Innovation Center 2005).

Many Agriculture Innovation Centers, including those in Montana, provide technical assistance for business and brand development, marketing, and regulation compliance; far fewer actually specialize in food processing, food safety training and product testing. LCCDC is the only Montana Agriculture Innovation Center that provides hands-on specialty food development and packaging assistance, in the form of MMFEC. MMFEC provides marketing assistance, business incubation, cooperative development, technical support, a certified 10,000 square foot shared-use commercial kitchen and processing facility, and specialty food services (Mission Mountain Food Enterprise Center 2007).

Based on the preliminary analysis and discussions in Miles City, there was a clear need for further research in order to contribute to the policy discussion by exploring how food innovation centers like MMFEC might address some of the existing gaps in the

food-processing sector. Specifically, this paper presents research that had three main objectives:

1. Explain both the historical and contemporary context of food processing in Montana.
2. Describe the structure and function of food innovation centers in other states and learn about their successes and challenges.
3. Utilize the research findings to make recommendations for how food innovation centers may or may not address identified needs regarding food processing in Montana.

The historical and contemporary context of food processing in Montana is contained above in Chapter One. Chapter Two includes the bulk of the findings, examining how eleven existing food innovation centers function. In order to accomplish this objective, I conducted telephone interviews with the directors or a key staff person at the following centers:

- *Mission Mountain Food Enterprise Center*, Ronan, Montana: Jan Tusick
- *Food Processing Development Centre*, Leduc, Alberta: Ken Gossen
- *University of Idaho Food Technology Center*, Caldwell, Idaho: Jim Toomey
- *Joseph J. Warthesen Food Processing Center*, St. Paul, Minnesota: Gary Reineccius
- *The Food Processing Center*, Lincoln, Nebraska: Rolando A. Flores
- *Rutgers Food Innovation Center*, Bridgeton, New Jersey: Lou Cooperhouse
- *Taos Food Center*, Taos, New Mexico: Elena Arguello
- *Northeast Center for Food Entrepreneurship at the New York State Food Venture Center*, Geneva, New York: Dr. Olga Padilla-Zakour
- *The Food Innovation Center*, Portland, Oregon: Michael Morrissey
- *Prince Edward Island Food Technology Centre*, Charlottetown, Prince Edward Island: Jim Smith
- *Vermont Food Venture Center*, Fairfax, Vermont: Brian Norder

The interviews focused on the directors' perspectives regarding what works well at their facility, challenges they face, and advice they have for Montana. Additionally, the directors were asked to describe the following characteristics of their respective centers: structure and history, services provided, user groups, markets served, and funding (see Appendix F for the interview guide). In choosing the centers to focus on, the goal was to concentrate on food innovation centers that represented a broad range of approaches. These centers were selected based on web searches, snowball sampling from other center directors, and general knowledge of centers commonly looked to as examples. Additionally, an effort was made to include facilities that existed in regions with similar geographic characteristics to Montana. All centers asked to participate in the study agreed.

Interviews ranged in length from 20 minutes to an hour, with follow up clarification done both over the phone and via email. Interviews were audio-recorded and transcribed for content. The resulting synopses were checked for accuracy by both the interviewer and interviewee. Each interview was read for thematic content, and lists of these themes were developed and consolidated into mutually exclusive categories. Sections within the interviews were coded according to these categories. Document review and website review were conducted to complement the interview data.

Based on the perspectives of the interviewees and my background research, Chapter Three contains recommendations for improving and expanding food innovation centers in Montana.

## Conclusion

Historically, Montana had a thriving food processing industry. Over the years, the number of Montana food manufacturing establishments has declined steadily as a result of low transportation costs, open foreign markets, commoditization of crops, and consolidation of food processing infrastructure. Even with a slight increase in food manufacturing establishments over the past 15 years, demand for local food remains to be met.

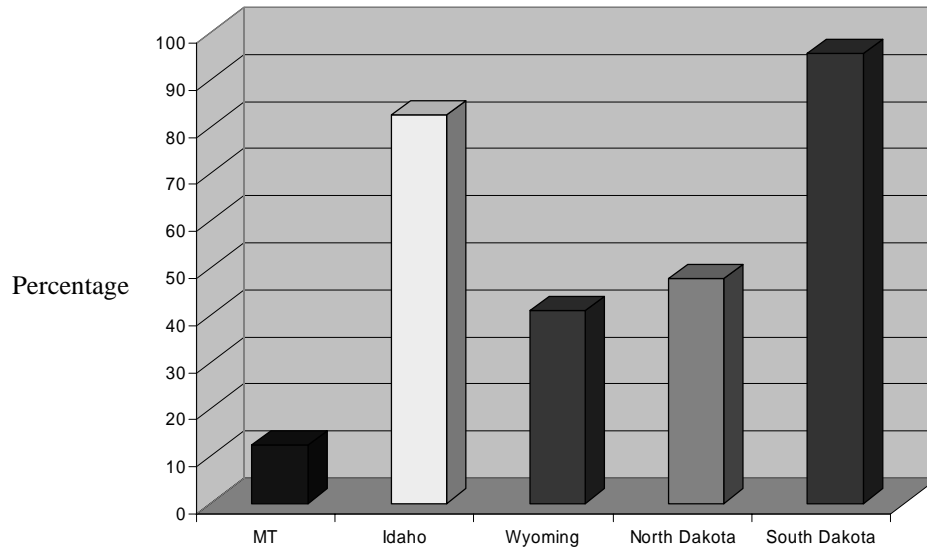
This research and the food innovation centers it focuses on may be one small step toward addressing these difficulties. This is the first study that I am aware of that reviews the work of these centers as a whole. Grow Montana, the Economic Affairs Interim Committee of the Montana Legislature, and other interested parties may consider these suggestions as they decide whether or not to embark on a food innovation center venture.

CHAPTER 2:  
LAYING THE GROUNDWORK: THE INS AND OUTS OF FOOD INNOVATION CENTERS

The fast-paced, competitive food processing industry can be intimidating to someone unfamiliar with it and promises to be a significant economic undertaking for even seasoned veterans. Food innovation centers can help food entrepreneurs get their foot in the door of the food industry, so to speak, by giving them the tools they need to succeed—knowledge, equipment, and practice. These centers could also give Montana’s food processing sector just the boost it needs to start thriving again. There is a distinct lack of research on food innovation centers as a whole; this research begins to address this gap.

While Montana’s food processing industry continues to struggle, other states seem to be doing a better job of promoting food processing. “In 2004, less than 10 percent of Montana’s exports were in a processed or value added form. This compares unfavorably with neighboring states such as Idaho and South Dakota where value added products comprise over 80 and 90 percent of combined agri-food exports” (McLeay and Barron 2006, 4-7). See Figure 2.1 for a visual representation of these statistics.

**Figure 2.1: Value added as a percentage of total agriculture and food exports (2004)**



*Source: US Department of Commerce (2004) in McLeay and Barron 2006, 4-8*

When it comes to food processing, each place has its own unique geographic, agronomic, and demographic characteristics that present both challenges and opportunities. Accordingly, food innovation centers have been tailored to meet the specific food processing needs of the respective region. In order to learn more about these specifics and how to improve and expand food innovation centers in Montana, I interviewed the directors or a key staff person of 11 such centers in the United States and Canada. See page 21 for a list of these centers. The information presented below on existing food innovation centers is largely based on these interviews, with supplemental material provided by the centers' respective websites. For simplicity's sake I refer here to these centers by their location, rather than their full name or an acronym.

The data has been organized categorically and is presented in this chapter under the following headings: organizational structure, services provided, user groups, markets served, and funding. Following is a brief synopsis of what makes each center unique.

**Mission Mountain Food Enterprise Center, Ronan, Montana:** The Mission Mountain Food Enterprise Center was started in 1998 after participating in the Alternative Energy Resources Organization's (AERO) Montana Food System Initiative, which led a group of community members through an assessment of the local food system and identified key strategies that needed to be developed in order to build and enhance a local food system. The center is a program of the Lake County Community Development Corporation, which is a non-profit, 501(c)(3) organization. Since its inception, MMFEC has served 165 clients and currently has 32 clients utilizing the facility and its technical assistance services. This number is up from only 3 clients in 1999. Mission Mountain Food Enterprise Center is the only facility in the state of Montana that offers the infrastructure and equipment entrepreneurs need to process their food product.

**Food Processing Development Centre, Leduc, Alberta:** The Alberta government started the Food Processing Development Centre in 1984 in direct response to the need to add value to the province's commodity products. The province did not want to be reliant on low-cost commodity production. The center is 100 percent government owned and operated. The annual operating budget is \$5.5 million, which includes operating programs, maintenance of equipment, staff, cleaning, and equipment purchasing. Building maintenance, power engineering, utilities, and others matters are paid for out of



a separate government budget. The center currently employs 39 full time employees. The numbers of clients at the center varies. There are 100-125 new products per year, one to three new contracts per year, and 25-30 companies actually processing and selling their products out the of the facility. The Food Processing Development Centre does a business evaluation of every company that comes in. They require that every client have a business plan, marketing plan, and exit strategy. The center will work with companies of any size as long as they have a plan for growth.

**University of Idaho Food Technology Center, Caldwell, Idaho:** The Food Technology Center was started in 2002 by the College of Agriculture and Life Sciences at the University of Idaho. It currently employs three full time and three part time employees. The center is currently serving around 60 clients, and works to create partnerships between local growers and entrepreneurs. It encourages its clients to support the local food economy by marketing their products locally and regionally as much as possible. The center has an annual operating budget of \$250,000, and revenues this year should equal approximately \$500,000. The Food Technology Center breaks even with the fees charged for services, but it is the Research and Development (R & D) portion of the facility that pays for freight and new equipment. R & D involves contracting with private firms like chemical companies and large food corporations. These contracts can be worth between \$20,000 and \$50,000.

**Joseph J. Warthesen Food Processing Center, St. Paul, Minnesota:** The Joseph J. Warthesen Food Processing Center is part of ongoing teaching, research, and service at

the University of Minnesota's Department of Food Science and Nutrition. The Department, together with the processing facility, was started in 1970. Prior to 1970, the facility focused on dairy and was infrequently used by people outside the department. Since 1970, the department has brought together meat, dairy, grain, extrusion, and beverage processing and now serves many clients outside of the department. Clients of the processing facility are very diverse—local entrepreneurs, the largest and second largest companies in the world, and everything in between.

**The Food Processing Center, Lincoln, Nebraska:** The Food Processing Center was started in 1983 when Nebraska legislators saw that very few value-added food products were remaining in the state. The center is affiliated with the University of Nebraska-Lincoln, but it was created by the Nebraska Legislature as a stand-alone organization. As such, it must operate on its own in terms of organization, management, and decision-making. The center employs 30 staff people, excluding faculty, and has an annual operating budget of \$1.5 million. It served about 40 clients in 2007, some of them repeat customers. This number varies each year, and excludes those clients who use the center solely for laboratory testing.

**Rutgers Food Innovation Center, Bridgeton, New Jersey:** The Rutgers Food Innovation Center began as a result of research conducted in 1997 by the Rutgers Department of Agriculture, Food, and Resource Economics. The center is part of the Rutgers New Jersey Agricultural Experiment Station. It was established in a federal empowerment zone, a federally recognized blighted area, in the agricultural sector of

southern New Jersey. The center was officially opened in 2001. In its first phase, the center was simply a rented office staffed by people from the food industry who provided virtual advice to clients. The center's second phase began in summer 2008, when the entirely grant funded 23,000 square foot processing facility was built. Rutgers Food Innovation Center has an annual operating budget of \$1.5 million, which includes subsidies from the university. It currently employs eight full time and six part time employees. The center has served 800 clients so far, which averages out to about 125 per year. Now that the facility has been built, the center hopes to be able to assist many more.

**Taos Food Center, Taos, New Mexico:** The Taos County Economic Development Corporation (TCEDC) has been working for 12 years to alleviate problems such as structural poverty, dead-end jobs, and unemployment that affect the people of northern New Mexico. The Taos Food Center is just one of TCEDC's programs. It operates as a private non-profit 501(c)(3) organization. The center operates under a familial and community-based system in which assistance is available to anyone and everyone who is interested in developing a food product. As a result, rental rates for storage and kitchen use at the center are artificially low. In fact, 96-98 percent of the services clients receive are gratuitous. TCEDC subsidizes the costs of these services. Taos Food Center is currently serving 51 clients, though this number fluctuates a great deal.

**Northeast Center for Food Entrepreneurship, Geneva, New York:** The New York State Food Venture Center, together with the University of Vermont's Center for Food

Science, received \$3.8 million in funding in 2000 from the USDA Fund for Rural America. This funding allowed the two centers to operate jointly as the Northeast Center for Food Entrepreneurship. When that funding ran out in 2005, the two centers decided to split and continue operating separately. The center currently does not have a budget separate from that of the university. Cornell University pays for the director's salary and half of the salary for the extension support specialist. All other expenses are covered by grants and service fees. The Northeast Center for Food Entrepreneurship receives approximately 1,000 requests for assistance each year. It works in depth with about 200 and ends up with about 500 new food products each year. Because New York is a large state, the center receives few walk-in clients. Most clients work with the center through mail, email, phone, and fax.

**The Food Innovation Center, Portland, Oregon:** Constructed in 1999, The Food Innovation Center became one of 11 Oregon State University experiment stations in 2000. Most of these stations deal with different commodity groups—wheat, potatoes, fruits, vegetables, cattle, etc.--and tend to be located in rural areas and focused on agricultural production. The Food Innovation Center is different in that it is located in downtown Portland and focuses on the food industry. The center is a partnership between Oregon State University and the Oregon Department of Agriculture. It serves 50-70 clients per year, a number that is currently increasing. The center's annual budget includes \$670,000 from the university, \$300,000 from grants, and \$250,000 from grants. It's ten employees include two faculty members, 5 research assistants, and three staff.

**Prince Edward Island Food Technology Centre, Charlottetown, Prince Edward**

**Island:** Prince Edward Island Food Technology Centre began in 1987 as an initiative of the provincial government. Prince Edward Island is the smallest province in Canada, with a population of around 140,000. The center is disproportionately large for the population because of the province's robust agricultural and food processing sectors. It employs an average of 30 staff people and has an annual operating budget of \$3.5 million. Over 50 percent of the center's clients sell internationally, with most seafood and value-added potato products going to the United States. For analytical services, the Food Technology Centre typically serves about 100 clients per year; for product development and other technical projects, an additional 50 clients use the center each year.

**Vermont Food Venture Center, Fairfax, Vermont:** Vermont Food Venture Center began in June 1996 with the assistance of a \$300,000 USDA grant. The center is a project of the Economic Development Council of Northern Vermont, a 501(c)(3) organization. Vermont Food Venture Center considers itself a full kitchen incubator and has had both formal and informal relationships with the University of Vermont and Cornell University over the years. On average, the center does 35-40 processing ventures per year, with two to three times that number of inquiries and consulting projects.

Organizational Structure

Each food innovation center is structured differently, though there are many similarities among all of them. In general, all of the food innovation centers researched

for this paper fit into one of three structural categories: university-based, government, and non-profit. Of the eleven centers, six are university-based, three are non-profit, and two are governmental. Within these categories, the centers each have nuances that help them fit into their particular political and economic climates, demographics, and geographic region. See Table 2.1 for a breakdown of these organizational structures.

**Table 2.1: Organizational structures of food innovation centers**

Center	Organizational Structure		
	University-based	Non-profit	Government
Mission Mountain Food Enterprise Center, Montana		✓	
Food Processing Development Centre, Alberta			✓
University of Idaho Food Technology Center	✓		
Joseph J. Warthesen Food Processing Center, Minnesota	✓		
The Food Processing Center, Nebraska	✓		
Rutgers Food Innovation Center, New Jersey	✓		
Taos Food Center, New Mexico		✓	
Northeast Center for Food Entrepreneurship, New York	✓		
The Food Innovation Center, Oregon	✓		
Prince Edward Island Food Technology Centre			✓
Vermont Food Venture Center		✓	

**University-based centers**

One of the benefits of being a university-based food innovation center is the ability to draw upon the numerous resources found in university systems. These centers may gain valuable knowledge from various academic departments and their faculty, use university facilities such as libraries and classrooms, and, in some cases, receive certain

types of funding. University-based food innovation centers may be staffed by university academics, industry specialists, or some combination of the two. Some centers are tied more closely to a university than others. While centers like the ones in Idaho, New Jersey, Nebraska, and New York are affiliated with universities, they operate on their own in terms of organization, management, and decision-making. This being said, while these centers may make their own decisions, many of them do receive salary funding from their respective universities.

Other centers, such as those in Oregon and Minnesota, are deeply intertwined with their respective universities. The Minnesota facility is a program of the University of Minnesota's Department of Food Science and Nutrition. As such, the program is able to coordinate all non-processing services through individual faculty on a consulting basis. The Oregon center is an agricultural experiment station within Oregon State University (OSU) located in downtown Portland that partners with the Oregon Department of Agriculture (ODA). OSU provides the center's clients with product development and processing assistance, while ODA provides clients with business development and marketing information.

Like the Oregon center, the Rutgers and New York centers are associated with agricultural experiment stations. The New York center is not an agricultural experiment station itself but is supported by the New York State Agricultural Experiment Station (which is a research and outreach arm of the agricultural college). The New Jersey Agricultural Experiment Station that houses the Rutgers center was established in a federal empowerment zone, a federally recognized blighted area in the agricultural sector of southern New Jersey. The center is located in the second poorest city out of 566 New

Jersey municipalities. Some 100 miles away from Rutgers, the center has never been a base for the university. Locating the Rutgers Food Innovation Center in this area helps spread the wealth of the university and gives this depressed area a much needed economic development boost.

Still other centers, such as the Vermont Food Venture Center, are not officially affiliated with any university, but may receive some assistance in the form of technical information and food science assistance. In the case of Vermont, the center has had both formal and informal relationships with the University of Vermont and Cornell University over the years. See Figure 2.2<sup>1</sup> for a summary of the university-based structure.

**Figure 2.2: University-based Structure**

- Center receives some form of support from the university: monetary, infrastructure, academic, etc.
- May be staffed by academic faculty, industry specialists, or some combination of the two
- Can be part of an agricultural experiment station, an academic department, or a partnership between the university and a governmental agency.
- Examples include University of Idaho Food Technology Center, Joseph J. Warthesen Food Processing Center at the University of Minnesota, The Food Processing Center at the University of Nebraska-Lincoln, Rutgers Food Innovation Center, Northeast Center for Food Entrepreneurship at Cornell University, and The Food Innovation Center at Oregon State University.

Governmental centers

Other food innovation centers are part of the government. In the case of this research, the two government food innovation centers happen to be part of provincial governments in Canada, although there may be other food innovation centers located in

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<sup>1</sup> Figures 2.2, 2.3, and 2.4 identify a few characteristics common to particular structures.



governmental agencies in the U.S. Government food innovation centers tend to be the result of research conducted by the government to analyze the best ways to increase value-added agriculture ventures. As discussed below, these centers are funded partially by the government and partially through service fees.

The Alberta government started the Food Processing Development Centre in 1984 in direct response to the recognized need to add value to the province's commodity products. The province has always cultivated economic activity and did not want to be reliant on low-cost commodity production. Completely owned and operated by the government, the Alberta center does not have formal relationships with universities or other institutions. It does, however, work collaboratively with them on projects that are strategic in nature and have a broad industry impact.

Prince Edward Island Food Technology Centre began in 1987, likewise as an initiative of the provincial government, which decided that it wanted to support industry on the island by enabling value-added ventures and increasing technical assistance to the food industry. The center is disproportionately large in comparison with the provincial population because the province has robust agricultural and food processing sectors. This is the only full service center of its kind in Atlantic Canada. Other organizations provide product development and/or analytical services, but they are quite small. Still others provide targeted assistance in seafood. The Food Technology Centre used to operate under a Board of Directors, but now Jim Smith, the Executive Director, reports directly to the CEO of Prince Edward Island Business Development, who reports in turn to the Minister of Innovation and Advanced Learning. See Figure 2.3 for a summary of the government structure.

### **Figure 2.3: Government Structure**

- Centers often begin as a result of legislative research or some other governmental initiative
- Often receive funding from several sources, usually a combination of government dollars and revenue earned from service fees
- Usually staffed by industry specialists, with occasional assistance from university academics or experts from other related organizations
- Examples include The Food Processing Development Centre in Alberta, and the Prince Edward Island Food Technology Centre.

#### **Non-profit centers**

Still other centers operate as stand-alone non-profit organizations. These tend to be one project of a host organization that promotes economic development in a particular region. Vermont Food Venture Center, a 501(c)(3), is a project of the Economic Development Council of Northern Vermont (EDCNV), a 501(c)(4). In the mid-1990s, the Vermont specialty food sector was just starting to take off. EDCNV's Executive Director went to a food entrepreneur workshop in Sandpoint, Idaho, and decided that Vermont would benefit from such an enterprise. As mentioned above, the Vermont center has also had formal and informal relationships with the University of Vermont and Cornell University over the years.

Another non-profit food innovation center, Taos Food Center, started in 1996 when Pati Martinson and Terrie Bad Hand, economic development specialists, went to work with the Taos Pueblo. When they arrived the Molycorp Mine, one of the largest employers in the area, was closing. As a result, there were three generations of miners who were displaced. Needless to say, the community was in economic distress. Martinson and Bad Hand conducted a survey of local residents to identify viable

economic opportunities for the area. One of those opportunities was the arts; the other was food. Both of these opportunities were addressed when Martinson and Bad Hand started the Taos County Economic Development Center (TCEDC). TCEDC is a private non-profit business park. Taos Food Center operates under a familial/kinship model that emphasizes partnership and community rather than competition. Elena Arguello, Food Center Manager, says,

As a familial or kinship model, everyone is kind of brought into the family so that these clients are of the understanding that we are a non-profit. They understand that it's a community kitchen. . . . They're not paying a lot of money for the services that they are receiving. . . . The clients that we're working with are the economically disenfranchised, so having the center means that we get to level the playing field.

While the Taos Food Center works through a familial model, Mission Mountain Food Enterprise Center has a particular emphasis on supporting the local Montana food system. The center was started in 1998 after participating in the Alternative Energy Resources Organization's (AERO) Montana Food System Initiative, which led a group of community members through an assessment of the local food system and identified key strategies that needed to be developed in order to build and enhance a local food system. A food-processing center was identified as a key strategic step in developing the local food system. The center is a program of the Lake County Community Development Corporation (LCCDC), which is a non-profit, 501(c)(3) organization. See Figure 2.4 for a summary of the non-profit structure.

### **Figure 2.4: Non-profit Structure**

- Usually come about through some form of local research on food system needs
- Centers are often a program of a parent organization, such as an Economic Development Corporation
- Staffed by economic development experts with assistance from university academics or experts from other related organizations; industry experts occasionally included
- Examples include Mission Mountain Food Enterprise Center in Montana, Taos Food Center in New Mexico, and Vermont Food Venture Center.

### Services Provided

The services provided by food innovation centers are many and varied. The following section will lay out these services under the following categories: interim production and co-packing; community kitchens and kitchen incubators; product development and technical assistance; business development and incubation; laboratory; analytical; education; food science; and food safety training and analysis. There will also be a final paragraph discussing the method by which these services are provided.

As a reminder, for the purposes of this research the term food innovation center refers to any program that offers not only technical assistance for marketing, business development, and regulation compliance, but also facilities for food processing and testing. By this definition, all eleven of the centers researched have some sort of food processing facility. Many of the centers call this facility a pilot plant, or a facility in which clients can refine the recipe and process of making their food product on a smaller scale before producing it on a commercial scale. Table 2.2 is a breakdown of the services offered by the eleven food innovation centers.

**Table 2.2: Services offered by food innovation centers**

Center	Service Offered								
	processing	product development/technical assistance	laboratory	education	business assistance & incubation	food science	analytical services	food safety	co-packing/interim production
Mission Mountain Food Enterprise Center, Montana	✓	✓	✓	✓	✓			✓	✓
Food Processing Development Centre, Alberta	✓	✓	✓			✓		✓	✓
University of Idaho Food Technology Center	✓	✓	✓	✓	✓	✓	✓		
Joseph J. Warthesen Food Processing Center, Minnesota	✓	✓	✓	✓		✓	✓		
The Food Processing Center, Nebraska	✓	✓	✓	✓		✓			
Rutgers Food Innovation Center, New Jersey	✓	✓	✓	✓	✓	✓	✓	✓	
Taos Food Center, New Mexico	✓	✓	✓	✓	✓				✓
Northeast Center for Food Entrepreneurship New York	✓	✓	✓	✓	✓	✓	✓	✓	
The Food Innovation Center, Oregon	✓	✓	✓	✓	✓		✓	✓	
Prince Edward Island Food Technology Centre	✓	✓	✓	✓	✓		✓	✓	✓
Vermont Food Venture Center	✓	✓			✓	✓	✓	✓	✓

**Interim production and co-packing**

Some centers, however, do allow their clients to process their product on a commercial scale. Food innovation centers offer this service in two slightly different ways: interim production and co-packing. Interim production, offered by the Alberta and Prince Edward Island centers, means that a company can run their business out of the center for a period of time. The company brings in their own labor and leases the center’s equipment and facility. Co-packing, while similar, has one key difference. Instead of the client bringing in their own labor and doing the processing themselves, the center processes the food product for the client. Aside from food innovation centers,

there are many professional co-packers around the US and in Canada. Apparently, these professional co-packers often charge higher prices or require larger quantities of product that smaller food businesses cannot meet. For instance, Ken Gossen, Director of the Alberta center, says, “Co-packers charge for the full cost of operating a federally registered plant; we charge a third of the cost.” Additionally, many areas, like Montana, lack co-packers and have few, if any, options for getting their food product processed.

The Vermont and Montana centers both offer co-packing services, while the New Mexico center helps its clients connect with area processing facilities who are willing to be co-packers. Elena Arguello, Taos Food Center’s Manager, says this is one of the centers most important successes. The center contacted companies that were already producing product and asked them if they were using their equipment all of the time. At first, many of these companies did not want to produce product for their competitors, but the center persuaded them that the products would be different enough that they would not compete. The center showed these companies that it was an opportunity to make money and diversify by making product for someone else. Additionally, Taos Food Center has a cause marketing campaign called “Oh So Good” that every company can participate in. It looks really good for a company to be able to say they are supporting economic development and the “Oh So Good” marketing campaign and label. Taos County Economic Development Center’s kinship model comes into play here too. The center operates under the idea that everyone in the industry is a family member, and family members help each other out. Taos Food Center has seen great success in this approach—funds are limited, and this model means that the entrepreneurs can rely more on their community and on their partners.

Different centers also have their own requirements for clients who want to do interim processing or co-packing. For example, clients who do interim processing at the Alberta center must have an exit strategy, which usually means building their own facility or finding a co-packer. At the Prince Edward Island center, however, there is no such requirement. In the future when there is more demand for the pilot plant facility, the center may need to start requiring clients to have an exit strategy in place. Currently, however, clients are free to use the pilot plant for interim processing for as long as they need.

**Figure 2.5: Interim Production and Co-packing**

- *Interim production:* a company brings in its own labor and leases the center's facility and equipment to produce their food product for commercial sale
- *Co-packing:* a company pays a fee for the center to produce their food product for them
- Some centers may have a time limit for interim production and co-packing, requiring clients to have an exit strategy such as finding another co-packer or building their own processing facility.

Community kitchens and kitchen incubators

Some centers call themselves commercial kitchens, community kitchens, or kitchen incubators rather than pilot plant facilities. Brian Norder, Project Director of the Vermont Food Venture Center, believes that the difference between these terms involves the scale of the operation. The Vermont center considers itself a full kitchen incubator as opposed to a community kitchen. Norder explains that

My distinction between the two is both scope of the processing operation, how much processing equipment is available, and also what's available for technical assistance services. So like a community kitchen would be much smaller and might not have a lot of technical services, while we will work with people from

concept through scale-up, food science, food safety, labeling, packaging selection, and finally into production.

Similarly, Lyons (2000) defines a kitchen incubator as a

form of industry-focused business incubation. . . . Access is provided to a licensed kitchen and to retail facilities to permit clients to test market their wares. The incubator provides other services that are more typical of traditional business incubation programs as well, including access to business equipment and storage, a library, and office and workshop space.

However, Hollyer et al. (2000), maintains that shared-use kitchens, test-kitchen incubators, and community kitchens are the same thing: kitchens developed for shared, community use that are “designed to offer the chance for entrepreneurs to develop culinary and business skills” (3). The authors go on to say that these community kitchens should not be confused with the “kitchens developed to provide meals to the less fortunate among us” (3). Obviously, the differences between these terms are not necessarily widely agreed upon. Regardless of what they call themselves, though, all of the food innovation centers researched for this study possess some sort of processing facility.

#### Product development and technical assistance

By definition, these food innovation centers offer some form of product development or technical assistance. Product development includes assistance with such things as recipe formulation, ingredient sourcing, process development, scale-up, labeling, and packaging. In particular, process development and scale-up are done in the pilot plant with skilled food industry professionals. Process development refers to the development of the ordered steps that must happen for a food product to be processed correctly. These ordered steps include critical control points, which are moments in the processing of the food product where food safety hazards can be eliminated or reduced to



acceptable limits. The Northeast Center for Food Entrepreneurship, among other centers, helps clients with developing what is called a schedule process. The New York Department of Agriculture and Markets requires that products produced in the state for commercial sale be evaluated for formulation and process by a process authority in order to ensure their safety. A farmer or processor submits their recipe or prototype to the center. The center then reviews the proposed formulation and processing, evaluates its safety, makes the necessary measurements, and determines the critical control points.

Scale-up is the process of increasing the amount of product produced for a given recipe. For example, the recipe and production process is very different for five gallons of salsa compared to 50 gallons of salsa. Many food innovation centers help their clients figure out the specifics of altering their recipe and process for these larger amounts.

#### Business development and incubation

Eight of the eleven food innovation centers offer business development assistance in addition to product development assistance. Business development assistance can include business incubation, marketing, business planning, networking, corporate governance support, commercialization, regulation compliance, troubleshooting, and capitalization.

The Rutgers center prides itself on being a very service centric model. Up until this previous summer (2008), the center has served its clients virtually. In 2007, Rutgers Food Innovation Center won the Incubator of the Year award, being the first virtual center to do so. Lou Cooperhouse, Director of the center, had this to say about the importance of service:

We are very service centric, and that's really a key. Many incubators around the country, with all due respect, are kind of landlord driven and space driven. But

what the food industry particularly needs—they need a space—but we were extremely successful at just providing service. Service with a professional staff that could really create a network of resources to really provide a benefit to the industry.

Phase One of the center was solely focused on business development assistance and incubation. Phase Two will incorporate the physical processing services offered by the rest of the centers.

In addition to service, Mission Mountain Food Enterprise Center emphasizes the importance of business incubation. In addition to its product development services, the center has a business incubation center that helps clients with such things as writing a business plan, marketing their product, and capitalization assistance.

### Laboratory

Ten of the eleven food innovation centers also offer their clients laboratory services, which can include chemical, microbiology, pH, and nutritional analysis. Not all of the centers have these services on site; some centers may send samples to a university or outside laboratory for testing. It is preferable, however, for food innovation centers to have laboratory services within their facilities. The food industry is fast paced and competitive; in order to for clients to remain competitive, quick turnaround is a necessity.

### Analytical

Analytical services are just as important as laboratory services. Quite possibly the most important aspect of analytical services is sensory analysis. Sensory analysis is the process of discerning what the consumer thinks of a given product. With food products, sensory analysis can involve focus groups, taste testing, surveys, and many other tools used to discover how the consumer perceives the food product in question. In the case of the Oregon center, there is an actual sensory testing laboratory, which includes a focus

group program and the ability to do off-site testing. Sensory testing projects can take as little as a day, or they can be up to three weeks long, depending on the amount of product being tested.

### Education

The very nature of food innovation centers involves education—about product development, processing equipment, business development, and more. In addition to this fundamental education, nine of the eleven food innovation centers offer specific education programs as a service to their clients. Both the Idaho and New Mexico centers require their clients to take a food class before working starting development of their product at the respective centers. This class basically teaches the prospective client the basics of starting a food business. As Elena Arguello says, “The first thing we need to do is make sure that [the clients] know what they’re getting into because a foodservice is a difficult one.” The Oregon center offers workshops on various topics, including product development and food law using center personnel and colleagues from the main Oregon State University campus and other universities.

### Food science

Seven of the eleven food innovation centers offer the services of at least one food scientist. Food scientists are often involved in many aspects of a product’s development, including recipe formulation and scale-up. Sometimes a center will have several food scientists who focus on different food categories. For instance, the Alberta center has meat, cereal, dairy, and bakery scientists. Generally, university-based food innovation centers are the ones with food scientists on hand. Their relationship with the university allows them to draw on the existing expertise of the respective university’s food science

program. As mentioned above, the Minnesota facility is actually part of the University of Minnesota's Department of Food Science and Nutrition. Since 1970, the Department has united previously separate meat, dairy, grain, extrusion, and beverage processing endeavors, and now serves many clients outside of the Department.

#### Food safety training and analysis

Another very important service offered by many of the centers is food safety training and analysis. In most areas, food products must meet certain standards in order to be sold commercially. For example, since the Alberta center is federally registered and produces products for sale, it has to have HACCP (Hazard Analysis and Critical Control Points) plans and keep all of its records. HACCP is a system that takes into account chemical, biological, and physical hazards in order to prevent food safety dangers. Vermont Food Venture Center is another center that assists its clients with food safety training and certification. The center also conducts product safety reviews and helps design and implement HACCP systems. Jim Smith, Executive Director of the Prince Edward Island center, goes as far as to say that food safety analysis is the most important service offered by the center. Prince Edward Island's abundant seafood processors, in particular, need these services to get their product into US markets.

#### How services are provided

Food innovation centers provide assistance to their clients in a variety of ways. There are both walk-in clients and clients who receive virtual assistance via telephone, mail, email, and fax. Most centers provide some combination of these types of service, though two centers have focused on providing virtual assistance. In its initial phase, Rutgers Food Innovation Center provided assistance on a solely virtual basis. Now that

the center has built an actual facility, it will begin to combine this virtual service with face-to-face technical assistance. The Northeast Center for Food Entrepreneurship receives some walk-in clients, though the center does not concentrate on looking for this type of client. Instead, it focuses on answering peoples' value-added questions through virtual means. Olga Padilla-Zakour, Director of the center, says that because of this strategy, the center's multiplied effect is very large because it helps everyone who is interested in food processing, not just those who want to use a production facility.

### User Groups

The clients of these food innovation centers are just as diverse as the centers themselves. User groups range from individuals to multinational corporations, from beginning enterprises to established companies, and from restaurants to industry organizations to agricultural producers. Some centers tend to focus on a discrete type of client; others serve an assortment of different types of users. Gary Reineccius, Head of University of Minnesota's Department of Food Science and Nutrition, has this to say about the range of clients that use their processing facility:

It's just across the entire board. The largest company in the world comes here and uses some facilities; the second largest comes. And some of the local entrepreneurs who just have a little bit of money will come in and use it as well for product development. So it just covers a tremendous range in products, in companies. It's really surprising to me. The idea that we would have something of value to offer the largest company in the world. . . . but it's true for one reason or another.

Not surprisingly, many food innovation centers serve food entrepreneurs. These entrepreneurs may be just starting their businesses or they may already be well established; regardless, they all share a common desire to create a food business by

producing a unique and marketable food product. Food innovation centers help them with all of the steps of this process. In the case of the Vermont center, the intake process is tailored specifically to these entrepreneurs' unique needs. The center staff tries to hone in on what the client has for available resources in order to tailor a rollout strategy appropriate for that amount of funding. The center does not tell entrepreneurs whether they should embark on a value-added food venture or not. Instead, the center gives its clients the tools and information they need in order to make that decision for themselves.

Agricultural producers are another common type of food innovation center client. This type of user is often seeking to retain more value from their crops by adding value to them. Necessarily, the producers who seek out the help of these centers also have an entrepreneurial spirit. Many food innovation center professionals mentioned the lack of agricultural producers using their facility when compared to the number of other food entrepreneurs. Most of them thought that this is probably because producers are often strapped for time and money. Additionally, many agricultural producers simply have no desire to get into food processing. Jim Toomey, Director of the Idaho center, recalled a conversation he had with just such a producer. "One farmer said to me, 'Value-added's the last stop before the auction block'. Generally speaking, people that have been in production agriculture aren't dreaming about value-added. They want to ride on a tractor. Some very knowledgeable people pointed that out to us when we got started." Similarly, the Vermont center has some agricultural producers using their facilities, but this set of clientele has been a challenge for the center to work with because of most producers' time constraints. To address this limitation, the center has had some success in partnering growers with school groups to make specialty food items. Brian Norder,

Project Director, says, “We’ve had good luck in partnering local school groups with growers to come in and do such things as turning local raspberries in to raspberry puree or school parfaits.”

The Vermont center also encourages agricultural producers to do interim processing (a different process than what was described above); that is, the practice of minimally processing a crop during the growing season (freezing, drying, etc.) and then doing further processing in the winter when the producer has more time. Some centers are also trying to remedy this situation by connecting agricultural producers who have a crop needing processing with food entrepreneurs who want to do processing but have no crop. For instance, the Idaho center has two clients who use asparagus from local growers to make pickled asparagus. The Rutgers center places a heavy emphasis on creating these linkages. Lou Cooperhouse, Director of the center, says,

We also create a network between all these small and large companies, so there’s really a big value there. We’re linking clients within the same subset and across subsets as well. So we can maybe have a farmer that can now sell directly to a farmer’s market or can sell to a further processor or an established company. Or retailers that are looking to find local suppliers. So we’re working upwards and downwards and left and right to really create the marriages that keep the community thriving.

These types of connections are key to increasing the amount of value-added food processing in a given area.

In addition to food entrepreneurs and agricultural producers, other types of food innovation center clients include non-profit organizations (such as Taos Food Center’s client, Food Not Bombs), restaurants bottling their house specialty, and cooperatives. For example, Mission Mountain Food Enterprise Center focuses on assisting cooperatives that wish to do value-added food processing. The center is housed in the same building

as a Businesses and Cooperative Development Center, another project of Lake County Community Development Corporation. This association benefits cooperatives by not only giving them the food processing assistance they need but also helping them improve their cooperative venture.

Different types of clients use different services. The trend seems to be that the smaller and newer a business, the more initial services are used. Logically, product development must happen before that product can be analyzed for its chemical properties and consumer effects; hence, larger, more established companies have already been through the product development stage. They need food innovation centers for their analytical and laboratory services. At the Oregon center, for example, start-up and mid-sized companies use the product development services, while larger companies use the sensory analysis services. There are similar situations occurring at both the Prince Edward Island and Montana centers. Prince Edward Island Food Technology Centre has discovered that troubleshooting, especially with regard to product development, is especially important for small to medium sized companies that generally do not employ technical people. Multinational corporations who frequent the center primarily use their laboratory services.

This trend is continued at Mission Mountain Food Enterprise Center as well, which makes sense as most of the center's clients are small ma and pa businesses with sole proprietorship. Out of all the services that Mission Mountain offers, the initial product and business development services get the most use. People typically have a recipe that they like, but then they don't know where to go from there. Accordingly, the center acts as a resource depot. A client will call up and say, "I have a food product I



want to try to get to market but I don't know where to start.” Mission Mountain responds to this need and gives them the resources they need to succeed.

The variety of clients using food innovation centers produces an array of food products with an impressive diversity. Accordingly, this diversity carries over into the types of markets to which food innovation center clients sell.

### Markets Served

Unless they focus specifically on local markets, most food innovation centers do not encourage their clients to sell to particular types of markets. Jim Toomey, of the University of Idaho Food Technology Center, believes that with the rising cost of fuel and concerns with food safety there is more receptivity to locally produced products that are fresher and keep more money circulating in the local economy. The center tries to customize their services to what the local situation is and encourages its clients to sell to local retail, wholesale, and direct markets. “More than 90 percent sell in the local markets and that is what we encourage,” Toomey said. He added, “We have a few who have regional accounts and one who made it nationally with an organic line and now uses a California co-packer for production.”

**Table 2.3: Markets served by food innovation center clients**

Center	Markets served			
	local	regional	national	international
Mission Mountain Food Enterprise Center, Montana	✓	✓		
Food Processing Development Centre, Alberta	✓	✓		✓
University of Idaho Food Technology Center	✓	✓	✓	
Joseph J. Warthesen Food Processing Center, Minnesota	✓	✓	✓	✓
The Food Processing Center, Nebraska		✓		✓
Rutgers Food Innovation Center, New Jersey	✓	✓	✓	✓
Taos Food Center, New Mexico	✓	✓		✓
Northeast Center for Food Entrepreneurship, New York	✓	✓	✓	
The Food Innovation Center, Oregon	✓	✓		
Prince Edward Island Food Technology Centre				✓
Vermont Food Venture Center	✓		✓	

Most centers’ clientele sell to a similar diversity of markets—everything from local to regional to national markets, with some even exporting to global markets. See Table 2.3 for a breakdown of these markets. Half of these centers sell to local and regional markets almost exclusively. Most of the Nebraska center’s clients, for instance, are focused on Midwest markets, although they are moving into more global markets. In order to go global, the center is working to establish contacts that are interested in export. This is challenging because every country has different requirements. Location is a key factor in deciding which international markets are pursued. The Nebraska center has looked to the markets found in the Americas, while the Oregon center has focused more on Asian markets because they are closer.

Personnel at the Nebraska center do not necessarily pursue global markets, but they must have an open mind and knowledge of these markets in case a client wants to pursue international trade. This is a matter of having trained personnel in place to help the client go global, or to help them find other places that can assist them. Some of these assisting organizations include the US Commercial Service and the state Department of Economic Development. The key here is that personnel of the Nebraska center be in place to point their clients in the right direction.

Food innovation center clientele also sell to a variety of types of markets, regardless of where that market is located. For instance, the Vermont, New York, and Minnesota facilities have clients who do both retail and wholesale. Vermont Food Venture Center encourages its clients to do a combination of direct retail and wholesale; the fortunate clients will be able to grow into a larger distribution. Additionally, the Northeast Center for Food Entrepreneurship has clients who sell their products on the Internet and out of catalogs. The Food Processing Development Centre in Alberta has been very successful with retail markets. Since the center is federally registered, its clients are able to sell products locally to retailers with national distribution, individual small retailers, and everything in between. Ken Gossen, Director of the Alberta center, has noticed that foodservice institutions are a growing market, as are oil and gas sector camps. Clients of the Minnesota facility do some retail business through a sales room that is part of the Department of Food Science and Nutrition. Revenues from the sales room bring in about \$1600 per week. The rest of the clients' products are sold wholesale to other stores on campus.

## Funding

Food innovation center diversity becomes abundantly clear when considering the myriad ways they are funded. Funding is certainly one of the most important—and challenging—aspects of running a viable food innovation center. Some centers struggle with the high costs of equipment, energy, or hiring qualified staff. Others experience a shrinking pool of grant dollars for a growing number of qualified applicants. And still others are discovering that the amount of government dollars the center received twenty years ago is no longer enough to cover operating costs. In spite of these obstacles, food innovation centers continue to provide the value-added assistance needed to support the food processing industry. The one thing all of these centers have in common is that they are funded by a combination of sources.

All of the interviewed food innovation centers charges user fees. These fees may be for technical assistance time spent with a staff person or rental of storage space, facility, or equipment. They may be charged at an hourly or daily rate, or as a per diem charge for the services of different staff. These fees are often on a sliding scale depending on factors such as the amount of energy needed to run the processing equipment, the amount of staff assistance needed, and the length of time the center's facilities are being used.

For instance, the Alberta center charges a daily rate for rental of its pilot plant, which includes the services of a food scientist. This daily rate can range between \$500 and \$1200 depending on how much equipment is being used and the amount of assistance needed by the client. The Idaho center, on the other hand, charges user fees for all services, but not for the staff's time. Fees are on a sliding scale. The kitchen rents for

\$15-25 per hour depending on the factors listed above. Jim Toomey, Director of the center gave this example:

Baking's on the low end of things because generally bakers know what they're doing. They come in and *boom!* they're in and out, usually in a half day. But if we're having to crank up the boiler for the kettles and you're doing pickled asparagus or you're doing salsas or those sorts of things, that's a more expensive production process. Plus, more things can go wrong with that, so our kitchen people have to keep more of an eye on things.

The center breaks even with the fees charged for services, but it is the Research and Development (R & D) portion of the facility that pays for freight, new equipment, etc. R & D involves contracting with private firms like agricultural chemical companies and large food corporations. These contracts can be worth between \$20,000 and \$50,000.

The affordability of these user fees also varies greatly. For most centers, the user fees do not completely cover the cost of those particular services. Or if they do cover the cost of the services, they often do not cover the rest of the operating costs of the center. Most centers must subsidize their user fee revenue with some other form of monetary support.

Taos Food Center is unique in this aspect because of the familial model it operates under. The center does charge rental fees for storage and kitchen time; however, these fees are artificially minimal so that everyone can afford them. These fees are also charged at a flat rate; they are the same for everyone regardless of which equipment is being used or how much assistance is needed by the client. As a matter of fact, 96-98 percent of the services clients receive at the center are gratuitous. The kitchen does not support itself. It is subsidized by its parent organization, Taos County Economic Development Center, which leases six large commercial spaces to local businesses. This lease arrangement has several benefits: it keeps fees at the center exceptionally affordable

while at the same time giving local businesses a place in which to operate. The center receives additional funds from grants, educational training courses, and other fundraising activities.

Vermont Food Venture Center also receives some subsidization from its parent organization, the Economic Development Council of Northern Vermont (EDCNV). The center charges a \$100 membership fee that covers a client's startup process; it also charges an hourly fee for kitchen rental. The balance of the center's costs is covered by grants, consulting projects, and educational training. In years that it does not break even, EDCNV makes up the difference.

The Minnesota facility is also unique in that its user fees completely cover the cost of the service, in addition to paying the bills and faculty salaries. The University of Minnesota, of which the processing center is a part, does not assist with funding. Gary Reineccius, Head of the university's Department of Food Science and Nutrition, believes that it is important to be able to operate independently, especially with regard to funding.

Five of the eleven food innovation centers interviewed receive some form of government funding, in the form of state, federal, or provincial support. For example, the Alberta provincial government funds two thirds of the Food Processing Development Centre's operating costs and the other one third is covered by service fees. On Prince Edward Island, the Food Technology Centre has a total operating budget of \$3.5 million; \$1.5 million of that is in the form of an operating grant from the province, and the balance is revenue from client services. The National Research Council of Canada (NRC) also has a contribution agreement with the center: the NRC provides funding (about \$60,000 per year) to cover basic preliminary innovation work at no cost to the

client. It has been a challenge for the Prince Edward Island center to keep the level of government support where it should be. The operating grant provided by the government has stayed relatively constant, which means that when cost of living and inflation are taken into consideration, the real value of the grant has gone down over the years. The center has had to become more productive and efficient as a result. Executive Director Jim Smith says this is both the center's biggest strength and its biggest challenge.

A related challenge faced by many food innovation centers is the decline of available grant dollars. Jan Tusick, Program and Commercialization Manager at Mission Mountain Food Enterprise Center, says that funding has been difficult for the center, in part because the federal grant programs are cutting back. "It's been challenging—one grant program in particular cut the funding by a third so it made it more competitive, so we're not getting it this year. The state fund has always been off and on. It isn't a consistent stream; it's year to year—you either get it or you don't get it."

University-based food innovation centers also receive funding from a variety of sources. The Nebraska center gets thirty to forty percent of its funding from the state in the form of salaries. The balance of the funding comes from grants, service fees, and equipment rental. Sometimes the center gets donations of equipment or will receive a grant that is specifically earmarked for equipment purchase. The center staff are constantly writing grants to many organizations, including the Manufacturing Extensions Partnership, the US Department of Commerce, the Nebraska Department of Agriculture, and the USDA. The center tries to get most of its funding from service fees, but grants allow them to hire extra temporary personnel.

The Oregon center runs on a mixture of state funding and user fee funding, with some federal dollars in the form of grant money thrown into the mix. User fees support the fixed term faculty at the center; the tenure-track faculty are supported by the state. Currently, Oregon State University must subsidize the center's services because service fees are only paying for approximately 60-70 percent of their costs. Michael Morrissey, Superintendent of the center, is hopeful that within a year or two the center will be unsubsidized.

### Conclusion

Food innovation centers are complex organizations that must juggle many factors in order to thrive. These factors include, but are not limited to, organizational structure, services provided, user groups, markets, and funding. The intricacies inherent in these center characteristics can be both advantages and disadvantages when it comes to running a business. The following chapter will examine these advantages and disadvantages and how they can result in either successes or challenges for their respective centers.



### CHAPTER 3: LESSONS FROM EXISTING FOOD INNOVATION CENTERS

All of the food innovation centers studied for this research have been through the inevitable ups and downs of running an organization. The centers' particular organizational structures, geographic locations, and political and economic landscapes have created unique successes and challenges from which Montana can learn. For example, university-based centers benefit from a university's diverse resources, but these centers may struggle to operate in conjunction with the food industry's market-oriented expectations. Government and non-profit centers, though they are often the result of legislative or economic development research, may struggle to secure sufficient funding. While interviewing the key staff people at these eleven food innovation centers, I asked them about what works well at their respective centers and what does not work so well. They spoke on topics such as mission, funding, staffing, organizational structure, and client-center trust. The following is a synopsis of their responses.

#### Successes

Nine of the eleven interviewees said that having the right staff with the right expertise is key to their success. These staff people must be familiar with the workings of the food industry so that the clients served by the center can be competitive. As Ken Gossen, Director of the Alberta center, says, "If you're not relevant to industry, you're dead in the water." The food industry is fast-paced and ever changing, so food innovation center staff need to be flexible, be able to ensure quick product turnaround,

and stay as current with their knowledge and expertise as possible. The centers that have been able to find this type of staff person feel that it has been vital to their success.

There are several different strategies when it comes to staffing university-based food innovation centers. Some centers emphasized the need to have staff with industry experience, and others centers tend to be staffed with academics. A mix of these types of people seems to be ideal. The Minnesota facility, for example, staffs its processing center with food industry experts, while non-processing services such as analytical testing or product development assistance are overseen by individual university faculty on a consulting basis. Regardless of whether they are industry experts or academics or both, these staff people must be effective at customer service. Gary Reineccius, Head of the Department of Food Science and Nutrition at the University of Minnesota, emphasizes the building of personal relationships between client and staff. He says, “I believe in personal relationships. And I believe through personal relationships you build trust. You offer value, you offer win-win situations—and that’s extremely important to me. . . . We offer very good service at a very good price and I think that’s what makes a difference.”

This trust is made stronger when a center has a reputation for confidentiality. Many of these centers serve clients who rely on keeping their new products secret until they are unveiled in the markets. Recipe formulations and product release dates are both examples of proprietary information. Confidentiality is a particular emphasis of the Alberta center. Ken Gossen, Director of the center, says that:

My staff have to be recognized as credible, as experts in their field, and they have to understand how industry operates, the speed [at which] they operate, and what motivates them. And a big issue is confidentiality. If it gets out that your scientists and your staff are talking about what a company is working on, they just stop coming.

Indeed, when a center has built up a significant amount of trust with its clients, both client and center benefit. Support from various parts of the community is vital to keeping food innovation centers in business. Olga Padilla-Zakour, Director of the New York center, talked about the success of the center's word of mouth advertising. She says that the center is successful in part because it does not have to advertise its services; it receives requests for assistance from all over the state. The New York center is well known in part because it has strong support from the agricultural community. Other centers, including Oregon and New Jersey, emphasized the role strong legislative support plays in their success. The New Jersey center follows a set of practices expressed by the National Business Incubation Association, one of which is the building of community partnerships. Lou Cooperhouse, Director of the center, emphasizes this new kind of statewide partnership:

We have the entire state working together. . . . I would otherwise take it for granted, but the state never worked together before like this. . . . We all know each other, we all work with each other well, we're all friends, and we all are committed. . . . So that's the number one [key to our success], is that kind of strong community, state, and federal support that just goes a long way over and over again.

Cooperhouse goes on to say that this is a network that includes not just the entire university, but also other universities who have expertise in other areas, other incubators, community colleges, and state and federal agencies.

University support is also fundamental to several centers' success, though in a variety of ways. Being part of the Cornell University system allows the Northeast Center for Food Entrepreneurship access to university facilities and all of the benefits that come with them. Some of these benefits are intangible, such as the library and its resources and the expertise of academic faculty from a multitude of disciplines. Olga Padilla-Zakour,

Director of the center, says that: “Sometimes these centers, if they are focused in a university, they’re more successful because of the support that inherently you have in an institution.” Michael Morrissey, Superintendent of the Oregon center, believes that being based in the Oregon State University system enhances the center’s reputation as an unbiased research center. He goes on to say that “A lot of companies like the idea of being able to have a university type connection as well.”

### Challenges

Being a university-based food innovation center can also be challenging for various reasons. One of the main challenges faced by the Nebraska center is striving to be a dynamic program within a university system that is by nature slow with funding and organizationally complex. Rolando Flores, Director of the center, says, “The major challenge is having a very dynamic mechanism in a university, and universities are not known for being dynamic. Universities are very slow responding organizations.” Lou Cooperhouse, Director of Rutgers Food Innovation Center, echoes a similar sentiment. He says, “I think working in a university environment is very challenging too. We’re trying to work at a business speed in an academic environment that works very differently. Everything takes longer and costs more.”

Regardless of *why* funding is difficult, the fact remains that it is difficult just the same. One reason may be that the particular center is university-based, although both government and non-profit centers also reflected on the struggle of finding enough funding. Both the Alberta and Prince Edward Island center directors talked about the lack of sufficient funding. The Prince Edward Island center struggles to keep the level of

government support where it needs to be. The operating grant provided by the government has stayed relatively constant, which means that when cost of living and inflation are taken into account the real value of the grant has gone down over the years. Jim Smith, Executive Director of the center, says that because of this “we’ve had to become more and more productive and efficient in terms of how we operate. . . . So that’s probably our biggest strength and our biggest challenge at the same time.” For the Alberta center, equipment purchases are the biggest issue. Equipment is very expensive to purchase and maintain, but it is also necessary in order to remain on the cutting edge of technology.

In addition to Alberta, both the New Mexico and Minnesota facilities talked about equipment and the challenges it entails. Because the Minnesota facility is associated with the university, equipment must serve multiple purposes. For example, the department cannot afford to buy an extruder if its sole purpose is to be used as a teaching tool. However, if the extruder can be used as a teaching tool *and* for processing by outside clients, then its purchase becomes possible.

Some other funding challenges include the high cost and necessity of expansion and the difficulty of adding staff positions and then paying those staff what they both deserve and expect. Three of the eleven centers said that the high cost of expansion (of both programs and facilities) was a struggle. Michael Morrissey, Superintendent of the Oregon center, links this struggle to declining support from the state to the university. He says, “State support to universities has gone down, and Oregon is no exception. Forty percent of the budget of the university twenty years ago was coming from the state; now it’s around fifteen to twenty percent.”

In addition to the high cost of expansion, six centers struggle with staffing. As mentioned above, the ideal food innovation center staff person is a bit of an enigma. He or she should have not only knowledge of industry workings, but also of food safety and economics. The Montana center has trouble finding skilled workers who can address the food science aspect of food product development. Currently, every food product that needs the attention of a food scientist is sent out of state, where it has a lower priority compared to that state's local products. This issue translates into slower product turnaround for the Montana center. Additionally, Jan Tusick, Program and Commercialization Manager of the center, says,

Management of the Mission Mountain Food Enterprise Center has been really challenging because it does take a multi-faceted person with numerous skill bases, and some of them are pretty high skill bases in the area of management. And yet, at the same time you need to be able to fix a piece of equipment. So it's been really difficult to find that type of worker in Montana because we don't have processing centers that we can pull from. . . . I think if you look at some other states where there is a lot of processing infrastructure and businesses, you would find that there is more of an employment crew to pull from. We've been really challenged by that.

Prince Edward Island can find workers, but it struggles to pay them adequately. Because the government owns the center, all salaries are tied to the government pay scale.

Simultaneously, the center must operate like a private sector company, meaning that staff is often held to a very high standard of excellence. This combination of factors translates into little flexibility to offer people salaries that are more in keeping with their experience and education.

Three of the centers discussed the difficulties of keeping the big picture in mind. When trying to keep an organization afloat in the midst of so many challenges, it can be easy to lose sight of that organization's mission. Elena Arguello, Manager of the Taos

Food Center, says that it would be easy to simply charge more for the center's services, "but that's not really what we're about." Brian Norder, Project Director of the Vermont Food Venture Center, says much the same thing. One of the challenges the center faces is "paying the bills and staying focused on fulfilling our mission, not *just* paying the bills." Related to this problem of staying economically viable while focusing on mission, Michael Morrissey of the Oregon center talked about the difficulty of responding to changing agricultural environments:

Agriculture and food systems are kind of undergoing a change. Before it was . . . almost like a linear value chain, but now it's more of a network with many different twists and turns. You can't be everything to all peoples, so you're picking and choosing how you can have the best impact, which is a bit of a challenge.

From fulfilling a center's mission to keeping it funded, food innovation centers face many challenges. However, they have also made a number of accomplishments. All of these successes and challenges have given these food innovation centers rich foundations of knowledge from which to draw—and from which others can learn. The key staff people at these eleven centers graciously shared advice they have for Montana to consider as food system advocates explore ways to rebuild the food-processing sector here.

#### Advice for Montana

The decision of whether to start a food innovation center must be considered carefully. Many factors go into figuring out the details of *what* will be built, *who* will build it, and *when*, *where*, and *how* it will be built. And these factors concern only the

building. What to do once a center exists and how to keep it operating effectively are other issues entirely.

### Generating support

A logical first step is to think of how the prospective center is going to be portrayed to potential supporters. These supporters will most likely need to include legislators, industry, possible funders, and other various organizations that cross sectors and party lines. Michael Morrissey of the Oregon center says it is important to: “Get some key legislator folks who really could champion your cause. I imagine that would be a key element to your ultimate success.” Directors of both the Vermont and New Jersey centers maintain that food innovation centers should be portrayed in terms of their return on investment as economic development activities in order to attain funding.

Cooperhouse believes that a feasibility study should be conducted to quantify the magnitude of the opportunity. The study should look at the number of jobs that would be created, the return on investment, and what other centers around the country are doing. He says that in terms of this return on investment, “the state should really provide the funding because you’re just really bringing resources and aggregating them to create jobs and to make the state a center of excellence in this industry.”

### What to do once there is support for a center

Once there is support for a food innovation center, it is necessary to figure out the details of what form the center will take. Factors to take into consideration include the center model, location, staff, equipment, budget, and services. Three of the eleven centers interviewed specifically mentioned looking at what other centers are doing. The present research is a beginning; however, Jim Smith of the Prince Edward Island center



believes there is no substitute for touring different centers around the country and internationally in order to get a good grasp on the different operating models. Michael Morrissey of the Oregon center suggested having a two day workshop in Montana to which 10-12 key people from food innovation centers around the country are invited. These people would get together to talk about what does and does not work at their centers in order to help Montana figure out which direction it should go.

Center models: As discussed in Chapter Two, food innovation centers generally fit into three types of models: university-based, government, and non-profit. The decision of whether or not to be part of the university system is an important one that depends largely on the unique nature of each university. Rolando Flores, Director of the Nebraska center, says that some “universities are more cumbersome [than others]. . . . If [the center] would be something totally new, it might be better if it is . . . a little more independent of the university.”

The availability of expertise in food science should be considered as well. One of the things that makes food innovation centers more efficient is having food science capabilities on-site. For the government and non-profit centers this means having food scientists on staff. University-based centers, however, either partner with or are located within their respective university’s food science department. Michael Morrissey of the Oregon center says that while not absolutely necessary, having a food science program makes things much easier. He maintains, “It works a lot easier with a food science program so you can have expertise with your colleagues, whether it’s running workshops or just even maybe doing some quick problem solving as well as research.” Gary Reineccius of the Minnesota facility suggests that a partnership could work well. Given

modern communication capabilities, Montana may be able to partner with a food science program in a neighboring state in order to provide the necessary services to food innovation center clients. Jim Toomey, Director of the Idaho center, is familiar with the neighboring state of Montana and its accompanying issues. He believes we should see if Montana State University would be interested in starting a food innovation center.

As far as government centers go, Jim Smith of the Prince Edward Island center believes that their model works quite well. He says that Canada has been developing a network of thirteen food technology centers throughout the country over the past few years. This network, called Food Tech Canada, has not been publicly announced as of yet. The centers involved in this network range in size and capacity. From what Jim has seen through his involvement with the development of this network, “The centers which are less controlled by the government are the ones that have been more successful. The ones that are allowed a little bit of latitude and don’t have political interference, those are the ones that seem to do better.”

Lou Cooperhouse, Director of the New Jersey center, has some interesting ideas for possible food innovation center models. The general principle of the hub and spoke model is to have the main expertise at one location with satellites scattered throughout the state. This model may work well for Montana because of the state’s large geographic area and sparse population. When utilizing this model, it is important to locate the satellites in areas where the raw materials are grown or produced. For example, the beef satellite center would be in areas of the state where beef production is concentrated; similarly, fruit and vegetable processing could be concentrated in the western part of the state.

The other model Cooperhouse suggested, the phase model, is similar to how the New Jersey center operates. Phase one involves a mostly virtual center that disseminates information and answers questions regarding value-added food processing. Phase two is the implementation of physical processing facilities in which clients can gain hands-on experience processing their product. This model allows the center to start small and work toward a larger goal, a piece of advice that was common among the staff people of these centers.

In fact, three of the eleven centers talked about the issues of scale and scope. Ken Gossen, Director of the Alberta center, advises starting small and allowing room for expansion. He says, “It does take a while to get [a center] up and running, get your program grounded, and get people in.” Olga Padilla-Zakour of the New York center adds a funding element to that sentiment:

Some of these centers start with lots of grants and lots of help from the state and from federal money, but then they expect them to be self-sufficient. So if you create a center that is too big, you will never be self-sufficient. The overhead will be too much. In my opinion, I think it is better to grow than to start so big.

As mentioned above, Cooperhouse speaks of starting small and working toward a larger goal; he also believes it is important to think big.

Don’t think of this as a building staffed by two people and look for a small amount of money. Look for a program with 10-20 people with a tremendous amount of capability. . . . Think big. Start off with something small to prove the concept and keep working towards that big goal, at which point you’ll see your greatest successes happen.

The importance of knowledgeable staff: Six of the eleven centers emphasized the importance of having skilled staff. Like Cooperhouse, Michael Morrissey of the Oregon center believes that the number of people working at the center is an important factor. He says, “It seems like a lot of food innovation centers or these types of things try to get by

on the cheap in terms of personnel. That kind of just sets you up for failure. If you're going to do it, you really need to do it right. You need to have a critical mass in there of, say, a minimum of ten folks to cover the various aspects of what a food innovation center should be." He goes on to lay out the vital traits of the director of a food innovation center:

Any center really needs to have a director that understands several aspects. You could have a great researcher or a great industry type guy but in that case you have to understand university politics, state politics, work well with industry, and be able to carry on an applied research program. And there are people out there like that. I think to be successful in this day and age you need to be a little bit of an opportunist and understand a little bit how the game is played.

Ken Gossen of the Alberta center says that the importance of human resources cannot be stressed enough if the center is going to be respected and utilized by the food industry.

Brian Norder, Project Director of the Vermont center, has a useful metaphor that illustrates the importance of having staff with the right expertise. He maintains that there are two types of services at a food innovation center—hardware and software. Hardware is the facility and its equipment; software is technical assistance. He says, "Too often hardware becomes the focus, when software should really be the emphasis of these centers."

Similarly, Jim Toomey of the Idaho center believes that expertise should be emphasized over equipment while being careful not to "reinvent the wheel." He thinks Montana should look at the extension network across the state and see what is already in place:

Take a look through that whole extension network all across the state and see what things people are working on. Rather than building some big palace in Helena or Missoula or Great Falls . . . where all the problems are going to be solved, try to see what sort of projects really look like they could go somewhere.

Jan Tusick of Mission Mountain Food Enterprise Center also feels that extension should play a larger role in value-added food processing, specifically with regard to educating agricultural producers about which crops have the most potential as value-added products.

I think we need some real outreach to producers. . . . I think if we saw more work from extension in particular and working with producers on how to produce crop that has the potential of being value-added, I think would be huge. It's a big piece of work right now. That's where producers go for assistance—they go to the extension office. It would be a real leverage because [extension has] the relationships with their local producers, and I think it would be something really worthwhile to look into.

Facility factors: For those food innovation center staff that had advice on facility considerations, location was an important factor. Jim Toomey of the Idaho center spoke of Central Place Theory, which he explained thus: “economic development naturally proceeds faster in big places than in little places.” Basically, the supposition is that food innovation centers are more effective when located in areas with higher population and better distribution. Olga Padilla-Zakour, Director of the New York center, added to this sentiment when she talked about the importance of having enough of a population base nearby to use a center. She said,

Sometimes people get so excited about these projects, they go ahead and put the facility [in] and it turns out you don't have enough people around to use it. People don't like to drive more than half an hour to an hour, tops, to use the facility. It might be a lot of excitement, everybody thinks it's a great idea, but you have to have the accumulation of people around. Many of the most successful centers are located near metropolitan areas, indeed.

Ken Gossen, Director of the Alberta center, cautions that centers should be located where labor is readily accessible:

Put it into a location where you have access to labor. Don't put it as part of your rural development strategy and stick it in some Small Town, Montana, where industry isn't going to go to. You have to put it close to your industry because

product development is a timely function and you have to make it convenient. You have to put it as close as possible to the largest part of your food processing industry.

A possible solution to the location issue is the implementation of the hub and spoke model described above in the *Center models* section. This model helps address the important issues of geography, population base, and access to industry and distribution routes.

In addition to location, design of the facility is also paramount. Padilla-Zakour went on to say that it is tempting, but dangerous, to over-design a facility. She cautioned that it is very difficult to have meat, fruits and vegetables, and dairy in the same facility because regulations are different for these groups of food. Instead, “You try to [design a facility] in such a way that it is always utilized. If you over-design a facility, you are not going to have the facility utilized all the time. You are better off having different facilities [for these different types of food].” Gossen also emphasized the design of a food innovation center building. He believes it is important to survey industry to find out what their needs are and to design with good manufacturing practices and HACCP (Hazard Analysis and Critical Control Points) in place. He advises talking to as many centers as possible before and during the design process: “There are a lot of lessons learned along the way in terms of how you design a multi-use, multi-tenant facility so that you eliminate as many bottlenecks as possible.”

#### Things to take into account in order to remain in operation

Once the proposed food innovation center has the necessary support, a model has been decided upon, staff has been hired, and the facility has been built, there are several other considerations if the center is to have a chance at thriving. Most of these factors

simply make good business sense, though it is always helpful to be reminded of them. Jim Toomey of the Idaho center believes it is important to utilize Montana's existing crops in addition to researching new crops that are conducive to value-added processes. Additionally, Gary Reineccius of the Minnesota facility advises assessing industry trends, one example of which is the current beverage craze. Reineccius goes on to say: "First you know your market, and second you know your competition." He says a center should ask itself, "Where is our market, and is it unique?" According to Rolando Flores, Director of the Nebraska center, this uniqueness is vital to a food innovation center's wellbeing: "You need to develop a certain uniqueness. Right now food innovation centers are not unique. There are many of those. One of the advantages Nebraska had is that we were one of the first ones."

Overall, these food innovation center staff advise those who are planning and/or running a food innovation center to be alert to possible obstacles, cautious when it comes to funding issues, flexible in responding to industry needs, and stubborn in the face of setbacks.

### Conclusion

Undoubtedly, these eleven food innovation centers have faced their share of challenges. They have also enjoyed many successes. Successes and challenges both have taught these centers valuable lessons—lessons they are freely sharing with Montana. The next section draws on lessons learned from these eleven centers to develop recommendations for pursuing these ideas in Montana. These recommendations will

address the possibility of both improving and expanding food innovation centers within the state and their role in redeveloping a Montana food processing industry.



CONCLUSION:  
RECOMMENDATIONS FOR IMPROVING AND EXPANDING  
FOOD INNOVATION CENTERS IN MONTANA

Historically, Montana produced a diverse array of crops that helped the state be relatively food self-reliant. Over a relatively short amount of time, this self-reliance has given way to increased food imports and exports of bulk raw commodity crops. Today, very little of what Montanans eat is actually grown and processed in the state. On the other hand, consumers' demand for Montana-grown and –processed foods has been on the rise, and the food and agricultural sector in Montana has an opportunity to meet this demand and benefit from it. Right now, Montana's agricultural growers and producers are struggling to survive in a commodity market that continuously shrinks their share of the consumer dollar. Montana's consumers are left with little choice as to the food they eat and little power to support their agricultural neighbors. And Montana's food entrepreneurs are forced to try to compete with giant oligopolistic corporations for even a small share of the consumer market.

Though disheartening, these characteristics of Montana's food system are not foregone conclusions. Montana's food history can be an emblem of hope—if the state was relatively food-reliant in the past, we could move that direction in the future. Food innovation centers may be one small step in this direction. For purposes of this research, all of the centers share this definition: any program that offers facilities for food processing and testing, and often includes technical assistance for marketing, business development, and regulation compliance. This basic definition is what ties these centers

to each other in the face of all of their diverse characteristics. As seen in Chapter Two, food innovation centers are organized differently, have different sources of funding, serve different types of clients and markets, and even focus on different goals in their mission statements. They are all the same, though, in that they strive to increase knowledge of value-added food processing and the number of quality value-added food products on the market. Of course, the center studied here experience these successes and challenges concerning such matters as funding, staffing, organizational structure, industry relationships, and more. Accordingly, the staff people of these centers have valuable experiential knowledge and advice for Montana (see Chapter Three). They had advice on how to generate support for a food innovation center, what to do once the center has support, and factors to take into account in order for the center to remain in business.

These successes, challenges, and pieces of advice are as diverse as their respective centers and the staff who manage them. This diversity is what makes this research necessary. The intricacies of the interviewees' responses have been taken into consideration and synthesized with the state of Montana's unique characteristics in order to tailor the information to the state. This research is also supplemented by stakeholder interviews conducted for Senate Joint Resolution 13 (see Appendix C). Some ideas for moving toward the goal of redeveloping a Montana food processing industry are suggested below. These recommendations are offered in the hope of contributing to the current dialog surrounding food processing development and the long-term goal of an economically secure and agriculturally sustainable food system in Montana.

Food innovation centers may help achieve this goal by filling some of the gaps in Montana's food system. In their most basic sense, these centers provide food-processing

infrastructure that has become less available in Montana over the past fifty years. In addition, food innovation centers are rich resources for knowledge on a variety of topics—regulation compliance, marketing, business development, food science, and much more. This knowledge, together with the processing infrastructure, helps food entrepreneurs develop and improve their food businesses. An increase in Montana food businesses translates into a wealth of benefits for the entire state, including more agricultural money remaining within our borders and meeting more of the demand for local food.

While this research is a preliminary step toward achieving these benefits, it has several limitations. One of the shortcomings is that it only takes into account Montana's uniqueness and the characteristics of other states on a cursory level. The focus of this paper was to observe and analyze what is being done with food innovation centers in other states and provinces. There is a range of food innovation center options out there, everything from centers that cater to the largest food companies in the world (like the Minnesota center) to centers that provide mostly gratuitous services (like the New Mexico center) to centers that are mostly virtual (like the New York center). This range of characteristics, though examined in this research, have not been viewed in their unique political, geographic, and demographic contexts.

We need to obtain a greater level of detail about food innovation centers, particularly those centers whose model is of interest to Montana. Further research should be conducted on the types of food innovation center programs being implemented in other states, with particular emphasis on the budgets for these centers.

**Recommendation 1: Convene key stakeholders for the purpose of clearly defining Montana’s food innovation center goals, and gather additional information on other states and Montana.** While this study gives a broad sense of these centers, in order to move forward it is important to get greater detail from food innovation centers whose models best fit goals set by Montanans.

The food innovation centers researched for this paper vary greatly in goals and operation. For instance, The New Mexico center focuses on helping anyone and everyone who wants to manufacture a food product, no matter his or her food processing experience or financial situation. The center is open 24 hours per day, seven days per week, and has very few service fees. The Idaho center emphasizes local products and local markets for its clients. But the center also does research for multinational corporations and agricultural chemical companies. And the Minnesota center has as clients both the first and second largest food companies in the world. These are just a few examples of the diversity of food innovation centers, examples that illustrate the need to learn more.

Some questions that should be addressed include: What exactly is the state hoping to achieve by creating and expanding these centers? Who should benefit? Who should be involved in the planning stages? Who should be involved in managing the center(s)?

Progress toward achieving this recommendation can be accomplished by:

- a.  *Holding a working conference in Montana to which 8-12 key food innovation center staff people from around the country and Canada are invited to interact with a selected group of key stakeholders in Montana. This conference should be*

a discussion of what works and what does not, with the final goal being the generation of steps for Montana to take toward implementing a food innovation center network.

- b. *Carrying out a feasibility study that characterizes how food innovation centers can foster economic development and increase food security in Montana.* The following factors: return on investment, job creation, market outlook, funding opportunities, geographic location of center(s) in relation to targeted clientele and distribution services, and any other factors that help to quantify the magnitude of the opportunity. (See also Recommendation 2).
- c. *Touring centers nationally and internationally* to see how things are done elsewhere. This research and the conference mentioned above are first steps, but there is no substitute for being able to directly observe the many ways a food innovation center can work and the facilities provided.

**Recommendation 2: Learn more about food manufacturing establishments that already exist in the state.** The U.S. Census Bureau defines a food manufacturing establishment as any establishment that “transform[s] livestock and agricultural products into products for intermediate or final consumption” (U.S. Bureau of the Census 2008, *Definition*). As seen in Figure 1.1, the number of food manufacturing establishments in Montana has increased from 114 in 1992 to 166 in 2002 (U.S. Bureau of the Census 1992 and 2003). Why the increase? The U.S. Census Bureau’s industry classification system changed in 1997 (U.S. Bureau of the Census 2008, *Introduction*). Could this be the reason, or is something else occurring? And what do these new establishments look like?

If something has happened to encourage the development of these new food manufacturers, how can we continue in the same positive direction? What more can we do to hasten this increase? These questions and more are begging to be answered. Further research on the topic may help Montana continue developing food manufacturing establishments.

**Recommendation 3: Build a broad base of support for a food innovation center**

**network.** Community, governmental, and industry support are vital if a center is going to thrive. Without this support, the center may get built, but it is unlikely be financially sustainable or utilized by potential clientele. There is already momentum behind creating a food innovation center network in Montana. Ron de Yong, Director of Montana's Department of Agriculture, has expressed strong support for the concept. The Economic Affairs Interim Committee of the Montana Legislature has recently concluded research on re-invigorating food processing in Montana for Senate Joint Resolution 13. And the Grow Montana coalition supports legislation in 2009 that improves and expands technical assistance for value-added food processing in Montana, with a particular emphasis on food innovation centers. Now the next concrete steps need to be taken.

Progress toward achieving this recommendation can be accomplished by:

- a. *Making the case for a food innovation center network in terms of its economic development potential.* Use the results of this present study, and the information gathered through Recommendation One, to explain the proposed network in this light.

- b. *Securing the backing of key legislators and organizations* from across party lines and political affiliations.

**Recommendation 4: Start by building a central clearinghouse of information that can be disseminated electronically.** Fully 13 of the 18 respondents interviewed for Senate Joint Resolution 13 (see Appendix C) identified the lack of technical and marketing information and a central clearinghouse for information and technical assistance (especially at local/extension level) as a barrier to value-added food processing in Montana. Putting anything in a “central” location in Montana, however, does not solve the proximity issue for most of the state. If the clearinghouse were virtual in format, this problem would be solved. Interested parties from across the state would have equal access to valuable food processing and technical assistance information.

In a similar view, Lou Cooperhouse, Director of the Rutgers center, suggested stepping up the services of a food innovation center in phases. As mentioned above, the online clearinghouse of food processing information and technical assistance could be the first step. Once the necessary funding and support had been generated, an actual processing center could be built to which clients could come to get hands-on experience processing their food product. In addition to processing, this center should offer at least the following services: product development, laboratory, business assistance/incubation, educational classes, food science, analytical, and food safety training. Once the processing center is built, though, the online clearinghouse must not be eliminated. It should continue to be updated and expanded as a one-stop shop for technical information.

**Recommendation 5: Build the food innovation center organizational structure in a Montana context using the state’s existing assets and adding additional resources in food science.** Some of the state’s current assets include:

- Montana State University/Extension, Bozeman, Montana, and across the state
- The University of Montana’s College of Technology, Missoula, Montana
- Lake County Community Development Corporation/Mission Mountain Food Enterprise Center, Ronan, Montana
- Community GATE, Glendive, Montana
- Existing food businesses across the state

The most practical option for Montana may be to house food innovation center(s) within a public/private partnership—the university system and/or state government partnering with a non-profit. It should be noted that the universities involved in these centers must operate as dynamically as possible. Meeting the expectations of the food industry will be very difficult for universities mired in bureaucracy.

Progress toward this recommendation can be accomplished by:

- a. *Working with Montana State University, and/or the College of Technology to explore the feasibility of adding a faculty member with expertise in food science.*

Food scientists are involved in all aspects of the development of a new food product, including the processes used to produce these products, microbiological and chemical testing, shelf-life studies, and sensory evaluation. Food scientists are often the only people trained to do some of the testing necessary for meeting government regulations. Since food samples can be sent to food scientists in



other states for testing, it is not absolutely necessary for a food innovation center to have a food scientist on hand. However, without a food scientist these activities may be slowed or discontinued altogether.

- b. *Using the extension network across the state to improve the technical assistance necessary for food science and processing.* This technical assistance should include business development, regulation compliance, marketing, food safety, and other topics. Extension is an already existing network that has real rapport with agricultural growers and producers. This relationship should not be overlooked or made lightly of but instead should be utilized to the benefit of both the agricultural and food processing sectors. Extension could be vital in linking growers and producers who have a crop to be processed with entrepreneurs who actually want to do the processing.
- c. *Examining the hub and spoke model for its feasibility in Montana.* The hub and spoke model consists of a central center that provides the bulk of the general technical assistance and satellite centers around the state that deal with specific crops or food products. Satellite centers should be located in areas where the particular focus food product is grown or produced. For instance, the beef satellite would be in a beef producing region of Montana, the grain satellite would be in a grain producing region, and so on. Accordingly, Mission Mountain Food Enterprise Center in Ronan and the center currently being proposed by Community GATE in Glendive would be satellites, possibly with Montana State University or the College of Technology being the central hub. Other satellites could be added as needed.

Because Montana is a very large state with a relatively low, scattered population, it does not make sense to build one large, one-stop shop for value-added assistance. Potential clients would have too far to travel to make use of the center a feasible option. The hub and spoke model allows staff at the satellites to be specialists in their particular food product, decreases the distance clients have to travel to use the center, and takes advantage of the diverse geographic areas and agricultural products of Montana. This hub and spoke model may make sense for the state of Montana; however, the organizational structure will ultimately depend on Montana's goals for these centers.

**Recommendation 6: Develop and implement a strategy for funding that is sustainable.** Funding is the most formidable challenge of food innovation centers. In order to ensure that funding issues do not handicap the proposed center network, a funding strategy must be both practical and sustainable.

Progress toward achieving this recommendation can be accomplished by:

- a. *Matching the funding approach to the chosen organizational structure.* For instance, if it were decided that the food innovation center network would be part of Montana State University, some of the funding would naturally come from the state through the university in the forms of salaries. If the network were instead to be part of the state government, maybe as a program of the Department of Agriculture, it follows that the state would provide some of the funding.

b. *Ensuring that funding for the food innovation center network is secure, and not wholly dependent on the fickle winds of politics or foundation grants. At least a portion of the initial funding for a food innovation center will likely come from the government either through grants or general funds or both. To this end, service fees should also be incorporated into the funding strategy. However, while these fees will contribute to the overall operating budget, it is important to keep in mind the economic development goals behind food innovation centers. Service fees must not be set so high that they eliminate the possibility of small businesses using the facility. Likewise, foundation grants are useful in that they can help make up the balance of needed funding. Relying only on grants, however, is likely to leave the center in financial tight spots in lean years. Even in good years, relying solely on grant funding will keep the staff too busy searching for and writing grant applications, stretching them too thin to offer their clients the best service. The best option is to have a variety of funding sources so that if one declines, the others can make up the difference.*

**Recommendation 7: Recruit and retain qualified and experienced staff for the centers.** Food innovation center employees affect not only the quality of service and expertise offered by the center, but also client-center relationships. On one hand, the staff should include those with knowledge of industry practices, economics, research and development, food science, and food processing. On the other hand, staff people also need an understanding of how to negotiate different political and economic climates, and

how to build trust with clientele. Special emphasis should be placed on finding a director for the center who embodies these traits to the fullest.

Progress toward achieving this recommendation can be accomplished by:

- a. *Courting food scientists* from other states and/or countries to convince them of the opportunity to work at a food innovation center in Montana. Every effort should first be made to find food scientists in Montana, but the lack of such programs in the state will most likely make this very difficult.
- b. *Improving and expanding the state's job training programs.* The lack of skilled labor in Montana is a formidable obstacle to overcome. Once there is more processing in the state, the pool of skilled workers will naturally increase in size. Until then the state, together with the universities and community colleges, should make a priority of job training programs that teach industry practices, food processing skills, and business and economics. This need is corroborated by the research done for Senate Joint Resolution 13, in which workforce training was very high on the list of Montana's food system needs (see Appendix C). Some respondents specifically mentioned the possibility of a training program for meat processors at the College of Technology, an idea that Thomas Campbell, Director of the Culinary Arts Program, has expressed support for. The College of Technology's Culinary Arts Program is a valuable resource that is beginning to focus on food processing training in addition to its current emphasis on the hospitality industry. The College of Technology is hoping to expand onto a new

campus over the next several years, and Campbell is hoping to implement a processing element into the new curriculum.

The state of Montana could benefit greatly from a network of food innovation centers. Having researched food innovation centers across the country and Canada, Grow Montana, the Economic Affairs Interim Committee, the state of Montana, and other interested parties may begin to develop a plan concerning these centers. The recommendations listed here are suggestions for how to go about laying the groundwork for these centers. However, I would encourage those involved in planning the development of these centers to further consider all options, including markets, funding, organizational structure, location, staffing, and more.

A word of caution: though beneficial in a multitude of ways, food innovation centers are not a magic bullet. They are a first step in the right direction, one of many steps that need to be taken toward a more sustainable Montana food system. These steps cannot be taken without the commitment of partners from all sectors of the food and agricultural industries. Likewise, a food innovation center will not thrive unless it has the commitment of its parent agency, whatever that agency turns out to be. If it receives this commitment, however, a food innovation center has the opportunity to fill some of the most critical gaps in Montana's food system.

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## APPENDIX A

### **Grow Montana Steering Committee:**

- Alternative Energy Resources Organization
- Mission Mountain Food Enterprise Center
- Montana Farmers Union
- Montana Foodbank Network
- National Center for Appropriate Technology
- Stranie Ventures, LLC
- The University of Montana's Environmental Studies Program
- UM Farm to College Program
- Artemis Common Ground

## APPENDIX B

### SENATE JOINT RESOLUTION NO. 13

INTRODUCED BY SMITH, STEINBEISSER, BALES, L. JONES, STAHL,  
REINHART

A JOINT RESOLUTION OF THE SENATE AND THE HOUSE OF REPRESENTATIVES OF THE STATE OF MONTANA REQUESTING AN INTERIM STUDY TO EVALUATE METHODS AND RECOMMEND WAYS TO ADD VALUE TO MONTANA AGRICULTURAL PRODUCTS THROUGH REDEVELOPMENT OF A FOOD PROCESSING INDUSTRY; AND REQUIRING THAT THE FINAL RESULTS OF THE STUDY BE REPORTED TO THE 61ST LEGISLATURE.

WHEREAS, most of the \$3 billion that Montanans spend on food each year goes to out-of-state companies; and

WHEREAS, the lack of a food processing infrastructure is a primary barrier inhibiting the ability of farmers and ranchers to serve in-state markets; and

WHEREAS, Montana's neighboring states add as much as eight to nine times more value to their agricultural products than Montana; and

WHEREAS, the food processing industry was Montana's number one employer through the 1940s, but today the Montana food processing industry is negligible; and

WHEREAS, Montana farmers, ranchers, small business entrepreneurs, and community economies would benefit from redevelopment of a food processing industry; and

WHEREAS, Montana's climate and soils can support production of a much greater diversity of agricultural and food products than are currently produced; and

WHEREAS, value-added enterprises owned by Montanans retain more of the value that is added to agricultural products in Montana communities; and

WHEREAS, producing food for local markets can reconnect Montana's rural and urban economies; and

WHEREAS, dependence on bulk raw commodity export markets diminishes the viability of Montana's rural economies and family farms and ranches; and

WHEREAS, food production on a family or community scale can enhance stewardship of Montana's natural and human resources; and

WHEREAS, value-added food production can contribute to the economic development goals of many communities.

NOW, THEREFORE, BE IT RESOLVED BY THE SENATE AND THE HOUSE OF REPRESENTATIVES OF THE STATE OF MONTANA:

That the Legislative Council be requested to designate an appropriate interim study committee or statutory committee, pursuant to section 5-5-217, MCA, or direct sufficient staff resources to:

(1) identify and compile statistics on model programs and policies that have been

effective in supporting the development of value-added food enterprises and a strong entrepreneurial culture within the food and agriculture sectors;

- (2) when possible, include a summary of the economic, social, and environmental impacts of each of these model programs and policies;
- (3) identify the barriers to value-added food production in Montana;
- (4) using the findings, recommend public and private programs and policies appropriate to Montana that:
  - (a) support value-added food production that keeps money circulating in Montana's communities;
  - (b) sustain the state's natural resources; and
  - (c) encourage fair treatment of participants at each step in the food value chain, from field to table; and
- (5) determine methods used by other states with geography similar to Montana to add more value to raw agricultural products.

BE IT FURTHER RESOLVED, that the study consider input from:

- (1) producers of livestock and crops;
  - (2) value-added meat processors;
  - (3) value-added nonmeat food processors;
  - (4) public and private economic developers;
  - (5) nonprofit, community-based food system advocates;
  - (6) Montana State University-Bozeman agriculture extension agents;
  - (7) Montana State University-Bozeman extension nutritionists;
  - (8) University of Montana-Missoula food system researchers;
  - (9) Agriculture Development Division staff at the Department of Agriculture;
  - (10) Business Resources Division staff at the Department of Commerce;
  - (11) food distributors and wholesalers;
  - (12) state legislators;
  - (13) the Governor's Office of Economic Development; and
  - (14) the food and consumer safety section staff of the Department of Public Health and Human Services.;
- AND
- (15) The Department of Livestock

BE IT FURTHER RESOLVED, that if the study is assigned to staff, any findings or conclusions be presented to and reviewed by an appropriate committee designated by the Legislative Council.

BE IT FURTHER RESOLVED, that all aspects of the study, including presentation and review requirements, be concluded prior to September 15, 2008.

BE IT FURTHER RESOLVED, that the final results of the study, including any findings, conclusions, comments, or recommendations of the committee, be reported to the 61st Legislature.

- END -

## APPENDIX C

### **Preliminary Analysis of Interviews with Key Stakeholders** SJR 13 Interim Study on Redevelopment of a Montana Food Processing Industry

Prepared by  
Jessica Babcock, Graduate Research Assistant, Grow Montana Policy Project  
and Neva Hassanein, Associate Professor, University of Montana  
Presented to Economic Affairs Interim Committee  
November 8, 2007,  
Miles City, Montana

SJR 13 identifies 15 categories of key stakeholders to consult for input on how to improve food processing in Montana. These categories are: producers of livestock and crops; value-added meat processors; value-added nonmeat food processors; public and private economic developers; nonprofit, community-based food system advocates; Montana State University-Bozeman agriculture extension agents; Montana State University-Bozeman extension nutritionists; University of Montana-Missoula food system researchers; Agriculture Development Division staff at the Department of Agriculture; Business Resources Division staff at the Department of Commerce; food distributors and wholesalers; state legislators; the Governor's Office of Economic Development; the food and consumer safety section staff of the Department of Public Health and Human Services; and the Department of Livestock.

During September and October 2007, Grow Montana carried out 18 interviews with such stakeholders. This is not a representative sample, but it is significant that there were so many common responses across the different stakeholder groups. Additional interviews will be conducted; we welcome suggestions for potential interviewees.

In the course of the interviews, many barriers to redeveloping food processing in Montana were identified. The following presents possible solutions to these barriers. The numbers in brackets indicate the frequency with which a major theme was mentioned.

#### **I. Perceived barriers to value-added food processing in Montana:**

1. Lack of technical and marketing information and know-how, or a central clearinghouse for information and technical assistance (especially at local/extension level) [13 of 18]

*"Montana needs education or recruitment of people knowledgeable in value-added."*

--Jon Stoner, Director, Montana Grain Growers

2. Lack of processing infrastructure/facilities (existing plants are old, inefficient) [8 of 18]
3. High costs (transportation, energy, equipment/maintenance, marketing, insurance, technical assistance) [7 of 18]
4. Lack of capital (one person noted that Board of Investments Program requires too much equity; existing programs tend to favor larger, more capital-intensive projects) [7 of 18]
5. Need for a more cooperative and entrepreneurial climate (includes few cooperatives; go-it-alone-attitude; and ag and nutrition programs working separately) [7 of 18]
6. Regulations (often complex and overwhelming; force facility and process upgrades that can be positive but costly and burdensome; small businesses must operate under the same regulations as large plants/companies; state inspected meat products must stay in state) [6 of 18]
7. Lack of transportation networks (including distribution and warehousing) [5 of 18]
8. Shortage of skilled labor (includes young people moving away and losing people to retirement) [5 of 18]

Less frequently mentioned responses include: lack of incentives for processing (financial and market-based); lack of political support; lack of support for organic; and broader market factors (e.g., low margins on food products; lack of fair prices; economies of scale; lack of efficient production/volume).

## **II. Perceived needs and opportunities related to overcoming barriers:**

### **A. Promote research and training in the University System and other appropriate agencies.** Some specific suggestions include: [16 of 18]

1. Food Science Program at MSU with satellites at colleges and universities around the state
2. Focused feasibility studies to examine the barriers, needs, and opportunities for value-added food processing in specific markets around the state
3. Value-added food processing and workforce training (including a College of Technology training program for meat processors)
4. Increased marketing assistance (e.g., product formulation; labeling; Montana food branding; nutrition; sensory analysis)
5. Increased business planning assistance
6. Assistance with health and safety regulation compliance (e.g., web- and print-based clearinghouse)

*“We need to address the University System to develop a core group of experts in this state to focus on food science and food production.” --Mary Stein, MSU nutritionist*

**B. Establish food-processing centers throughout the state to meet regional processing needs.** [14 of 18]

1. Many respondents (7) specifically mentioned the need to establish 5 or 6 more facilities like the Mission Mountain Food Enterprise Center in Ronan. MMFEC provides marketing assistance, business and cooperative development incubation, technical support, a certified commercial kitchen and processing facility, and specialty food services. Additionally, chef programs and shared-use kitchens were also mentioned.
2. Some specific processing needs mentioned included: 5-6 small (12-15,000 head/year) beef packing plants throughout the state; a rendering plant; hog processing facility; chicken processing facilities; regional fruit and vegetable processing facilities; organic food grade oil seed processing plant; lentil decortications plant
3. A variety of promising products were identified as having potential for processing (including processed meat such as pork and beef; processed grain; baked goods; food grade oils; vegetables such as carrots and potatoes; legumes; dairy; freeze-dried foods; organics; and seconds processed into saleable products)

*“We need more processing centers like MMFEC that can help producers prove that their product is marketable and can be done. Then those farmers would be able to go to the bank for loans to build higher volume.” --Billie Lee, Lake County Community Development Corporation*

**C. Promote communication, networking, and partnerships among the various players in Montana’s food system, including industry, universities, regulators, and funding sources.**

[9 of 18]

*“Networking is key. Industry needs to work with academia as well as government regulators.” --Carol Olmstead, Meat Inspection Division, Department of Livestock*

**D. Expand availability of capital that can be both long term and low interest, including:**

[9 of 18]

1. Grant and loan programs (including improving and expanding the Growth through Agriculture Program and allowing funding for experimental projects)
2. Economic development funds (for non-profit economic development agencies and others)



*“We need grant programs, dollars, incentives. Period. We’re doing it with energy, now we need the same types of things for local food processing. People in Montana have great ideas, but it all takes dollars. It all comes down to money.”*  
Chris Aageson, Governor’s Office of Economic Development

**E. Design and implement targeted incentive programs.** Specific ideas included: [7 of 18]

1. Tax incentives for private enterprise to purchase locally-produced food products
2. Tax credits for start-up businesses for the first five years
3. Programs to encourage market-based incentives (i.e., promote consumer demand for Montana products)
4. Other infrastructure incentives such as water and railroad access
5. Subsidies to help existing plants get up-to-date

**F. Increase state government’s leadership of and funding for value-added food processing through:** [7 of 18]

1. Creating a climate among government officials that is open to alternatives, champions Montana’s food products, and fosters entrepreneurship
2. Supporting laws that are friendlier to small businesses
3. Developing an initiative promoting the purchase of locally-produced food products across the state
4. Increasing support (money and manpower) for existing programs that enhance food processing (including Made in Montana, Extension, DPHHS, Meat Science Program at MSU, and value-added outreach at MDA)

**G. Create a statewide food distribution system** (including a centralized service for transportation information and technical assistance) [6 of 18]

*“We need a clearinghouse for transportation and a centralized location where entrepreneurs could go for logistical help or technical assistance—ideally a one-call for answers, not endless referrals and loop de loop bureaucracy.”* --Bob Quinn, food entrepreneur

**H. Establish a cooperative program that allows participants to increase capacity by sharing things like bar-coding (UPC) ability, liability insurance, labeling, and ability to fund large orders.** [4 of 18]

*“One of the keys down the stretch will be implementation of the cooperative model. We tend to have a go-it-alone attitude, which amplifies problems. If we could pool our knowledge and resources, we would be much better off.”* --Chris Aageson, Governor’s Office of Economic Development

**I. Support development of specific market opportunities for value-added processed foods in Montana,** including possibilities such as: [4 of 18]

National Park food concessionaires like Yellowstone’s Xanterra; schools; hospitals; colleges; Montana’s sister state, Kumamoto, Japan

**J. Nurture an entrepreneurial climate.** [4 of 18]

**III. Programs and resources to explore here and in other states that effectively support value-added food processing:**

- Entrepreneurial centers like Mission Mountain Food Enterprise Center and those in Oregon, Nebraska, and Iowa [7 of 18]
- Universities, including: [7 of 18]
  - Oregon State University's Food Innovation Center and food science program
  - Washington State University's food science program
  - Idaho State University-Caldwell
  - New Mexico State University's program that provides seed money in the form of state funding and USDA grants
  - University of Nebraska-Lincoln's food processing center
  - Other universities with innovative programs: South Dakota State University, Kansas State University, Iowa State University, Illinois State University, University of Wisconsin
  - Temple University: Philadelphia Sustainable Business Development

## APPENDIX D

### **SJ13 Initial List of Innovative Value-Added Food and Agriculture Policies from other states**

*Compiled by Jessica Babcock for the Interim Committee on Economic Affairs  
From the New Rules Project and the National Council of State Legislatures (NCSL)*

#### ***Colorado Agriculture Value-Added Development Fund Program***

In May 2001 the Colorado legislature passed HB 1086, which created the Agriculture Value-Added Development Board within the Department of Agriculture. The Board makes grants, loans and loan guarantees, and equity investments, and also offers tax credits to eligible agricultural value-added cooperatives. The tax credit is available for members of eligible agriculture value-added cooperatives in an amount equal to the lesser of 50 percent of the member's investment or \$15,000, up to a maximum amount per project of \$1,500,000 (these are the same limits as the **Missouri tax credit**). \$4 million is available for tax credits on an annual basis. Ten percent of the tax credits are reserved for projects with capital costs equal to or less than \$1 million. Additionally, 10 percent of the funds must be awarded to grant requests of \$50,000 or less. If all of the \$4 million is not used by producers during the first nine months of the fiscal year, the remaining funds can be utilized by the state to support feasibility studies, loans, loan guarantees, grants, and other forms of support for new co-ops and other types of community-based agricultural value-added businesses.

#### ***Oklahoma Producers Tax Credit***

The Oklahoma Producers Tax Credit (H.B. 2959) passed in 1996, giving a value-added processing tax credit to farmers and ranchers. For every dollar an Oklahoma agricultural producer invests in an agricultural processing venture, they receive a 30% tax credit. Outside investors may invest in facilities, but do not qualify for the tax credit. The credit can be carried for 7 years.

The tax credit went into effect beginning in the 1997 tax year. The incentive was enacted to increase agricultural processing plants, increase venture capital opportunities, and provide additional revenue for Oklahoma ranchers and farmers. Due to the new credit, several new value added facilities are under development. Already operational is the Oklahoma Value-Added Products Cooperative (VAP). The co-op is owned by 750 farmers who run a \$19 million plant that produces formed dough products (pizza shells, frozen breads, etc.).

***North Dakota Agricultural Cooperative Income Tax Credit***

In 2001 North Dakota lawmakers approved Senate Bill Number 2386, which gives a state income tax credit of up to a maximum of \$6,000 annually for people who invest in agricultural processing cooperatives. The tax credit is equivalent to thirty percent of the amount invested in the cooperative by the taxpayer, up to a total annual investment of \$20,000. Investors in cooperatives or limited liability corporations are eligible for the credit, so long as the business has an agricultural commodity processing facility in this state and is more than half farmer-owned.

***Connecticut SB1081: inactive***

The Department of Agriculture would establish and administer a program of matching grants to municipalities to further agricultural viability. Grants would be used for local capital projects that foster agricultural viability, including processing facilities.

***Vermont HB522: adopted/law***

Attempts to assure the long-term viability of Vermont agriculture by establishing goals for the state. This includes establishing a system whereby the state will follow its own “buy local” campaign by purchasing local food and dairy products. Also to establish a system for local producers and processors to market their products to state purchasing entities, in addition to establishing a system for state purchasing entities to advertise to and connect with local producers and processors. This bill also would establish a program in the Agency of Agriculture, Food, and Markets to provide strategic and technical assistance to local producers and processors for creating or enlarging the facilities necessary to produce or process food for sale to the state or other expanded markets.

***Wisconsin SB89: active***

Requires the Dept of Ag, Trade, and Consumer Protection to conduct a program to increase awareness and consumption of locally produced foods. In addition, this bill creates a grant program to expand facilities for the processing and distribution of food for local consumption; as well as creating or supporting networks of producers; and strengthening connections between producers, retailers, institutions, and consumers and nearby producers. This bill also appropriates money for the programs.

***New York A8003: inactive***

Would provide a program to increase financing for the development of processed and packaged foods grown in New York state for delivery to foodservice operation markets, including restaurants, schools, universities and other food service institutions. Includes loans, loan guarantees, interest subsidies and grants including interest subsidy grants to local or regional organizations that can be used to finance new construction, renovation or leasehold improvements and the acquisition of land, buildings, machinery and equipment.

***Vermont Act 145 of 2006: Farm to School Law***

Vermont has passed legislation that tries to strengthen the connection between schools and local farmers and farm products. Although relatively a small program, the training and food processing programs are excellent features to support local food production. The bill contains the following:

- Mini-grants of up to \$15,000 for schools to:
  - purchase Vermont products
  - acquire cafeteria equipment to process fresh products
  - provide materials and professional development for teachers with food, farm and nutrition activities
  - take trips to local farms
- Training of food service staff on how to purchase and prepare Vermont products in school meal programs.
- Training of farmers on how to sell products to schools and other government agencies.
- Funding for a Vermont food processor to process locally grown products for schools and institutional markets, or for equipment for farmers to process products.

Researching strategies to increase use of locally grown products in Vermont schools and state agencies.

***Minnesota SF591: active***

Authorizes the Commissioner of Employment and Economic Development to designate family agricultural revitalization zones (FARMZ) for on farm agricultural processing facility projects under the job opportunity building zones (JOBZ) program and requires the commissioner to consider tax incentives.

***New Mexico HJM45: adopted/law***

Creates the New Mexico food and ag policy council to strengthen New Mexicans' access to sufficient, high-quality food and the economy of New Mexico's ranches, farms, and value-adding food processors.

***New Mexico SB241: inactive***

\$150,000 would be appropriated from the general fund to the board of regents of the NM university system for expenditure in fiscal year 2007 for the NM Department of Agriculture to assist ag producers in the establishment of cooperatives.

***New York A3717: inactive***

Would establish a kitchen incubator/shared-use kitchen facility program to provide grant funding to local development corporations, municipalities, educational institutions and not-for-profit entities for the development or expansion of kitchen incubator/shared-use

kitchen facilities which make available services such as food production, technical assistance, business management and marketing, distribution, storage and retailing assistance, particularly in economically distressed areas.

***Montana HB223: inactive***

Would fund six Montana Agriculture Innovation Centers to provide technical assistance and capital availability to food and agriculture entrepreneurs.

***Montana HB716: inactive***

Would establish a local foods grant program to help Montana schools develop relationships with local farmers and producers; require the development and implementation of educational opportunities for Montana farmers and food producers to increase their markets; provide for grants to food processing entities and local food cooperatives that process locally grown farm products for school and institutional markets and that rent equipment to local farmers and food producers in order to process products for sale; require a report to the Legislature, and provide a set-aside of funds from the Montana Growth through Agriculture Act to fund program grants.

**Federal Tax Provisions: Encouraging Value Added Cooperatives**

The Internal Revenue Code, Section 1042(g) is a provision passed by Congress in 1998 that allows the owners of agricultural and horticultural processing plants to defer the capital gains tax as long as they (1) sell to a farmers' cooperative whose members include the farmers who supply the facility, and (2) reinvest the proceeds in corporate stocks and bonds. The purpose of this tax break, according to the National Council of Farmer Cooperatives, is to give farmers a "tax-leveraged self-help mechanism to encourage them to move into further processing and capture a larger share of the nation's food dollar. The new provision helps to make farmer co-ops the buyers of choice for agricultural processing facilities and gives them enough leverage to negotiate an attractive price. The buyers must include growers responsible for at least 50% of the input to the plant.

## APPENDIX E

### **Recommendations regarding Montana food processing and distribution generated at the Governor's Food and Agriculture Summit**

Helena, MT

March 22-23, 2007

Over 280 people attended the Governor's Food and Agriculture Summit. Various topical work groups were convened to discuss barriers and opportunities associated with Montana's food and agriculture system. The food processing and distribution workgroup came up with the following recommendations.

**Overall Recommendation: Promote development of more local and regional food processing and distribution systems. Increase the resources and capacities needed to support such development, including cooperatives.**

#### Action Steps:

1. Support the building of regional food processing centers around the state and provide resources for their operation.
2. Support Montana's network of agricultural innovation centers.
3. Implement incentives for investment in local processing facilities.
4. Establish a revolving loan fund for cooperative capitalization.
5. Support cooperative development in all sectors of the food system. In doing so, request that the office of the Secretary of State help facilitate cooperative business development via their web site and informed staff.
6. Support an in-state and regional transportation feasibility study.
7. Create incentives for distribution companies to help develop model transportation systems that may include community-based food warehouses and distribution hubs, with a focus on energy-efficient food transportation.

## APPENDIX F

### **Interview Guide Directors of out of state food innovation centers**

NAME:

ORGANIZATION:

PHONE:

DATE:

**INTRODUCTION:** Thank you for agreeing to participate in this interview. My name is Jessica Babcock, and I am a graduate student at the University of Montana. I am doing this research as part of my Master's degree. Also, the Montana State Legislature is doing an interim study on how to reinvigorate food processing in the state, and this research will contribute to that process. I am trying to figure out how food innovation centers can help facilitate the redevelopment of a food processing industry in Montana. In order to do that, I am talking to directors of food innovation centers in other states to see how their centers function. That's where you come in. I am interested in how your center is structured, your users, what works, what doesn't, things like that.

Now, before we get started, I want you to know that your identity as a participant in this study will NOT remain confidential. As you can probably imagine, there aren't that many of these centers around the country, and you play a unique role in \_\_\_\_ {STATE} \_\_\_\_, so keeping your identity confidential would be pretty difficult. But I want to assure you that I'll be very careful in my written report to avoid contributing sensitive comments to particular people.

If you would like to review my written report of our interview in order to give me feedback or catch any errors I may make, you are more than welcome to do so. Would that interest you?                      YES                      NO

If it is OK with you, I would like to tape record the interview. Taping ensures that your views are accurately recorded and it lets me focus on what you're saying rather than on taking notes.

Is that OK with you? IF YES, TURN ON RECORDER.



1. I thought we could start with the history of \_\_\_\_ {center name} \_\_\_\_\_ and your involvement. When did the center get started?

And what brought the center about?

2. How long have you been there?

**STRUCTURE:** Now I have a few questions about the structure of your center.

2. Could you tell me a little bit about how your center operates in terms of what agencies are involved? So for instance, is the center a stand alone non-profit or is it affiliated with the university, or are there multiple partners?

*Probes:* What are the roles of the different partners?  
Explain.

**SERVICES:** Now lets move on to services.

3. What services does your center provide?

*Probes:* Are there any other services that you haven't mentioned?

4. Can you tell me about who uses these services?

5. About how many clients do you serve each year?

6. What services get the most use?

*Probe:* Why do you think that is?

7. What types of markets are the center and its clients oriented toward?

*Probes:* local, US, and/or export out of the country?  
Why those?

**FUNDING:** Now I'd like to learn a bit more about how your center is funded.

7. Do you charge user fees for any of your services?

*Probes:* If so, which ones?  
How are the fees determined?

8. Do those user fees completely cover the cost of the service?

*Probe:* If so, which ones?  
How does that work?

9. What other sources of funding do you have?

*Probes:* In general, what are your most important types of funding?  
→ grants, state support, user fees, or all of those combined?

**BIG PICTURE:** Now lets move on to the big picture.

10. So when you think about how your center operates, what would you say are the top factors that contribute to your success?

*Probes:* (Echo) Are there any other important factors?

11. What are the biggest challenges that you face?

*Probes:* (Echo) Are there any other big challenges?

12. As I mentioned earlier, MT is considering making more of an investment in food innovation centers. Do you have any advice for us on how we can maximize our success?

**WRAP-UP:**

13. I was wondering: Are there any documents (annual reports or that type of thing) that you would be willing to share with me that would help me better understand how your center operates and also the accomplishments it has made?

14. Is there anything else you would like me to know?