

ECONOMIC VALUE AND IMPACT OF LOCAL FOOD IN MONTANA

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PREPARED BY



ON BEHALF OF



Economic Value and Impact of Local Food in Montana

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EXECUTIVE SUMMARY

Local food markets in Montana, where food is both produced and consumed in the state, generally involve small farmers, diverse products, and short supply chains¹ relative to the typical agricultural producer involved in long food chain systems (or conventional producers). Further, the producer of local food is typically also performing or actively involved in the value chain to the end consumer including storage, packaging, processing, marketing, transportation, and distribution.

Section 1 provides a historical context of local food in Montana. Agriculture in Montana has developed alongside transportation infrastructure. As transportation infrastructure was developed (namely rail and road infrastructure) there was a shift in both the market channels for producers and consumers. From the early 1900s to 1950s, approximately 70% of the food consumed in the state was produced in the state. During this time period and especially from the 1930s to 1950s Montana farmers were net exporters of fresh and processed fruits and vegetables; cheese, butter and a variety of processed foods, along with commodities (NCAT, 2007).

The transition of the food value chains across the US (and Montana in particular) created consolidation of food production and processing sectors, where the main actors in the food chain had a competitive cost advantage. While this system emphasizes efficiency and results in food that is priced lower than could be achieved in short food supply chains, it also has led to the following:

- **Less food processing capacity (and associated employment) in Montana:** Montana employed 3,000 people in the food processing sector in the 1950s and while the population has doubled there are only 2,647 people employed in this sector today (2021).
- **More reliance on processing outside the state and distribution infrastructure:** This is particularly evident in meat processing. Montana is known for animal production, cattle in particular. Even though the state has the third highest ratio of cattle to people across the US (Cook, 2022), most of the meat consumed in the state is imported (or re-imported) after it is finished and processed elsewhere.
- **A smaller portion of the retail spending on food going back to the farm and ranch:** The farm and ranch share of the food dollar spent by consumers in 1910 was 60%, and today it is estimated at 16%.

Current market drivers in the food chain, particularly the pandemic, war in Ukraine, and extreme weather events demonstrate that disruptions in a highly consolidated food system will create immediate backlogs and bottlenecks to either access or supply of food. This underscores that safety nets and diversity in the value chain is essential to avoid food insecurity as additional shocks to the system are expected to continue for the foreseeable future.

Section 2 of this report describes our approach and findings regarding the size of the local food economy. There is a general lack of data regarding local food production and consumption. The most recent data available on the topic is from the 2016 Agriculture Census and suggests the value of local and regionally branded food in Montana is around \$19 million total (\$9.2 million through intermediaries, and \$9.8 million through direct-to-consumer channels) (USDA 2016 Ag Census). This study relies on

¹ Sometimes referred to as Short Farm Supply Chain (SFSC)

primary data collection to update and revise this estimate. We use data supplied by the Western Montana Growers Cooperative (WMGC), along with interviews from 39 intermediaries, and other information available on the size of local food sales in Montana to extrapolate a total level of sales at the wholesale level of \$55.9 million. This includes sales through marketing and distribution channels, as well as directly from the producer to the retailer (grocery, restaurant, or institution). We use this as the basis to also estimate that this level of wholesale activity is supporting \$42.5 million in sales at the farm level (including processing), and results in a total retail value (consumer purchases) of \$117.8 million. In addition, consumers are increasingly purchasing local food directly from producers. We rely on the Bureau of Business and Economic Research (BBER) study from 2021 on farmers markets across the state to identify approximately \$7.7 million in local food sales (of a total of \$17.3 million in farmer market sales in Montana). We use this estimate, along with the distribution of direct-to-consumer sales identified in the 2016 Ag Census (farmers markets accounted for 18% of all direct-to-consumer sales) to estimate that in 2021 local food sales in the direct-to-consumer value chain amounted to \$42.7 million. Thus, the total retail value of local food sales across the state is estimated at \$158.5 million (\$117.8 million in retail value through intermediaries and \$42.7 through direct-to-consumer channels). At this level of retail sales, **local food represents 3% of total food consumed in the State of Montana.**² To put this into perspective, the total food spending by US consumers, businesses and government entities totaled \$1.7 trillion in 2020 (Economic Research Service, 2021), whereas the latest estimate of local and regional food nationally was estimated at \$12 billion (S. Martinez, 2021), representing only 0.7% of total food purchases nationally.

At these levels of production, the farmgate (or value to the farm without any other markups) and processing sectors associated with local food in Montana amounts to \$85.2 million, with roughly half of the activity supported by intermediaries and half in the direct-to-consumer channels. This level of **production of local food in Montana represents 2.3% of the total value of agriculture products at the farmgate level.**³ This is slightly lower than the latest published statistics at the national level, which indicate sales of local edible farm products made up 3% of all agricultural sales across the country (S. Martinez, 2021).

A diagram of local food sales by step along the value chain in Montana is provided in the figure below. There is uncertainty in these findings, as the estimate largely depends on responses of a select number of intermediaries and then a process of extrapolation over a much larger portion of the food economy in Montana.

² \$158.5 million as a percentage of the overall food sales in the state, estimated at \$5.2 billion (detailed in Section 2).

³ \$85.2 million in local food sales compared to \$3.7 billion of total agricultural products sold across the state (USDA 2016 Ag Census)

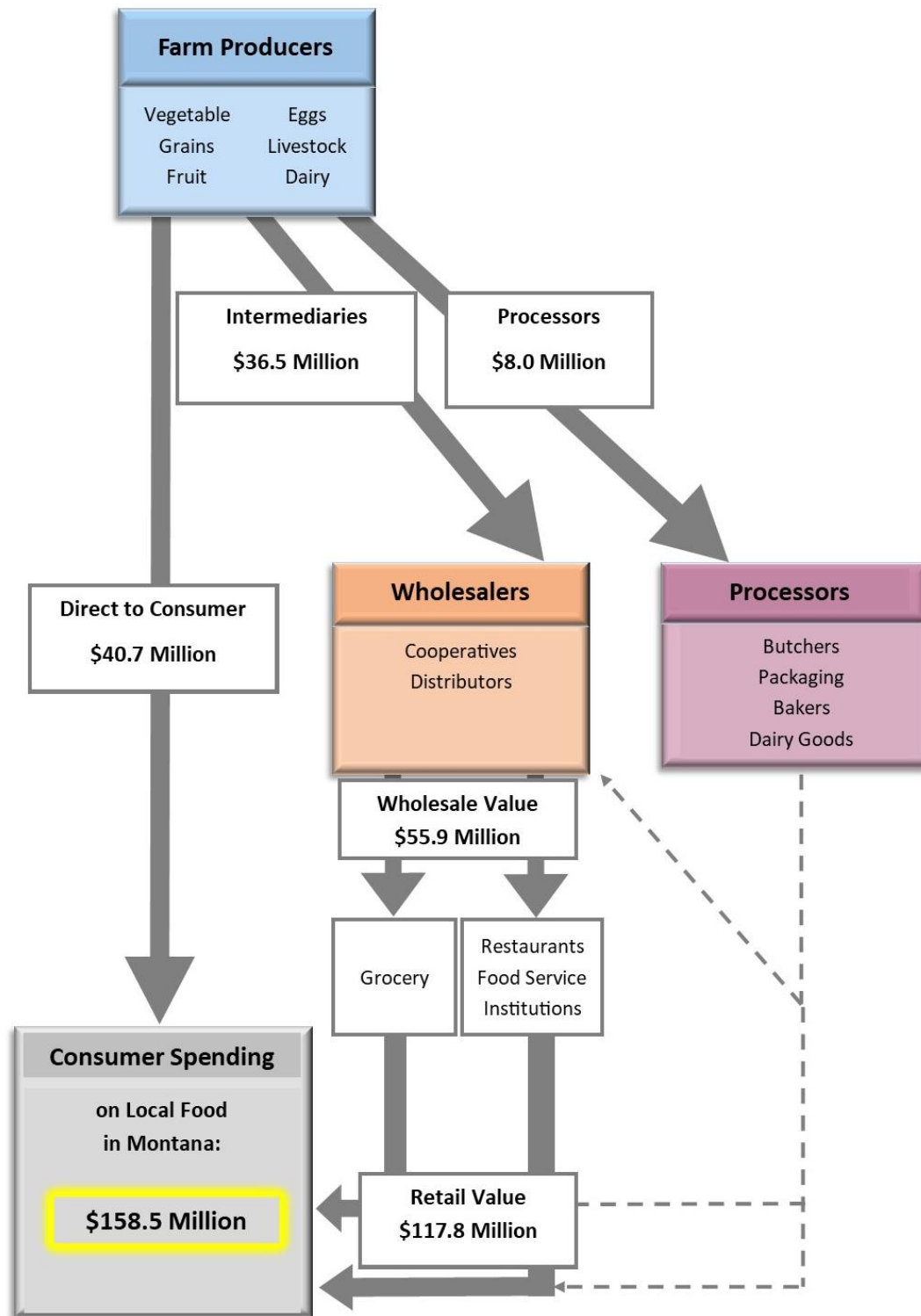


Figure 1. Value of Local Food Transactions by Channel, Montana, 2021

Source: Highland Economics Analysis

Section 3 “Farm and Community Benefits” of the report explores some concepts around farm and community economics, including a discussion of how participating in local food value chains impacts producers and consumers. There are a few economic theories presented in this section that explore why (and why not) producers involved in local food value chains economically gain from selling local food, relative to long food value chains. The literature on this concept is mixed, and it is difficult to say for certain if and how producers’ benefit (economically) from the local food system compared to participation in more conventional food systems, with certainty. Consumer demand and willingness to pay concepts are also explored. The literature suggests consumers are willing to pay higher prices for local food than other attributes. Also, the reason for consumer participation in local food markets is varied. A consumer outreach effort conducted as part of this study identified the key reasons or attributes of a local food purchase decision to be: 1) support for local farms, 2) taste / quality preferences, 3) environmental reasons.

Estimates are provided in Section 3 regarding economic impacts of the local food system in Montana. This analysis focused solely on the economic impacts of farm production and associated processing (such as processing locally grown animals into meat products or cheese making of locally produced dairy). The analysis conservatively assumes that the other steps in the local food value chain, such as transporting, storing, marketing, and retailing food products would occur in the state even with no local food production (i.e., food would be shipped into the state, and then there would still be economic activity in the state associated with transporting, storing, marketing, and retailing the imported food). This approach likely underestimates the economic impact of the local food economy as the transporting, storing, etc. of agricultural products from out of state may support less employment in Montana than locally grown products. Our findings are that local food production results in \$31.9 million in total impacts and supports 1,110 jobs statewide as depicted in the table below.

Table 1. Estimated Economic Impacts in Montana of Agricultural Production and Associated Processing for In-State Consumption

Impact Type	Employment	Labor Income
Direct Effect (Farm and Processing Sectors)	620	\$12,300,000
Indirect Effect	340	\$13,400,000
Induced Effect	140	\$6,200,000
Total Effect	1,110	\$31,900,000

Section 4 discusses other benefits of local food value chains including health and nutrition, land preservation, social connections and sense of place. Local food can affect health and nutrition through providing fresher food options and increasing consumption of fruits and vegetables. Montana adults consume a daily median of 1 fruit serving and 1.6 vegetable servings (significantly less than the recommended 5 servings a day), and rural adults consume even less fruits and vegetables than urban Montana adults (Shanks et al., 2015).

Local food tends to be produced on small farms near metropolitan areas (American Farmland Trust, 2020). As these are the farmlands that are likely most at risk of development; by providing a market for these local farms production, local food can help support preservation of agricultural land near urban areas. Between 2001 and 2016, 96,000 acres of Montana farmland was converted for residential

development, primarily for low-density rural development (American Farmland Trust 2020). Of this farmland, 66%, or 62,900 acres, were Nationally Significant farmland, which has “excellent productivity, versatility, and resiliency, is best suited to intensive food and other crop production, with few environmental limitations” (American Farmland Trust, 2020).

Local food value chains, especially direct to consumer channels, can affect social connections as well, as these channels are a site of regular social gathering, where people not only come to shop, but also to be with friends and neighbors, listen to music, and get prepared food to eat. As noted in one publication, “farmers markets are social events that build, support, and link urban and rural communities by fostering economic opportunities, creating public space, and vitalizing neighborhoods” (Warsaw, et al. 2021). Relative to other food shopping experiences, shopping at local food venues and interactions at these venues are more embedded in social ties, familiarity, and shared values (Warsaw et al., 2021).

Sense of place can have multiple dimensions and be characterized between different types of bonds between an individual or community and a place, including historical/familial, emotional, moral/ethical, mythical, cognitive, and material bonds (Cross, 2001). Several studies have found that participating in local food systems increases people’s community attachment and sense of place (Brandenburg and Carroll 1995; Delind, 2006; Feagan, 2007; Shifren et al., 2017; Moore, 2015).

Finally, we explore opportunities and constraints for local food value chains at a coarse level in Section 5. We use an import-substitution framework, which refers to substituting the food imported into the state with the same (or similar) locally produced food products, including fruits and vegetables, meat, milk and dairy products, eggs and grain.

- **Fruit and Vegetable:** Findings from the import substitution exercise indicate that Montana would need to produce an additional 29,245 acres of fruit and vegetables to fully substitute local production with food imported into the state. Constraints to satisfying this shortage include irrigation and water supply reliability, land availability, cost of arable land, labor availability, investments in crop production, and investment in infrastructure. In addition, this would involve a change in the style of farm practices employed on existing farms which would require transitioning of practices or managers of these lands.
- **Meat:** Given the increasing demand for local meat, the focus on reducing consolidation in the industry, and the production capacity of livestock producers in the state, there appears to be significant opportunities in local production and processing of meat in Montana. In the event that the 17 planned meat processing projects in the state were able to increase the state’s capacity by 50%, this could generate an estimated \$23.6 to \$49.5 million annually in market value of meat products produced.
- **Milk and Dairy Products:** Shortages in processing capacity and milk supply, along with a downward trend in fluid milk generally, stifle the opportunity for increasing locally produced milk. However, there are opportunities in specialty dairy product and artisanal cheese production identified.
- **Eggs:** The supply of eggs produced across the state are roughly equivalent to demand from consumers in Montana.
- **Grains and Oilseeds:** Montana has strong production of grains and oilseeds, which could be used to supply niche food or specialty products if effective brands were established.

1 INTRODUCTION

This report evaluates the economic value of food produced and consumed in the State of Montana, referred to as ‘local food’ throughout the report. Agriculture, in general, is a significant component of Montana’s economy. In 2020, Montana generated \$3.7 billion in agricultural cash receipts with the highest valued commodities being cattle and calves, wheat, and hay. That same year, the value of Montana’s agricultural production and processing industries represented 4.9% of total state GDP (University of Arkansas, Research & Extension, 2022). While these statistics are tracked closely through United States Department of Agriculture (USDA) National Agriculture Statistics Service (NASS) surveys (reported annually) and the Agricultural Census (reported every 5 years), there is less known about a smaller segment of the agricultural sector: the market size of local food in Montana.

There is no universal definition for ‘local food.’ The term local has a geographic connotation, but there is no official consensus on a definition in terms of the distance between production and consumption. According to the definition adopted by the US Congress in the 2008 Food, Conservation and Energy Act (Farm Act, 2008), the total distance that a product can be transported and still be considered a “locally or regionally produced agricultural food product” is less than 400 miles *or* within the State in which it is produced. This analysis defines local food as food that is both produced and consumed in the state, without leaving the state for additional finishing or processing elsewhere.

Local food markets in Montana generally involve small farmers, heterogeneous products, and short supply chains⁴ relative to the typical agricultural producer across the state. Further, the producer of local food is typically also performing or actively involved in the value chain to the end consumer including storage, packaging, processing, marketing, transportation, and distribution.

This assessment generally relied on the approach outlined by Agricultural Marketing Service “The Economics of Local Food Systems” toolkit guide from March 2017 (Agricultural Marketing Service, 2017) to consider the economic value of local food in Montana.

Many existing government programs and policies support local food initiatives. State and local policies include those related to farm to institutions procurement, promotion of local food markets, incentives for low-income consumers to shop at farmers markets, and creation of policy councils to discuss opportunities and potential impact of government intervention.

Prior to 2010 there were few studies on the impact of local food markets on economic development, health, and environmental quality. This study provides:

- An estimate of the size of the local food economy across Montana (both in terms of retail value and farmgate sales)
- Existing income and jobs supported by local food production
- Opportunities (quantified where possible)
- Constraints in expanding the local food systems across Montana

- Information on consumer preferences for local food across Montana

1.1 HISTORICAL CONTEXT OF FOOD SYSTEMS IN MONTANA

Agriculture in Montana has developed alongside transportation infrastructure. Early settlers were, by necessity, self-sufficient in that they had to produce what they consumed. As transportation infrastructure was developed (namely rail and road infrastructure) there was a shift in both the market channels for producers and consumers.

From the early 1900s to 1950s, approximately 70% of the food consumed in the state was produced in the state. During this time period and especially from the 1930s to 1950s Montana farmers were net exporters of fresh and processed fruits and vegetables; cheese, butter and a variety of processed foods, along with commodities (NCAT, 2007).

Agriculture production has changed significantly since that time, with a focus toward improved production methods and efficiency improvements, largely brought on by mechanization. The economics of agriculture production pushed producers to increase in size of area farmed (today, relative to the 1950s) in order to capture economies of scale and efficiencies of production. Since the 1950s there has been a concentration and clustering of crop production and food processing by geography where producers and processors are able to obtain a cost advantage and utilize the transportation infrastructure to distribute their goods across a wider reach. Here are a few extreme examples of this consolidation we see today:

- There are three distinct areas (towns) in California supplying over 90% of strawberry production in the United States, including: Watsonville, Santa Maria, and Oxnard (Chieri Kubota, 2019; Ag MRC, 2021).
- Four conglomerates control nearly all of the market for meat products across the United States: Cargill, Tyson Foods, JBS, and National Beef Packing. The meat processing industry has experienced significant consolidation over the past 50 years as large conglomerates have absorbed more and more small processors. In 1977 the largest four beef packing firms controlled approximately 25% of the market, compared to 82% today (Deese, 2021).
- Washington state supplied 70% of the US production of apples in 2021 and has been the leading apple growing state since the early 1920s (USDA, 2021).
- The top three cheese producing states (Wisconsin, California, and Idaho) produce over half of the cheese in the United States (Statista, 2022).

One result of the long supply chains that have arisen from the consolidation of food production and processing we now experience in the US is food prices that are affordable for the general population. Consumers in the United States spend the least amount of their household income on food, relative to other countries in the world.⁵ Generally speaking, the more developed a country is, the smaller the percentage of household income it spends on food (Gray, 2016). Even though recent food prices have increased rapidly, the Economic Research Service (ERS) reported a 9.4% increase in food prices from April 2021 to April 2022 (ERS, 2022), the total percentage of household income in the US spent on food is still low relative to the rest of the world.

⁵ The US consumer, on average, spends 6.4% of their household income on food (Gray, 2016).

While we enjoy relatively cheap food prices today, the consolidation of production over the past 50 years has led to less food processing capacity (and associated employment) in Montana, more reliance on processing outside the state and distribution infrastructure, and a smaller portion of the retail spending on food going back to the farmer or rancher.

Montana is known for animal production. There are 2.5 million head of cattle in our state and just over 1 million people, or roughly 2.5 cattle for every person. This ratio is the third highest across the US (Cook 2022). However, most of the meat we consume is imported (or re-imported) to the state after it is finished and processed elsewhere.

In 1950s food processing employed 3,000 people in the state (NCAT, 2007), or 0.47% of the population. The 2021 Wage and Employment report for Montana reports 2,647 jobs in the food processing sector (Statistics, 2021), or 0.2% of the population. So, while the population has nearly doubled the employment in food processing has declined. The current location quotient for employment in this sector is 0.52, which indicates there are half as many jobs per capita in food processing as there are in the nation as a whole.

The farmer and rancher share of the food dollar spent by consumers has also nearly disappeared over the past 100 years. In 1910 it was estimated that 60% of the consumer's spending on food went back to the farmer or rancher (NCAT, 2007). Today, it is estimated that only 16% of consumer spending goes back to the farmer or rancher (Service, 2022).

The shifts in the food chain in Montana over the past 70 years have been focused on maximizing efficiencies of the production and transportation infrastructure. These shifts have seemingly also increased security of food supply. However, with recent events the past few years, the security of our food supply system has been tested.

1.2 CURRENT MARKET DRIVERS

There are several current events that are straining food supply conditions globally, including to a limited extent Montana. This section introduces several of the key market drivers for relevant food systems, including:

- **Pandemic:** The COVID-19 pandemic placed stresses on food supply chains with bottlenecks in labor, processing, transport and logistics, as well as a significant shift in demand as restaurants closed and consumers stockpiled food for home consumption. Most of the disruptions felt in the food supply chain in the United States were the result of policies adopted to contain the spread of the virus (e.g., meat processing plants shutting down with positive cases). The pandemic highlighted that production and processing capacity is consolidated in a few geographic areas, and that disruption(s) along the chain create immediate backlogs and bottlenecks to the entire system. While these perils were revealed, the supply chains also demonstrated that they were pretty resilient to these stresses, as grocery store shelves were replenished, and supply chains responded to shifting demand in a timeframe that avoided any significant food security risk. The experience in the food supply chain during the pandemic demonstrates that the largest risk for food security (in developed countries) is not food availability but rather consumers' access to food, and that safety nets and diversity in the value chain is essential to avoid an increase in

hunger and food insecurity (Organization for the Economic Cooperation and Development, 2020).

As a direct response to the constraints identified in the food system during the pandemic, the United States Department of Agriculture is currently focused on a) building more resilient food supply chain that provides more and better market options for consumers and producers while reducing carbon pollution; b) creating a food system that combats market dominance and helps producers and consumers gain more power in the marketplace by creating new, more, and better local market options, and c) making nutritious food more accessible and affordable to consumers, and d) emphasizing equity (USDA, 2022).

- **War in Ukraine:** Russia's invasion of Ukraine has disrupted food supplies across the globe. Ukraine and Russia supply 28% of globally traded wheat, 29% of the barley, 15% of the maize (corn) and 75% of the sunflower oil. Ukraine's food exports provide the calories required to feed approximately 400 million people. With the war there are no supplies being exported. Further, it is likely that if the crop is harvested this season (2022) there will be nowhere to store it, and uncertain if there will be fuel and labor to farm the land for the next season(s). Further, Russia may also be lacking supplies of seeds and pesticides it usually buys from the European Union. With sanctions in place now, production of wheat in Russia is also uncertain (The Economist, 2022). Similar to the pandemic, the war in Ukraine is demonstrating that when a shock occurs to a consolidated key sector of the food economy (in this case grains and oilseeds) there are supply and access issues that ripple throughout the entire food system.
- **Climate Change:** The frequency of extreme drought and flood events is likely to impact agricultural producers across the United States. In Montana west of the continental divide, the climate is generally wetter and more temperate than the rest of the state. Higher elevations receive a heavy snowpack. As a result, total water yield and water yield relative to basin area are far greater in the Clark Fork and Kootenai basins than other parts of the state. The climate east of the divide is generally drier, windier, and experiences more extreme seasonal temperature fluctuations. Summers tend to be hot and dry, and winters cold. The effects of climate trends in Montana are expected to be warmer temperatures and modest precipitation increases, however there will likely be a shift in the timing of runoff due to earlier snowmelt and an increase in rain as a percentage of precipitation during late winter and early spring (Montana State, DNRC 2015). Given the links in our food system, impacts of climate change on production in other key areas is likely to influence the price and availability of food globally. One indication of the increasing prevalence of environmental shocks on agricultural production is the level of indemnities (insurance payouts to farmers) through time. A recent study (2021) from Stanford University found that climate change (specifically higher temperatures) caused payouts from the nation's biggest farm support program to increase by \$27 billion between 1991 and 2017, and anticipated costs increasing further with the growing intensity and frequency of heat waves and severe weather events. Regional trends also emerged from the analysis, including counties in the California Central Valley, seeing the steepest growth in crop indemnities during the study period, increasing by an average of more than \$2 million per year over the time period of the study (Garthwaite, 2021). This data would suggest that shocks to the food system from extreme weather events are likely to continue for the foreseeable future, again highlighting a need to diversify production and processing capabilities in the food value chains.

- Growth in Population:** Globally, the world's population is expected to increase by 2 billion people by 2050 (35%). This increased population and growing prosperity (especially in China and India) are expected to result in a demand for the amount of crops we grow (globally) to double by 2050 (Foley 2022). Population growth in Montana has mainly been concentrated in the largest counties (Yellowstone, Gallatin, Missoula, and Flathead) while Lewis & Clark and Ravalli County have also experienced double digit growth (percentage) since 2010. The map below illustrates the population by county across the state.

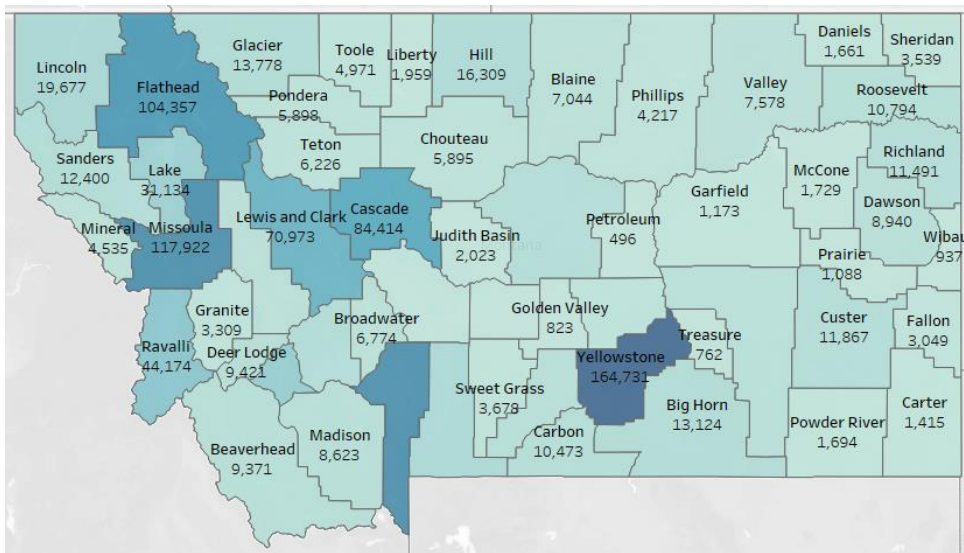


Figure 2. Map of Population by County, Montana, 2021

This trend is expected to continue, as Montana's rural areas are expected to continue to lose people while urban areas grow (World Population Review, 2022). Montana is characterized by vast areas of open space. There are only two states more sparsely populated, Alaska and Wyoming.

- Local Food Movement:** While the food system has become globalized over the past 70 years (as described above), the public's interest in where food comes from has increased, especially over the past two decades. The term "local food movement" refers to the shortening of the distance between food producer and consumer. There are several primary reasons why consumers have increasingly focused on attributes of locally produced food, including keeping food producer's share of food dollar consumed in the local economy, freshness and quality of produce, associated health benefits, environmental reasons (either regarding production practices or shipping distances), and others. The popularity of local food movement is demonstrated in several statistics, including:
 - The growth of farmers markets across the US has been exponential since the early 1990s. The USDA identified 8,727 farmers markets in 2018, which marks a nearly 500% increase from 1994 (Metz, 2021).
 - Nearly half of all organic farms sell through local food markets (Economic Research Service, 2015)

- Sales of local edible farm products totaled nearly \$12 billion in 2017 across the US, up from \$8.7 billion in 2015 (S. Martinez, 2021).

2 SIZE OF LOCAL FOOD ECONOMY

The Bureau of Labor Statistics (BLS) keeps data on food consumption at home and away from home. This consumer expenditure data is collected for select states, select metropolitan statistical areas (MSAs), and regional geographies. The cost-of-living index for groceries in the state of Montana (99.6) is nearly identical to the national average (100) (Discovering Montana, 2022), and thus for purposes of determining the market size of food sales in the state, we utilize national average data on household expenditures from BLS. These expenditures by general categories of food are identified in the table below, both at the household level and state level (assuming 436,100 households across the state) (US Census Bureau 2021).

Table 2. Food Expenditures in Montana, 2021

	Average Annual Spending / Household	Total Market Size (Montana)
Food Expenditures for at Home Consumption:		
Cereal and Bakery	\$605	\$263,840,500
Meat, Poultry, Fish and Egg	\$983	\$428,686,300
Dairy Products	\$509	\$221,974,900
Fruits and Vegetables	\$982	\$428,250,200
Other	\$1,854	\$808,529,400
Food Expenditures for Consumption Away from Home:	\$3,996	\$1,742,655,600
Total Food Expenditures of Montana Residents:	\$8,929	\$3,893,936,900
Total Food Expenditures of Non-Residents:		\$1,288,353,500
Total Food Expenditures		\$5,182,290,900

As indicated in the table above, Montana residents spent around \$3.9 billion on food in 2021. In addition, the state received over 12.5 million visitors in 2021 who spent a total of \$5.2 billion in the state. Of this amount, approximately \$1.5 billion was categorized as food categories of “restaurant, bar” “grocery / snack” and “farmers market” (Grau, 2021). We assume that roughly 15% of this spending was related to alcohol (not included in this study), consistent with the BLS data discussed above, and thus non-resident tourists were estimated to spend \$1.29 billion on food purchases in the state over the year. In total, we estimate that food spending in Montana **approached \$5.2 billion** across Montana in 2021.

The total expenditure of food in Montana can be further divided into the market share to the farm, and by industry group. The USDA documents food dollar expenditures on domestically produced food by US consumers. The Food Dollar Series divides the food dollar into a set of input-component values, including separate series for: marketing bill, and industry group. The marketing bill series is based on sales proceeds and tracks for each food dollar expenditure how much can be tied to the ‘farm share’ and

how much is allocated to the ‘marketing bill.’ The most recent documentation (2020) from USDA indicates that 16 cents of every dollar spent on food goes back to the farm share (proceeds of farm commodity sales tied to a food dollar expenditure and sold to non-farm establishments) (USDA, 2021). Thus, the total spending on food in Montana during 2021 (\$5.2 billion) would represent approximately \$829.2 million at the farmgate.

As discussed earlier, most of this activity associated with the farm share value is occurring elsewhere. To put this into perspective, in 2020 the market value of agricultural products sold across the State of Montana was \$3.5 billion (\$1.6 billion in crop sales and \$1.9 billion in livestock sales) (Haynes, 2020). The farm share of total food consumed across the state would have amounted to roughly one-quarter (24%) of the total market value of agricultural products sold in the state. However, as we explore further below, the farm share of locally produced food would likely have a higher percentage going to the farm share as opposed to the marketing share.

Industry groups are establishments grouped together by type of product or service provided. The USDA tracks 12 industry groupings based on the importance of their contributions to the market value of food. The table below describes USDA’s allocation of food dollar expenditure by industry group (%) at the national level, and what this would represent in terms of the total market value of food expenditures in Montana during 2021.

Table 3. Value of Food Expenditures, by Industry Group, All Food, Montana, 2021

Industry Group	%	Montana
Agribusiness	2.5%	\$129,557,273
Farm Production	8.0%	\$414,583,272
Food Processing	16.7%	\$865,442,580
Packaging	3.1%	\$160,651,018
Transportation	4.1%	\$212,473,927
Wholesale Trade	11.9%	\$616,692,617
Retail Trade	14.2%	\$735,885,308
Food Services	27.9%	\$1,445,859,161
Energy	3.6%	\$186,562,472
Finance & Insurance	3.3%	\$171,015,600
Advertising	2.9%	\$150,286,436
Legal and Accounting	1.8%	\$93,281,236
Total	100.0%	\$5,182,290,900

Source: Highland Economics Analysis, (USDA, 2021)

It is interesting to note that retail trade and food services combine for 42% of the industry group breakdown. These are the establishments (grocery, restaurant, cafeteria, etc.) where people purchase and consume food. In the event that more local food were sold through the value chain, it is reasonable to expect that these industries and their associated percentage of the food dollar would remain at these same levels as the sales activity in these industries are generally set based on markups of food purchased.

The remainder of this section explores the value of local food, or the market size of food that is both produced and consumed in the state of Montana. The percentage of total food expenditure that is locally sourced is a very small percentage, as explained further below.

2.1 SPENDING ON LOCAL FOOD IN MONTANA

For purposes of this analysis, we divide the valuation of local food spending into intermediaries, or the steps between the producer and consumer such as distributors, grocers, restaurants, and institutions; and then separately we consider direct to consumer channels including farmers markets, community supported agriculture programs, farm stands, etc.

2.1.1 Intermediaries

The best publicly available data on local food sales through intermediary channels is from the 2016 Ag Census which reported on 'regionally branded food product' sales at the farmgate level, specific to the State of Montana. The estimate at the time was that \$9.2 million (USDA, 2016 Ag Census) of food was sold through intermediaries.⁶

This study relied on primary data collection, and specifically interviews with grocery managers, restaurateurs, and other food buyers along with sales data from the WMGC to provide an alternate and updated estimate of local food sales. In total, our team interviewed or collected written responses from 39 establishments across Montana. Seventeen of these responses were collected from grocers (40%), and 13 responses were from restaurants (33%), seven were from institutional food service (e.g., school, hospital) (18%), and two were distributors (5%). A graph of these type of establishments participating in this data collection effort are presented in the figure below.

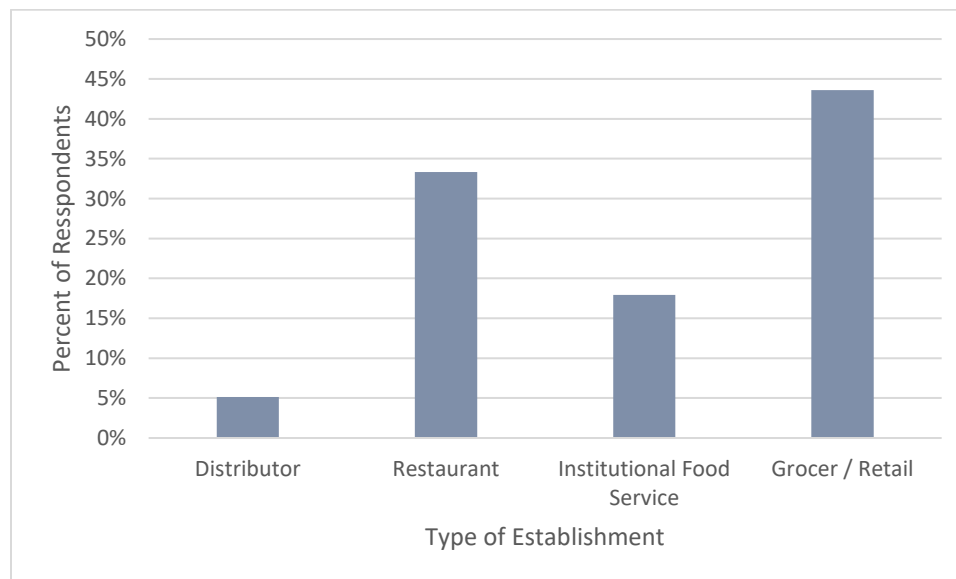


Figure 3. Type of Establishments Responding

⁶ NASS released a 2020 Local Food Marketing Practice Survey data in the spring of 2022 but only included 29 states, Montana was not one of them.

According to this survey responses collected, respondents purchased nearly \$26 million in food in 2021 and 20% of these purchases were from local (Montana) sources, representing \$5.2 million.⁷ All respondents also made purchases from WMGC.

WMGC is a producer owned cooperative of growers in the Flathead, Jocko, Mission and Bitterroot Valleys of Montana. WMGC was established in 2003 and provides wholesale marketing and delivery services to its producer owned members (WMGC, 2022).

Of the \$5.2 million in local food expenditures that were derived from the survey effort, only 15% (\$83,000) was sourced through WMGC. WMGC shared their 2021 sales data with us both by client and by product category. In 2021 WMGC sold \$5.2 million in local food at the wholesale level.⁸ For estimating a value of local food across Montana, we extrapolate the total sales through WMGC (\$5.2 million) are likely 15% of their customer bases' total local food sales (as suggested from the 39 responses collected). In total, therefore, the WMGC customer base would have purchased \$34.7 million in local food at the wholesale level to a variety of intermediaries in the food value chain. We do not have sales data from other distributors of local food in Montana, including: QFD, Wild West, B&R Foods, Intermountain Produce, or Root Cellar Foods. These other local food distributors are described in greater detail in Appendix B. In addition, we recognize the responses collected indicate a high level of transactions between retailers (grocery and restaurant) and producers. With these factors in mind, we anticipate the local food sales outside of WMGC's customer base would amount to an additional 50% of local food sales, or an additional \$17.3 million in annual sales.

Institutions are a small portion of WMGC sales, accounting for around 2% of total sales (\$90,000) and no data on sales levels was collected by institutions in the interviews mentioned above. Thus, the extrapolation described above likely fails to account for local sales through institutions in the state. The two largest universities in the state (University of Montana and Montana State University) are the largest food service operators. The combined food budget for these Universities is around \$11 million total (\$8 million from MSU and \$3 million from UM) and each spends around 25% of their budget on local food sources (University of Montana, 2022; Montana State University, 2022). This would amount to \$3.5 million in local food sales from these two institutions alone. An additional \$400,000 is spent on Farm to School programs for K-12 in Montana (not including milk sales) (Montana Farm to School, 2020). Thus, for this analysis we assume \$4 million in local food sales outside of the extrapolation using WMGC sales data described above.

Therefore, the total value of local food sales, through intermediaries, and at the wholesale level is estimated at \$55.9 million for 2021.⁹ The total farm share value of this (including the processing costs) is estimated at \$42.5 million, and is based on a gross margin at the wholesale level of 24% (which represents a markup by a factor of 1.31) by the wholesaler / marketer (Western Montana Growers Cooperative, 2021). The estimate of farmgate value by product is provided in the summary Table 4

⁷ Many respondents were hesitant to provide the sales information and several respondents were not able to provide the sales level (total or local).

⁸ Not to be confused with the \$5.2 million in local food sales documented in the survey, this represents total sales by WMGC in 2021.

⁹ Food processors are not identified in this analysis separately. Food processing activity is expected to account for a small percentage of sales through intermediaries, and there is a lack of data on what percentage of the food expenditures may be coming from local (Montana) producers.

below. This level of sales is estimated to result in a retail value of approximately \$117.8 million in total. This estimate of retail value was derived using a total markup factor of 2.11 from wholesale prices, and is based on the following assumptions:

- Restaurant and institution food price is 300% of the wholesale cost (what the distributor sells it to the restaurant for) (BNG Point of Sale, 2021). Further, it was assumed this category accounts for 1/3 of local food sales through intermediaries.¹⁰
- Grocery retail food price is 166% of the wholesale cost. We recognize the markup on individual items can vary significantly across the spectrum of products at a grocery store. For this analysis we rely on these gross margins by food category: 35% for dry goods; 30% for milk, butter and eggs; 50% for fresh fruits and vegetables; and 60% for prepared foods (Campbell, 2019). We use the breakdown of sales by product category from WMGC (Western Montana Growers, Cooperative 2021) to arrive at a weighted average gross margin of 39.7%, which represents a markup from wholesale costs of a factor of 1.66. Grocery sales are assumed to account for 2/3 of the local sales through intermediaries.^{11 12}

We use the sales percentages by product category, supplied by WMGC, to present the retail value of local food by product category, as presented in Table 4 below.

¹⁰ Equal to approximate ratio of restaurant and institution to grocery store sales by WMGC.

¹¹ Ibid...

¹² Gross Margin = (Retail Price – Unit Cost) / Retail Price x 100. Therefore, a gross margin of 39.7% = ((1.65 retail price – 1 unit cost) / 1.65 retail price) x 100 or a markup of 1.65

Table 4. Estimated 'Retail' Value of Local Food through Intermediary Channels in Montana, by Product Category

	Sales (% of total)	Sales (\$)
Cereal Grains, Legumes	1.0%	\$1,178,000
Meat Animal + Producer Profit	11.5%	\$13,488,317
<i>Beef & Bison</i>	5.0%	\$5,919,268
<i>Pork</i>	1.7%	\$2,004,985
<i>Chicken</i>	0.8%	\$982,957
<i>Lamb</i>	0.5%	\$643,955
<i>Other (Emu, rabbit, etc)</i>	0.2%	\$278,594
<i>Meat Processing + Packaging</i>	3.1%	\$3,658,557
Eggs	16.8%	\$19,775,663
Dairy Products	27.3%	\$32,135,453
<i>Fluid Milk & milk for cheese</i>	21.8%	\$25,708,362
<i>Cheese processing / packing</i>	5.5%	\$6,427,091
Vegetables	30.1%	\$35,511,900
Fruit	9.0%	\$10,601,321
Other Dry Goods (oil, honey, sauces)	4.3%	\$5,109,347
Total		\$117,800,000

Source: Highland Economics Analysis, (Western Montana Growers Cooperative, 2021)

Table 5 below demonstrates the markup by step as one dollar of farmgate food (in aggregate, not any specific category) moves through the local value chain in Montana.

Table 5. Markup by Step Along the Local Food Value Chain, Montana, 2021

	Dollar	% of Retail
Farmgate Sale	\$1.00	36%
Wholesale Sale	\$1.32	47%
Retail Sale	\$2.77	100%

Sources: (Western Montana Growers Cooperative, 2021) and Highland Economics Analysis

As indicated above, the estimate of local farm's share of the retail value of food (36%) is significantly higher than the national average (16%, or more than double). While this indicates a higher portion of the total food expenditure is going to the local food producer, and staying in the local community, it is not an indication that the local food producer is more profitable or better off than those participating in the conventional, large scale food value chains.

For farmers selling through short farm supply chains (SFSC) specifically, internalizing the processing and marketing activities may increase costs associated with skills' development and additional labor requirements (L. Cesaro, 2020). The literature reports mixed effects of participation in SFSC on farmers' economic performance. While (Chen, 2019) finds the effect of SFSC participation on gross farm income in the USA to be insignificant, (Park, 2018) et al report that US farmers who participate in SFSC experience substantial declines in gross farm income compared to farmers who do not engage in any type of direct marketing. Several studies find that even when a higher price is obtained in SFSC, there is no significant impact on overall economic performance (Izumi, 2010; A. Malak-Rawlikowska, 2019; Zwart, 2020).

2.1.2 Direct-to-Consumer

In addition to food delivered through intermediaries there is a growing market in direct-to-consumer sales across Montana. The 2016 Ag Census reported on direct-to-consumer sales of food, specific to the State of Montana. The statistic reported by NASS at that time was \$9.8 million in direct-to-consumer sales across Montana (USDA Ag Census, 2016), and with this activity concentrated in more populated areas of the state.

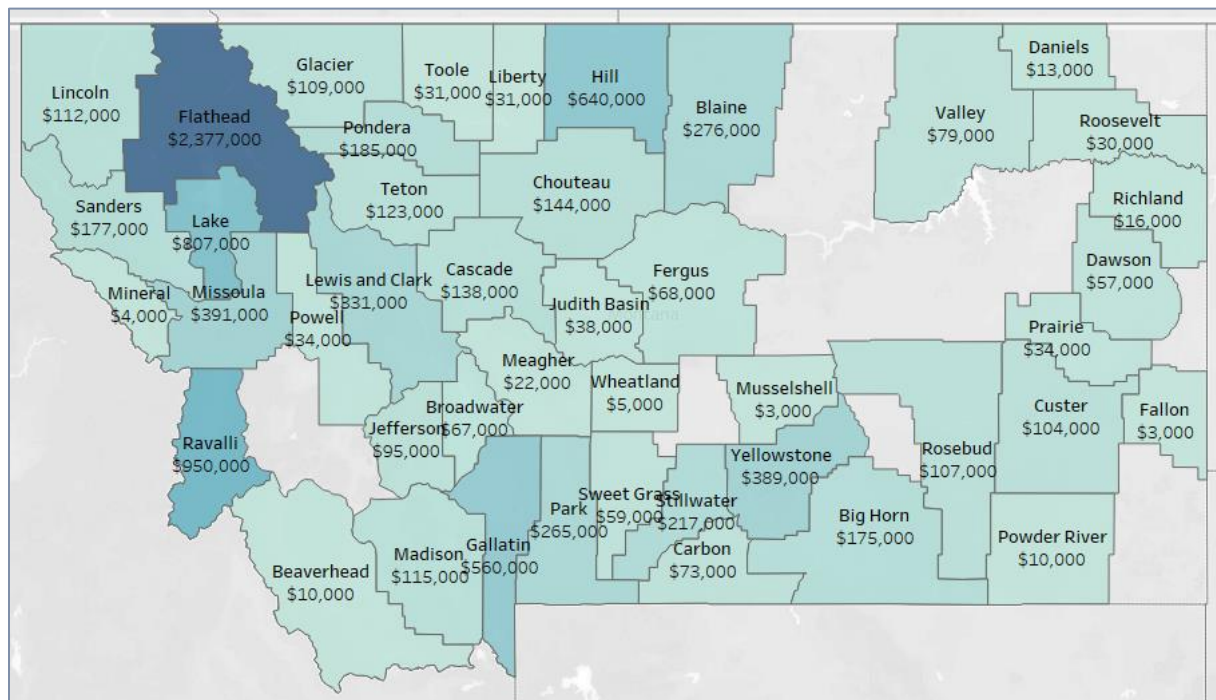


Figure 4. Direct to Consumer Sales by County, Montana, 2016

Sources: (USDA 2016, Ag Census) and Highland Economics Analysis

Most people associate farmers markets with direct-to-consumer sales, but the data reported by NASS in 2016 suggests that farmer market sales only account for 18% of total direct to consumer sales of food. The table below presents the breakdown of direct-to-consumer activity by percentage of sales (from 2016 Census of Agriculture).

Table 6. Direct-to-Consumer Sales, by Activity, Montana

Activity	% of Sales
On Farm Store / Roadstand	38
Farmers Market	18
Other (u-pick, mobile market, etc.)	17
Off Farm Store / Roadstand	13
Community Supported Agriculture (CSA)	8
Online	6

Source: (USDA 2016 Ag Census)

As indicated above the on-farm store and roadside stand account for nearly 40% of direct-to-consumer sales in the state during 2016, amounting to \$3.7 million that year. In Montana there is no official count of road stands but they are frequently seen when driving through the state, especially in populated areas that contain pockets of agriculture or large garden space, and along roads frequented by tourists (e.g., orchard farm stands on the main routes to Glacier National Park).

The popularity of direct-to-consumer channels during the pandemic (after these figures were reported) increased. There are no official data released on the rise of direct to consumer sales during the pandemic, but articles published on the topic suggest the popularity of CSA programs, in particular, went up substantially, suggesting 50% or higher growth across the sector from the previous year and this trend is not expected to decline any time soon (Shirvell, 2021; Westervelt, 2020; Ricker, 2020). The reasons for this lasting trend are because employment with work-from-home flexibility has largely continued, which leads to more meals at home, and consumers are choosing CSA for the convenience (delivered in weekly boxes) and quality (which tends to be fresh picked and local) (Shirvell, 2021). In Missoula, Harlequin Farms (one of, if not the largest fresh vegetable producer in the area) transitioned from having a weekly booth at the Clark Fork River Farmers Market to focusing only on their CSA program and wholesale accounts (through WMGC). They sold out their 500-share program the year they decided to not attend the farmers market (2021) and did so again this year (2022) (Graf, 2022). Another large CSA program is operated by the Western Montana Growers Cooperative. In 2022 they offered 530 shares, a 6% increase from the previous year (2021) and sold out of shares in mid-April, six weeks prior to the first delivery of CSA boxes (Lee, 2022).

In 2021 the Bureau of Business and Economic Research (BBER) of the University of Montana conducted a statewide study of farmers markets, summarizing the economic impact of farmers market across the state. The BBER study is the most comprehensive evaluation of sales at farmers markets since the 2016 Ag Census, which reported a total of \$1.76 million in food sales across the state (USDA Ag Census, 2016). The BBER study involved in-person market visits at 12 farmers markets, and interviews with 47 market managers. The finding of this data collection is total statewide spending at farmers markets was \$17.3 million in 2021, a breakdown of the revenue by product is identified in the table below.

Table 7. Revenue by Product, BBER Findings, Farmers Markets Across Montana, 2021

Product	Revenue
Produce*	\$5,700,000
Crafts	\$5,000,000
Bakery	\$2,140,000
Processed and Packaged Food or Beverage**	\$1,200,000
Meat*	\$1,100,000
Hot or cold food or beverage served on site	\$1,000,000
Honey*	\$270,000
Floral	\$200,000
Health or beauty	\$170,000
Live plants	\$60,000
Eggs*	\$20,000
Market Administration	\$440,000
Total	\$17,300,000

* Treated as 'local food' in this study

** A portion of this category is treated as 'local food' in this study

Source: (BBER 2022)

Of the revenue identified by BBER, we estimate that \$7.69 million would classify as local food. This represents the categories of produce, meat, eggs, honey, and half of the revenue identified for processed products. It is unclear what portion of the processed and packaged products would be produced in Montana, as farmer market regulations vary by location. It is likely that a large portion of this category would include processed cheese from local dairies (e.g., Lifeline Dairy, Tucker Farm, Amaltheia, and others). For purposes of this analysis, we assume half of the 'processed and packaged food' category would meet the definition of local food used in this study.

This estimate would represent a 336% increase from the farmers market sales across Montana reported by NASS data from 2016 (\$1.76 million); or roughly 67% annually over five years. As mentioned above, farmers market sales were only reported to be 18% of total direct to consumer sales in the 2016 Ag Census. Given the dramatic rise in popularity of CSA programs it is reasonable to expect that all direct-to-consumer sales have increased at a similar rate. Thus, we can extrapolate the total direct to consumer sales in Montana during 2021 using the farmer market sales provided by BBER. With this approach we find that total direct to consumer sales of local food across the state amounted to \$42.7 million, as outlined in the table below, by direct-to-consumer activity.

Table 8. Estimated Direct-to-Consumer Sales, Montana by Activity, 2021

Activity	Sales (\$)
On Farm Store / Road Stand	\$16,234,000
Farmers Market	\$7,690,000
Other (informal transactions)	\$7,263,000
Off Farm Store / Road Stand	\$5,554,000
Community Supported Agriculture	\$3,418,000
Online	\$2,563,000
Total	\$42,722,000

Sources: (BBER, 2022) (USDA Ag Census, 2016), and Highland Economics Analysis

2.1.3 Total Value of Local Food

When we combine the local food sales through intermediaries and direct to consumer chains, we find that the total sales of local food in Montana, at the farm gate, during 2021 amounted to approximately \$77.2 million. Intermediary channels accounted for 47% of local food sales, while direct to consumer activity accounted for 53%, as depicted in the table below. In addition, the sales of meat and cheese would require processing activities of an additional \$8 million, including \$3.8 million in meat processing and \$4.2 million in dairy processing. These were estimated based on custom kill and processing costs for various types of livestock at plants in Montana, which wound up as 27% of the total revenue received for meat products by the farm.¹³ Cheese processing was further estimated at 20% of sales of local food based on enterprise costs of artisan cheese processing.¹⁴

Table 9. Local Food Sales Estimate, Montana Total, 2021

Product	Intermediary Channels	Direct-to-Consumer	Total
Grain farming	\$400,000	\$0	\$400,000
Vegetable farming	\$11,500,000	\$23,800,000	\$35,200,000
Fruit farming	\$3,400,000	\$7,900,000	\$11,300,000
Beef cattle ranching and farming	\$1,800,000	\$2,700,000	\$4,400,000
Dairy cattle and milk production	\$8,900,000	\$1,300,000	\$10,200,000
Poultry and egg production	\$8,100,000	\$600,000	\$8,700,000
Other animal production	\$2,500,000	\$4,500,000	\$7,000,000
Total Farmgate Value	\$36,500,000	\$40,700,000	\$77,200,000
Animal Processing	\$2,200,000	\$1,700,000	\$3,800,000
Cheese Manufacturing	\$3,800,000	\$300,000	\$4,200,000
Total Processing Sector	\$6,000,000	\$2,000,000	\$8,000,000
Total Farmgate and Processing Sector Combined	\$42,500,000	\$42,700,000	\$85,200,000

The total value of the farmgate and processing sector combined associated with local food in Montana amounts to \$85.2 million, with roughly half of the activity supported by intermediaries and half in the direct-to-consumer channels. This level of production amounts to 2.3% of the total value of agriculture products produced at the farmgate level.¹⁵ This is slightly lower than the latest published statistics at the national level, which indicate sales of local edible farm products made up 3% of all agricultural sales across the country (S. Martinez 2021). While lower than the national average, this level of production would represent a 450% increase from the 2016 estimates of local and regional food identified in the 2016 Agriculture Census.

¹³ Specifically: custom kill and processing was estimated at \$1.72 per pound of finished beef / bison, \$1.93 per finished pound for pork and lamb, and \$9 for every bird (worth \$20) in poultry.

¹⁴ Based on the ratio of processing operation cost to finished good sale per (Bouma, 2013).

¹⁵ \$85.2 million in local food sales compared to \$3.7 billion of total agricultural products sold across the state (USDA Ag Census, 2016) (referred to in the introduction section).

This level of farmgate production travels through the food value chains and amounts to consumer spending at the retail level of approximately \$158.5 million as depicted in the figure below. At this level of retail sales, local food accounts for 3.0% of total food consumed in the State of Montana. To put this into perspective, the total food spending by US consumers, businesses and government entities totaled \$1.7 trillion in 2020 (Economic Research Service, 2021), whereas the latest estimate of local and regional food nationally was estimated at \$12 billion (S. Martinez, 2021), representing only 0.7% of total food purchases nationally.

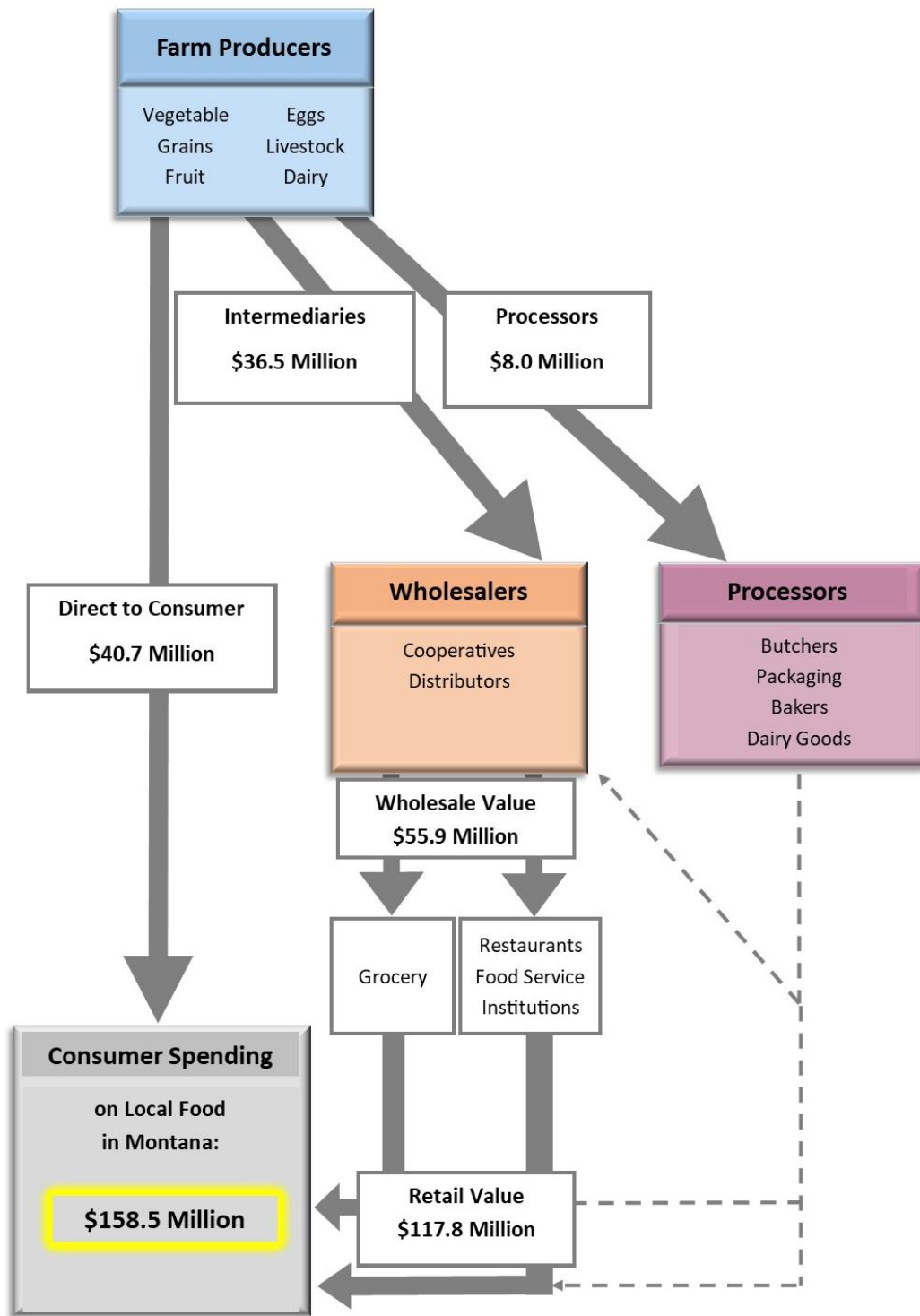


Figure 5. Value of Local Food Transactions by Channel, Montana, 2021

Source: Highland Economics Analysis

3 FARM & COMMUNITY ECONOMICS

This section explores some of the economic factors associated with producers and consumers participating in short food supply chains across Montana.

3.1 ECONOMIC BENEFITS TO PRODUCERS

As suggested above, producers participating in local food systems generally experience higher price points for their agricultural products. However, this comes with additional costs in marketing, and likely is done at scales smaller than the long chain food supply systems. Thus, it is uncertain if producers in the local food value chain are better off than producers in long chain supply chains.

There are a few economic theories that help explain why farmers may (or may not) economically gain from selling local food, including:

Principal Agent Theory: Agents or actors in the supply chain can increase bargaining power by reducing their dependence on others (Ruben, 2007). In local food systems farmers have more power (relative to long food supply chain systems) because they can set prices in a direct to consumer transaction, and diversifying their marketing and distribution strategy (participate in both direct to consumer and wholesale activities), thereby capturing premium market prices for specialty or niche products while also reducing risk associated with the dependence on a single channel (Enthoven 2021). A phone survey of California producers in 2002 found that local food markets are particularly important to small and medium sized farms, because of less size and capital requirements compared to more conventional markets. This is because family farms can participate in local food markets and have higher profit per unit of production and avoid the necessity to scale up their operations to be profitable. In the California survey, 63% of farmers reported higher per unit profit margins from direct market sales versus conventional marketing channels; the mean reported increase in net profit was 65% (Kambara, 2002). Direct marketing can be particularly important for new farmers, as the threshold of sales volume required for farmers market and other DM channels is usually lower than for other marketing methods (Hardesty, 2009).

Transaction Cost Theory: Transaction costs are costs of making a transaction, including the cost of planning, deciding, resolving disputes, and after-sales. In short, the concept with this theory is that that low transaction costs can boost economic growth. However, transaction costs of local food transactions tend to be particularly high, especially in direct-to-consumer channels where many individual transactions are required. In contrast, institutional or retailer transactions involve much larger volumes at once and have a much lower cost per transaction, which increases efficiencies and keeps prices lower (Roest, 2018; Enthoven, 2021).

Capability Theory of the Firm: The basic argument is that firms differentiate themselves through learning, innovation and decision making. In short, firms are differentiated by their capabilities. A literature review on firm capabilities and learning in regard to food supply chains, suggests that developing the capability to engage in specific supply chain activities effectively may be highly difficult and time-consuming (Gereffi, 2005; Enthoven, 2021).

For farmers selling through short farm supply chains (SFSC) specifically, internalizing the processing and marketing activities may increase costs associated with skills development and additional labor requirements (L. Cesaro, 2020). The literature reports mixed effects of participation in SFSC on farmers' economic performance. While (Chen, 2019) finds the effect of SFSC participation on gross farm income in the USA to be insignificant, (Park et al., 2018) report that US farmers who participate in SFSC experience substantial declines in gross farm income compared to farmers who do not engage in any type of direct marketing. Several studies find that even when a higher price is obtained in SFSC, there is no significant impact on overall economic performance (Izumi, 2010; A. Malak-Rawlikowska, 2019; Zwart 2020).

3.2 CONSUMER DEMAND AND WILLINGNESS TO PAY

Consumer surplus is the difference between the highest price a consumer would be willing to pay for something (in this case local food) and the price that the consumer actually paid. Stated differently, consumer surplus is the benefit consumers feel when buying something at a lower price than expected. Producer surplus represents the difference between the price a seller receives and their willingness to sell for each quantity.

Evidence from literature demonstrates that consumers are willing to pay a premium for local over non-local food. In some cases this premium was shown to be higher than organic or other sustainability certifications (Enthoven, 2021; Garcia, 2014; Hempel, 2016; Grebitus 2018). This is evident by visiting the farmers markets in Montana when a new crop has come on, especially fruit crops like strawberries. Producers at the farmers market will charge two to three times the retail price at the local grocer, but still sell out of their supply before noon.¹⁶ This indicates strong demand for a product that could be substituted for non-local strawberries from the grocery store.

Willingness to pay is shown to vary with consumers' demographic characteristics, socio-economic condition, connection between the household and the farm producing the food, among others. Most studies indicate that women, older aged, wealthier people, with ties to agriculture and a supportive behavior toward environmentally friendly practices (including organic) are willing to pay the highest premiums (Enthoven, 2021; Hempel, 2016; D.B. Willis, 2016; Brown, 2003; Y. Onozaka, 2011).

In addition to consumer's willingness to pay, consumers are increasingly seeking local products for a wide variety of reasons. The consumer survey conducted as part of this analysis identified the most common reason for local food purchases is supporting local farms, followed by taste / quality preference, and then environmental reasons, as depicted in survey response graph below.

¹⁶ Based on personal experience at the Clark Fork River Farmers Market

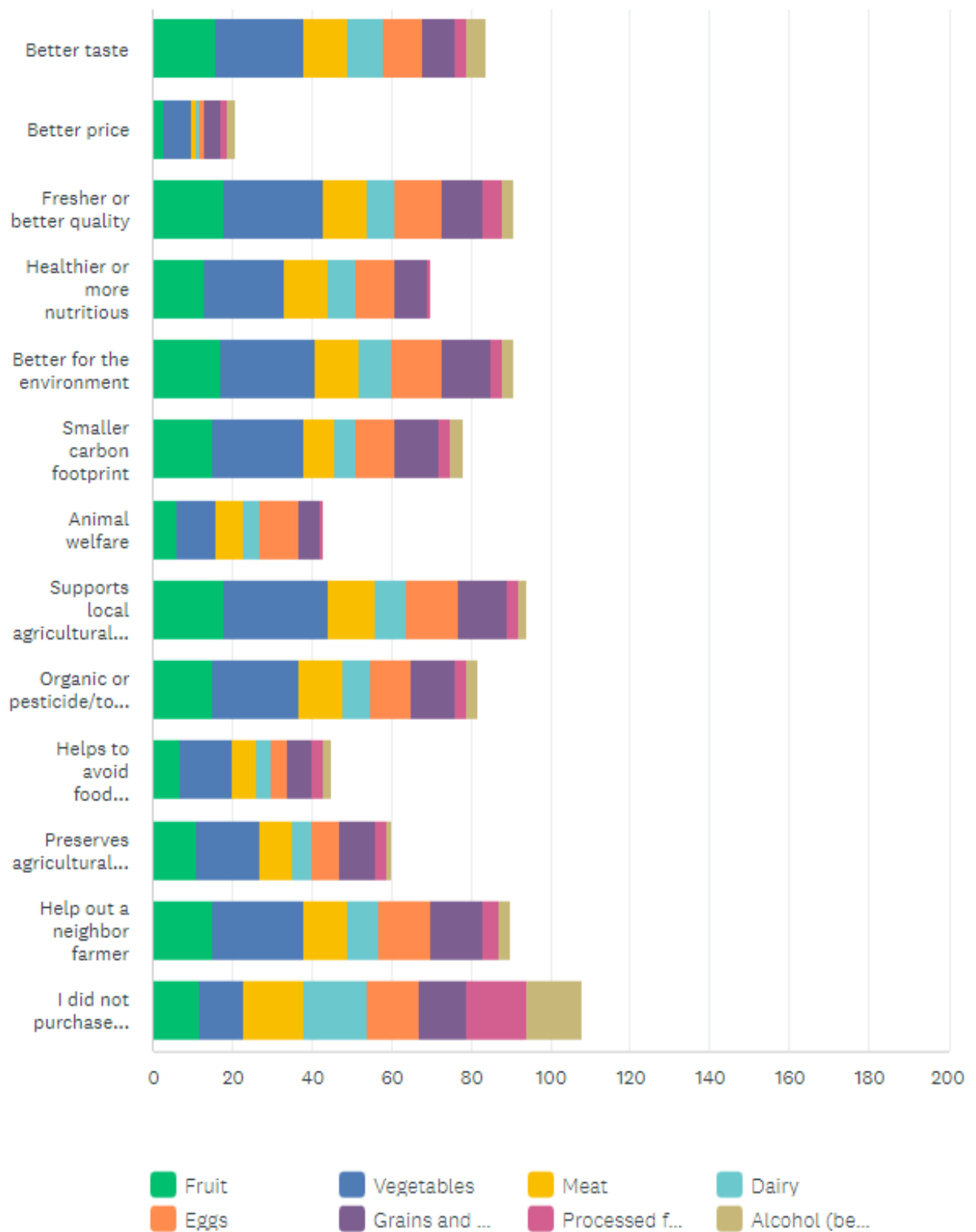


Figure 6. Primary Attributes of Local Food Decisions, Consumer Survey

Source: Highland Economics Analysis, Appendix A

3.3 LOCAL ECONOMIC IMPACTS

One of the often-cited benefits of local food is the retention of local money. The economic impacts of local food can be felt in many ways, including:

- Spill-over effect where local food events (e.g., farmers markets) attract buyers into an area they would not otherwise visit, and this results in additional money spent in the local area (Kneafsey, 2013; S. a. Martinez, 2010). This spending may not be additional but rather redirected from another sector.
- Non-agricultural production activities such as agritourism are often associated with local food systems, contributing to the economic development of rural areas by providing additional revenues to producers. Further, value-added processing of regionally produced food also boosts local economic growth (Hughes, 2015).
- Jobs and income supported by local food value chains. Most studies that measure impact of local food systems on local economies use input-output models, allowing for the analysis of interdependencies between different economic sectors of a region. However, most studies do not consider what activities would still exist without the local food production and rather report on total output supported by the local food system. Instead, the approach we've taken here is to quantify the local food production and processing that occurs in the state that would not have if not for the local food production and consumption occurring in the state. By limiting the scope to these activities, we are capturing the impact of local food systems instead of attempting to tally all economic activity associated with all phases of the food chain in Montana.

The remainder of this section describes the economic impacts of farm production and related processing occurring in the State of Montana that is consumed in Montana; nearly all of this agricultural production is marketed as locally grown in Montana. The economic impacts are based on our estimate of the size of the local food market in Montana, which in turn is estimated based on our analysis of the value of local food marketed through the pathways described above. There is uncertainty in the estimate provided above, as it largely relies on data for WMGC and farmers markets, then extrapolates that to a statewide value. Through the extrapolation process we may have unintentionally under- or over-counted sales of local food.

For each of these pathways, production value can be measured at different points in the supply chain, including at the farmgate level (value of the agricultural products as they leave the farm) and the final retail level (the higher value paid by the final consumer, which includes not just the farmgate value but also the costs to process or package as necessary, transport, store, market, and sell the products). This analysis focuses solely on the economic impacts of farm production and associated processing (such as processing locally grown animals into meat products or cheese making of locally produced dairy). The analysis conservatively assumes that the other steps in the local food value chain, such as transporting, storing, marketing, and retailing food products would occur in the state even with no local food production (i.e., food would be shipped into the state, and then there would still be economic activity in the state associated with transporting, storing, marketing, and retailing the imported food). This approach likely underestimates the economic impact of the local food economy as the transporting, storing, etc. of agricultural products from out of state may support less employment in Montana than locally grown products.

We use a 2018 IMPLAN model of the Montana State economy to estimate total economic impacts of the values summarized in Table 9. Total economic impacts include:

- **Direct** impacts in the farm sector and animal/dairy milk processing sectors
- **Indirect** impacts in sectors selling inputs to the farm and processing sectors (such as equipment dealers, seed suppliers, fuel and utilities, etc.)
- **Induced** impacts in retail and service sectors benefitting from the spending of wages by farm and other (indirectly affected) employees

Our estimates of total income and employment supported statewide by agricultural products produced for local, in-state consumption are presented in Table 10. These results can be interpreted as a rough estimate of the total employment and income in all sectors of the Montana State economy that are supported by Montana agricultural production and processing that is locally marketed for in-state consumption. For the estimated level of local food production, we expect that this is a conservative estimate of statewide economic impact. Our analysis uses statewide economic data on the Montana employment and income that is supported by each sector of Montana farm and food processing output, including all small and large farms in the state. Much of Montana's local food production is from small farms, which may be more labor intensive than large farms even within a given sector such as vegetable production. As such, within the local food economy we expect that more jobs and labor income are likely supported for a given level of production value. Our estimates of the total Montana jobs and labor income for the production values in **Error! Reference source not found.** are therefore likely underestimates.

Table 10. Estimated Economic Impacts in Montana of Agricultural Production and Associated Processing for In-State Consumption

Impact Type	Employment	Labor Income
Direct Effect (Farm and Processing Sectors)	620	\$12,300,000
Indirect Effect	340	\$13,400,000
Induced Effect	140	\$6,200,000
Total Effect	1,110	\$31,900,000

Source: Highland Economics Analysis, IMPLAN

4 OTHER BENEFITS OF LOCAL FOOD IN MONTANA

The benefits of local food vary depending on the circumstances and practices of every step in its production and consumption from the farming practices used to grow it, to the transportation methods used to move it, to the marketing channel used to reach the consumer. While not all local foods have the same benefits, there are some common benefits that many local food products and markets share. This section summarizes the available literature on these benefits, including those related to health, social connections, environmental quality, rural economic opportunity, and land preservation. Benefits that local food consumers cite time and again in surveys, include: quality/freshness of food, supporting the local economy and local farms, knowing where their food comes from, and supporting environmental sustainability, and specific growing practices of local produces (see for example: (Food Marketing Institute,2009; Thilmany et al., 2008; Blitstein et al., 2012; U.S. Department of Agriculture

Economic Research Service, 2010)). This section provides a summary of the research on these types of benefits.

4.1 HEALTH & NUTRITION

Local food can affect health and nutrition in several ways, including 1) providing fresher foods that retain more nutrients, and 2) increasing consumption of nutritious foods such as fruits and vegetables by providing more appealing/higher quality options. On the first point, freshly harvested fruits and vegetables often retain more nutrients than less fresh foods (Edwards-Jones, 2010; Favell, 1998), and there is the opportunity for very short travel distances and time from harvest to consumption with locally grown foods. However, the proximity of production is only one factor that determines product freshness or retention of nutrients, and studies are currently lacking to demonstrate a strong link between local food and nutrient quality (similarly, studies are lacking that demonstrate a strong link between local food and food security and access). On the second point, regarding the amount of healthy food consumption, there is some evidence that availability of local foods may increase consumption of nutritious foods such as fruits and vegetables because consumers perceive local produce to be of high quality.

Fruits and vegetables are a large component of the Montana local food market (see Table 10 above), and increased consumption of fruits and vegetables consumption is closely tied to good health outcomes. Consumer perception of quality is a key factor in consumption of fruits and vegetables. Studies indicate that consumer perceptions of fruit and vegetable quality are positively correlated to their consumption (see for example (Zenk et al., 2005; Glanz et al., 199; Blitstein et al., 2012). Studies also overwhelmingly indicate that consumers perceive locally grown foods, particularly produce, to be fresher and of higher quality than other foods (U.S. Department of Agriculture Economic Research Service, 2010).

One recent study of low-income Chicago residents found that consumers who strongly felt they had access to high quality fruits and vegetables were 4.4 times more likely to eat 3 or more servings of fruits and vegetables daily (Blitstein et al., 2012). Eating more fruits and vegetables was also highly correlated with shopping at a farmers market or a local food cooperative, with respondents shopping at these locations 2.8 times more likely to eat three or more servings of fruits and vegetables daily. In sum, this study indicates that people eat more fruits and vegetables when they perceive that it is of high quality, and people generally perceive locally grown produce as higher quality produce. Similarly, a survey in Santa Clara County in California found that a majority of people purchasing local foods reported an increase in quantity of produce consumed, dietary diversity, and encouraging family members to eat more produce.

These findings indicate that increased offering of local food, particularly produce, may have significant health benefits. This may be particularly true in rural areas. Noting that access to healthy food is key to preventing nutrition-related chronic disease and obesity, and that rural populations are disproportionately affected by these afflictions, researchers at Montana State University have conducted several studies comparing the availability, price, and quality of fruits and vegetables at rural and less rural grocery stores across Montana counties (Shanks et al., 2015; Ahmed et al., 2018). The studies concluded that grocery stores in more rural areas had significantly lower quality and desirability of fruits and vegetables (although not different price or availability). Montana adults consume a daily

median of 1 fruit serving and 1.6 vegetable servings (significantly less than the recommended 5 servings a day), and rural adults consume even less fruits and vegetables than urban Montana adults (Shanks et al., 2015). As eating fruits and vegetables is associated with better health, and consumption of fruits and vegetables increases with consumer perception of fruit and vegetable quality, the studies recommended finding solutions for improving the quality of fruits and vegetables available to consumers, including strategies that are tailored to rural areas (Shanks et al., 2015).

4.2 AGRICULTURAL LAND PRESERVATION

Including both direct-to-consumer (DTC) and intermediated sales, across the nation, much local food is produced on small farms near metropolitan areas (American Farmland Trust, 2020). As these are the farmlands that are likely most at risk of development; by providing a market for these farms' production, local food can help support preservation of agricultural land near urban areas. Between 2001 and 2016, 96,000 acres of Montana farmland was converted for residential development, primarily for low density rural development (American Farmland Trust, 2020). Of this farmland, 66%, or 62,900 acres, were Nationally Significant farmland, which has "excellent productivity, versatility, and resiliency, is best suited to intensive food and other crop production, with few environmental limitations" (American Farmland Trust, 2020). While Nationally Significant land comprises less than 25% of total agricultural land base in Montana, it was roughly twice as likely to be converted as other farmland, typically because it was concentrated near growing cities. Across all states in the Nation, Montana has one of the highest ratios of Nationally Significant farmland that is developed relative to other types of developed farmland. Local food, with its importance for many small farms, may play a role in preserving this farmland.

4.3 SOCIAL CONNECTIONS

Many direct-to-consumer local food markets, such as farmers markets and CSA pick up locations, are a site of regular social gathering, where people not only come to shop, but also to be with friends and neighbors, listen to music, and get prepared food to eat. As noted in one publication, "farmers markets are social events that build, support, and link urban and rural communities by fostering economic opportunities, creating public space, and vitalizing neighborhoods" (Warsaw et al., 2021). Relative to other food shopping experiences, shopping at local food venues and interactions at these venues are more embedded in social ties, familiarity, and shared values (Warsaw et al., 2021).

A 2021 Harvard report titled "Loneliness in America: How the Pandemic has Deepened an Epidemic of Loneliness and What We Can Do About It" estimates that 36% of all Americans in the fall of 2020 felt "serious loneliness" (defined as feeling lonely frequently or almost all the time in the four weeks preceding the survey) while an additional 37% were estimated to feel lonely occasionally (Weissbourd et al., 2021). The report estimates that even prior to the COVID-19 pandemic, approximately 25% of Americans felt serious loneliness. Loneliness comes with high costs: including premature death and diverse physical and emotional problems, including heart disease, depression, anxiety, substance abuse, and domestic abuse. Among other recommendations, the report noted the importance of building "social infrastructure at every level of government and in our communities", which includes "reimagining and reweaving our social relationships." Local food systems can help to build social relationships and community. For example, as identified in (Moore, 2015; Perez, 2004; Obach and Tobin, 2014) farmers markets and other local food market channels can:

- Provide a “third space” outside of home and work where people can gather and interact with others to build community and socially connect.
- Foster social interactions between diverse community members and build bridges in divided communities.
- Facilitate conversation between farmers and consumers, where people can talk with producers about their farms, the land, and production practices. Consumers are able to ask questions and hear stories about the food they buy, and farmers have the opportunity to get direct feedback about their products. These social interactions can result in more awareness and understanding of their food and how and where it was produced. Also, by creating an ongoing conversation about food, communities can build a sense of locality and identity.

4.4 SENSE OF PLACE & HERITAGE

While there is no one standard definition of sense of place, the concept encompasses how we feel about and respond to a place. Sense of place can have multiple dimensions and be characterized between different types of bonds between an individual or community and a place, including historical/familial, emotional, moral/ethical, mythical, cognitive, and material bonds (Cross, 2001). Several studies have found that participating in local food systems increases people’s community attachment and sense of place (Brandenburg and Carroll, 1995; Delind, 2006; Feagan, 2007; Shifren et al., 2017; Moore, 2015). These studies have found that local food systems can help people establish a sense of place and identify that has special meaning by:

- Connecting people with the land and the seasons
- Providing local foods that are unique or have special significance to the region
- Fostering community and social relationships, which are vital to establishing and maintaining a sense of place
- Developing shared meaning and value through food purchased and eaten in familiar or meaningful locales
- Enhancing pride and feelings of trust and connection in your region and home
- Enabling conversations about food and increasing awareness and knowledge about agricultural production and land stewardship, which can foster a sense of locality and identity

Sense of place is often an emotional connection and a sense of identity, and these emotional and cultural components of local food systems that strengthen sense of place can be both strong motivators of and benefits from participation in local food systems.

4.4.1 Case Study – Western Montana Growers Cooperative (WMGC)

WMGC has created a vibrant model that focuses on a more triple bottom line approach that builds the natural, social, and cultural capital of its organization and community. A study involving interviews of WMGC members in 2013 found that 9 of the 15 members interviewed described the member community as a key benefit of WMGC. Several members interviewed mentioned that the Cooperative fits with their values of supporting a local food system, indicating that a benefit of membership for them is not only financial but also values-based (Hassanein, 2013).

4.5 ENVIRONMENTAL

A U.S. Department of Agriculture review of local food systems notes that farmers who engage in direct marketing are more likely to use environmentally friendly production practices (U.S. Department of Agriculture Economic Research Service, 2010). These practices may include organic production, biodynamic production, or pesticide free production. These types of production practices may improve environmental conditions. For example, a study of farms supplying restaurants in Colorado found that farms that were smaller, more diverse, and placed greater importance on environmentally friendly production practices were more likely to be involved in local food systems and direct marketing to consumers (Starr et al., 2003). Similar characteristics of direct market farmers was found in a survey of Virginia fruit and specialty market producers (Monson et al., 2008). Environmentally friendly production practices can reduce pollutants from agriculture that may contaminate air and water resources, and in turn provide benefits to the health and well-being of nearby communities as well as protect biological resources such as pollinators, plants, fish, and wildlife. As noted above, local food may also support farmland preservation, particularly near urban areas, which also may have environmental and aesthetic benefits for communities associated with proximate greenspace and farm landscapes.

One environmental benefit often cited in association with local food is a reduction in energy use and greenhouse gas emissions associated with reduced transportation distances. While local foods may reduce the total transportation emissions, recent studies of energy use and food production location do not indicate that local foods represent a significant change in total energy used to get food to the final consumer. Although distance and transportation mode are important factors affecting energy use in transportation, transportation from producer to retail often accounts for a small share of total energy use in the food system (4% on average in the United States according to one study of greenhouse gas production in the US food system (Weber and Matthews, 2008)). One study of the American food system notes that the type of food consumed (i.e., dietary choices) is much more important than the location of production from a greenhouse gas production perspective (Weber and Matthews, 2008), while other studies note that the production practices, crop yields, fertilizer use, and other aspects in the food supply chain are all important in the total energy footprint of food production and consumption (U.S. Department of Agriculture Economic Research Service, 2010).

4.5.1 Case Study – Timeless Seed

Dave Oien started Timeless Seeds in 1987 as an antidote to modern monoculture, high chemical input grain farming. He and his three partners grew nitrogen fixing legumes to restore ecological health to the soil thereby creating natural capital. They first started growing organic lentils, then added more varieties of complimentary grains and legumes to their rotation schedules. This approach grew their natural capital as they improved the soil, eliminated pesticides, conserved water, reduced soil erosion and improved wildlife habitat.

As their markets grew, Timeless Seeds added more growers to their operation. They viewed their company as a clearinghouse for information for their growers passing on best practices to each other. They hosted annual Field Days giving tours to all interested growers and buyers. This supportive network was invaluable in growing their network and adding to the knowledge base for organic growers.

This departure from the high input grain farming model showed other central Montana farmers an alternative that was profitable, built farmer connectivity and enhanced communities all while improving

the environment. Over time fifty Montana grain producers switched to growing organic lentils with Timeless Seeds. By 2015 over half of the lentils grown in the United States were organically grown by Timeless Seeds. The products created by Timeless Seed would not be considered 'local' in this analysis, as most of what they produce is consumed out of state. However, we include this case study here because the market size achieved has largely been due to the natural / environmental, and social aspects of the business they have built over the thirty-year business history.

5 OPPORTUNITIES & CONSTRAINTS

This section provides a broad level evaluation of market demand for general categories of food products across Montana. We use an import-substitution framework, which refers to substituting the food imported into the state with the same (or similar) locally produced food products. Information is presented to shed light on the supply and demand for locally produced foods, as well as highlight where gaps exist. These gaps are generally used to identify potential production or processing opportunities. In addition, we then attempt to identify the constraints, challenges, and external threats to these opportunities being developed in the current condition.

The following bullets summarize the major take-aways from this section:

- We estimate that Montana would need to produce an additional 29,245 acres of fruit and vegetables to fully substitute local production for food imported into the state. Constraints to satisfying this shortage include irrigation and water supply reliability, labor availability, investments in crop production, and investment in infrastructure.
- Given the increasing demand for local meat, the focus on reducing consolidation in the industry, and the production capacity of livestock producers in the state, there appears to be significant opportunities in local production and processing of meat in Montana. In the event that the 17 planned meat processing projects in the state were able to increase the state's capacity by 50%, this could generate an estimated \$23.6 to \$49.5 million annually in market value of meat products produced.
- Shortages in processing capacity and milk supply, along with a downward trend in fluid milk generally, stifle the opportunity for increasing locally produced milk. However, there are opportunities in specialty dairy product and artisanal cheese production identified.
- Eggs supplied across the state are roughly equivalent to the demand.
- Montana has strong production of grains and oilseeds, which could be used to supply niche food or specialty products if effective brands were established.

5.1 FRUIT & VEGETABLES

This study considers 34 crops in the fruit and vegetable category. Per-capita consumption values were compiled from Economic Research Service (ERS) data for recent consumption patterns across the country (Economic Research Service 2021).¹⁷ Applying these per-capita values to Montana's current population (1,104,271) provides an approximation of the quantity of fruits and vegetables (by food item)

¹⁷ Where per capita is broken down into multiple categories (e.g. fresh, processed and total) this analysis relied upon total per capita availability.

consumed across the state annually (US Census Bureau, 2021). Through this approach, we estimate that the state’s residents consume roughly 546.8 million pounds of fruits and vegetables. The estimate is provided (in pounds) by crop category, in the table below.

Table 11. Total Availability and Associated Demand by Key Fruit & Vegetable Crop, Montana

	Total Demand Estimate		Supply Requirement to Meet Demand		
	Per Capita Consumption (lbs)	Total Pounds Available	Yield Assumption	Units	Production Acreage Estimate
Apples	39	43,066,569	13	ton	1,656
Apricots	0.5	552,136	3.8	ton	73
Asparagus	1.9	2,098,115	35.7	cwt	588
Beans (snap)	5.3	5,852,636	80	cwt	732
Blueberries	2	2,208,542	3	ton	368
Broccoli	8.8	9,717,585	130.5	cwt	745
Cabbage	7.6	8,392,460	250	cwt	336
Cantaloupes	6	6,625,626	286.2	cwt	232
Carrots	10.7	11,815,700	400	cwt	295
Cauliflower	3.7	4,085,803	181.9	cwt	225
Cherries	2	2,208,542	2.9	ton	381
Cucumbers	10.5	11,594,846	140	cwt	41
Eggplant	0.96	1,060,100	165	cwt	3
Garlic	1.9	2,098,115	160	cwt	131
Grapes	41.6	45,937,674	4.8	ton	4,785
Greens / Collards	1.4	1,545,979	160	cwt	5
Lettuce (head)	12.7	14,024,242	336.9	cwt	416
Lettuce (leaf)	14.42	15,923,588	160	cwt	995
Nectarines	2.6	2,871,105	6	ton	239
Onions	22.3	24,625,243	500	cwt	493
Peaches	4.4	4,858,792	11.6	ton	209
Pears	4	4,417,084	6.3	ton	351
Peppers (bell and chile)	18.6	20,539,441	321.8	cwt	638
Plums	1	1,104,271	4.1	ton	135
Potatoes	119.1	131,518,676	438	cwt	3,003
Pumpkins	5.8	6,404,772	239.4	cwt	268
Radishes	0.76	839,246	300	cwt	28
Raspberries	10.25	11,318,778	6	ton	943
Spinach	1.8	1,987,688	165	cwt	120
Squash	5.9	6,515,199	163	cwt	400
Strawberries	8.1	8,944,595	3000	lbs	2,982
Sweet Corn	17.09	18,871,991	150	cwt	1,258
Tomatoes	87	96,071,577	12500	lbs	7,686
Watermelons	15.5	17,116,201	343.5	cwt	498
Total	495	546,812,914			31,256

The above table is not a comprehensive picture of the entire diet of fruits and vegetables of Montana residents, but the list of 34 key crops does capture most of the fruits and vegetables consumed. Further, all of these crops can be grown in Montana (or at least some portion of the state)¹⁸ and thus it is used here to gauge the potential opportunity associated with import substitution using locally produced foods. Yield estimates were derived mainly from national averages reported by NASS, and then modified downward where necessary to be representative of a reasonable approximation or typical yield of the crop in question.

From this analysis we can estimate that there would need to be 31,256 acres of fruits and vegetables produced in Montana to satisfy the entirety of demand for the 34 key food items in question. It is worth noting that for several of the less popular food items (e.g., eggplant and greens), statewide demand could be satisfied with a very small amount of production (3 to 5 acres each). However, the more popular foods, and crops common in processing (e.g., tomatoes and potatoes), would require thousands of acres each.

We compare this to the existing estimates of production (from NASS), by crop category, to gauge the land use transition that would need to occur to meet local demand, presented in the table below.

Table 12. Transition of Land Area Needed to Meet Demand Locally, Fruits and Vegetables

Crop Type	Current Production	Local Demand	Difference	% Change
Vegetables	721 ¹⁹	19,135	18,414	2,554
Orchard	1,181 ²⁰	3,044	1,863	158
Grape	57	4,785	4,728	8,295
Berries	52	4,293	4,241	8,155
Total	2,011	31,256	29,245	1,454

There are over 2 million acres of land irrigated in Montana. The transition of 29,245 acres would represent only a small fraction (1.5%) of the land base in current irrigated agriculture production. While this calculation would suggest the possibility of existing producers being able to supply this basket of food from the state's existing land base, there are many constraints to achieving a transition of this scale, including (but not limited to) the following:

- **Irrigation System and Water Supply Reliability:** Most of the land irrigated in Montana uses flood irrigation where furrows, borders, or dikes are used to inundate a field with water from a canal, ditch, or stream. While this method can be used to produce fruits and vegetables it is not as efficient as other systems such as sprinklers and drip irrigation. Transitioning the irrigation system would not only require a substantial investment but the water supply relied upon these

¹⁸ There are USDA hardiness zones from 3 (east) to 6 (west) across the state with several microclimates around lakes and rivers (particularly the Flathead Lake) that would accommodate production of all the crops identified here.

¹⁹ Equals the Ag Census reported value for vegetables (11,686) minus seed potato acreage (10,965). Montana supplies seed potatoes to commercial producers across the Northwest.

²⁰ Most of this land (over 700 acres) is sweet cherries produced around Flathead Lake. The vast majority of these cherries are hydrocooled at Finley Point; shipped to Selah, WA for packaging; and sold through a fruit broker under the label 'Northwest Cherries.'

flood irrigators tends to provide water on a schedule of every week to ten days from May through July, with high levels of uncertainty of water supply past this point in the growing season. As a result, most hay producers are only able to achieve up to two cuttings over the course of the growing season. This reliability of water supply would not be sufficient for most vegetable and fruit crops, as most would require a shorter duration between scheduled irrigation events, and a longer availability of water during the irrigation season. This is a generalization of the characteristics of existing irrigation conditions across the state and does not represent all situations.

- **Labor:** We estimate the transition to local food would require an additional labor force of over 29,000 people employed in short term, seasonal jobs.²¹ The unemployment rate in the state as of April of 2022 is 2.3%, which means there are only 13,000 people unemployed across the entire state (Bureau of Labor Statistics, 2022). Labor supply is a significant constraint for transition to high valued fruit and vegetable crops for producers in Montana. Further, the type of labor required in production of these crops is manual, seasonal in nature, and low in pay relative to other occupations. All of these factors would likely make it difficult to attract a labor force from other (existing) sectors in the economy or new entrants to the workforce. There are opportunities to satisfy labor force shortfalls with participation from immigrants (through H2A program), the incarcerated (Montana Department of Corrections Agriculture Program) (Montana Department of Corrections, 2022), and youth looking for summer work.
- **Investment in Crop Production:** The crops in question would require substantial investment from the producer of the crops in question. Western Agriculture Research Center (WARC) in Corvallis, Montana has published material on the establishment of orchards for fruit and berries. The estimated establishment costs for preparing the land, installing irrigation, exclusion fencing for livestock and wildlife, netting for birds, and buying the rootstock is estimated at more than \$10,000 per acre (Miller, 2022). Thus, over \$108 million would be needed for the investment of the orchard, grape and berry crops (10,832 acres) in the table above. Finding and acquiring the capital needed for establishment would likely be a constraint for production to proceed at the scale suggested in the table above.
- **Investment in Infrastructure:** In addition to the establishment costs of the production there would also be investment needed for the infrastructure to maintain the cold chain of the product through the value chain. This would require additional investment into infrastructure for cold storage, climate-controlled storage, distribution (e.g., loading docks, warehouses, and truck fleets) along with the system to manage the logistics of transporting the food from the producer to the consumer. Currently, the largest wholesaler and distributor of local (Montana produced) food (Western Montana Growers Cooperative) is operating beyond their capacity and seeking to expand. Through identifying alternatives for growth, they have discovered a shortage of cold storage (generally) across the state for existing production, let alone an expanded production scenario (Prather, 2021).

²¹ Conservatively estimates one job per acre of irrigated production additional needs beyond current type of land use.

5.2 MEAT

The COVID-19 pandemic has had a profound effect on the meat industry, both globally and in the U.S. When the initial shelter-in-place orders began in the spring of 2020, meat processing facilities began shutting down, severely curtailing the U.S. meat supply. Large sources of meat demand have been disrupted, including schools, hotels, and restaurants, and some producers cannot easily switch their operations to other supply chains where there was increased demand, such as grocery stores. In late April, President Trump invoked the Defense Production Act deeming meat processing plants essential and requiring them to remain open during the pandemic (Grylls, 2020). Because meat processing facilities are designed to have personnel working in close quarters, COVID infections spread widely in the industry. This led to labor shortages and decreased processing capacity domestically.

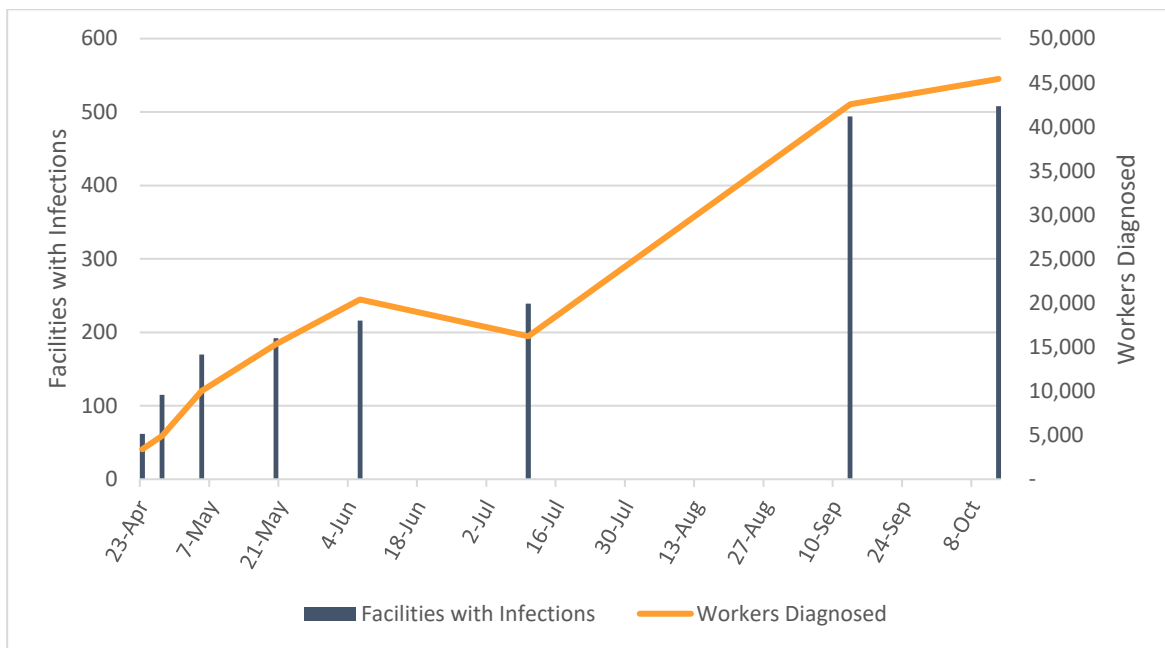


Figure 7. COVID-19 Cases in the U.S. Meat Processing Industry

Note: The apparent drop in cumulative workers diagnosed in July is due to disparate sources.

Sources: (Dyal, 2020; Dempsey, 2020; Axon et al., 2020; Waltenburg et al., 2020; Kindy, 2020; Douglas, 2020)

Decreased processing capacity caused a steep increase in the price of wholesale meat and simultaneously a decrease in the value of live animals. The portion of sales revenue going to wholesalers (also called the farm-to-wholesale price spread) was the largest on record for both beef and pork (Nepveux, 2020). The value going to meat producers has mostly fallen since the pandemic began. This trend began prior to the emergence of COVID-19, but the pandemic exacerbated the problem and resulted in record lows, adding to producers' hardships. Decreased processing capacity left many livestock producers with nowhere to sell their animals, which led to producers euthanizing around 2 million animals in order to reduce herd sizes (Repko and Lucas, 2020; Kevany, 2020).

Some producers of specialty-category meat fared better as a result of the disruption. Demand for local meat spiked early in the pandemic when customers aimed to stock up on food supplies while also wanting to avoid grocery stores. As national supply chains struggled, consumers increasingly turned to local producers to meet their needs. This left some local meat producers with more demand than they

could supply (McKenna, 2020; Pasanen, 2020; Namigadee, 2020). For some consumers, the crisis may also have inspired a new mindset toward meat, with anecdotal accounts of buyers becoming more conscious of the way their food is produced and preferring meat that carries health and environmental benefits, such as organic, grass-fed, and local (Organic Trade Association, 2020; McKenna, 2020).

While the pandemic appeared to be devastating for the meat industry as a whole, reports began emerging in late 2021 that four of the biggest meat processing companies domestically (Tyson, JBS, Marfrig, and Seaboard), who control 55 to 85% of the market for beef, poultry, and pork, used their market power in the highly consolidated US market to drive up meat prices and underpay producers. Thus, an evaluation of their financial reports indicated their net income surged by 500% over the past couple of years. Labor costs are often cited by the industry as the reason for rising prices of meat, however, a White House report on this matter contradicts this claim by demonstrating net margins increasing three-fold. If labor were the main constraint, then these margins would have remained relatively flat. In several instances, these large corporations reported record profits while selling less volume of meat in total.

Beyond the tumult the pandemic has caused in the meat industry, analysts have optimistic predictions for specialty meat in the coming years. Prior to the pandemic, the global *organic* meat and poultry market was expected to grow at more than 10% annually, and reach \$15.6 billion by 2026, up from \$7.2 billion in 2018 (Nelson, 2019). Even after the impact of the pandemic, some analysts are predicting that rising health consciousness and concerns about meat quality will bring strong growth to the domestic and global organic meat market through 2025 and beyond (Mordor Intelligence, 2020; Research Nester, 2020). After demand for the meat did not decline during the pandemic, some analysts even increased their expectations for organic poultry sales (Becker, 2020). Demand for grass-fed meat in the U.S. is expected to see annual growth of 5% through 2030, largely due to higher demand in hotels and restaurants (Fact.MR, 2020). Some analysts also think there is great potential for growth in grass-fed Bison meat (SBWire, 2018).

The total market size of meat can be estimated both in terms of meat poundage and value. An estimate of poundage is evaluated through applying per capita disappearance rates (retail level) to the most recent population data. The figure below demonstrates current market demand for beef, pork, lamb, and bison at two different geographic levels including: Western Montana (west of the continental divide) and the entire state of Montana.

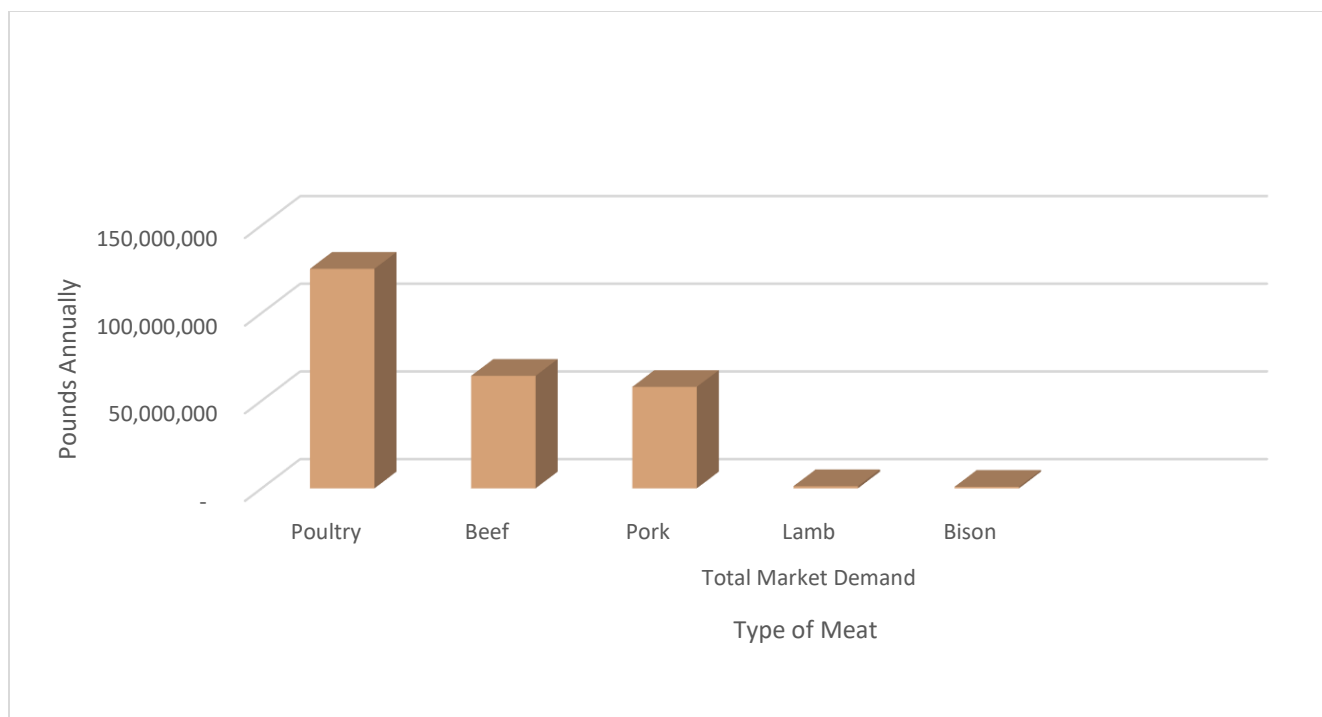


Figure 8. Current Meat Market Demand (pounds annually)

Sources: (US Census Bureau, 2021; USDA Economic Research Service, 2020)

The above graph is for demonstration purposes only and assumes national per-capita disappearance is a reasonable approximation for local demand. We then use this estimate to convert the local meat demand to supply and processing capacity in the state, presented in the table below.

Table 13. Local Meat Demand Compared to Live Animal Crop and Processing Capacity in Montana, Number of Head²²

	Beef	Pork	Lamb
Local Demand	149,200	401,800	35,730
Live Animal Crop 2021	1,310,000	988,000	158,000
Processed in 2021	38,400	17,900	5,700

Sources: (Economic Research Service 2021) (National Agriculture Statistics Service 2022) (Oklahoma Dept. of Agriculture, Food & Forestry 2022) (Oklahoma Dept. of Agriculture, Food & Forestry 2011) (The Fat Ewe Farm 2022)

As indicated from the above table, the number of animals processed in the state is a small percentage of animals birthed in the state (2% to 4%); indicating that most animals birthed in the state leave to be finished and slaughtered elsewhere, which is the result of large-scale meat processing concentration in a select number of states. The animals processed in Montana during 2021 account for 25% of local demand in beef, 4% of local demand in pork, and 16 % of local demand for lamb. These estimates would suggest that 75 to 96% of the meat consumed in the state comes from outside sources (depending on

²² Local Demand = pounds of meat consumed annually (in figure above) / yield of meat per head of animal; no data was available for poultry or bison live animal inventory or processing in the state.

the type of meat). There are three caveats to these estimates that would indicate the actual amount of meat imported to the state could be much higher percentage:

1. The estimate fails to account for processed meat that leaves the state. In 2021, roughly $\frac{1}{4}$ of the animals reported for processing in the state were processed at federally inspected facilities (National Agriculture Statistics Service, 2022). Federal inspection has been required for the meat processed to cross state lines and be marketed elsewhere. Some of the federal inspected plants (e.g., Hi Country Snack Foods, and Daily's Premium Meats, which is owned by Seaboard Farms) largely rely on meat brought in from other areas and then market their products across a wider geography than just the State of Montana.

House Bill 336 (passed in March of 2021) will create an agreement between Montana, Idaho, Wyoming, North and South Dakota, Iowa, and Nebraska to allow state inspected meat from these states to be sold in the other cooperating states without federal inspection (Nicholson, 2021). The bill's effective date is contingent on either 1) the director of the Department of Livestock certifying the interstate compact has been ratified by the US Congress, or 2) the attorney general certifying that a court of competent jurisdiction has ruled the compact is not preempted by federal law and the action is no longer subject to appeal (Daily Montanan, 2021).

2. The estimate does not consider meat consumed by non-residents. In 2021 there were 12.5 million non-residents that visited Montana (University of Montana, 2021).

3. The estimate does not consider demand for specific cuts of meat (only consumption in total).

With these caveats in mind, the estimated reliance that consumers have on local meat processing is likely overstated in the estimate above. In other words, the actual percent of meat consumed in the state that comes from local processors is lower than the figures presented above.

In addition, federal funding has been allocated (\$8 million) to support 17 meat processing projects across the state, aiming to 'bolster Montana's agriculture producers and reduce consolidation in the meatpacking industry through expanding local meat processing capacity' (The National Provisioner, 2022). Thus, given the increasing demand for local meat, the focus on reducing consolidation in the industry, and the production capacity of livestock producers in the state, there appears to be significant opportunities in local production and processing of meat in Montana.

Meat processing capacity was shown to be a constraint in Montana prior to the pandemic, and the past few years have only exacerbated this bottleneck. Specifically, the One Montana Meat Processing Feasibility Study (2014) summarized relevant publications on meat processing in the state. As part of this study, the authors indicated that the total kill capacities of all USDA inspected plants operating in Montana was 150 head of cattle per day (Bitz, 2014). A recent bill passed at the state level (House Bill 336) allows for meat to be sold across specific state lines with just state inspection. Currently there are 36 state regulated meat processing plants in Montana. The bottleneck for custom processing in the state is evident by some of the lead times, with most state and federal plants in western Montana reporting a

minimum four-month wait time to schedule a slaughter and processing of an animal.²³ As part of this analysis, we do not quantify a specific opportunity regarding meat processing as the entire sector in the state seems to be in flux at the moment, with at least 17 meat processing plants being developed or expanded currently.

The impact of more local meat processing will be experienced in the additional value created by producing a finished product, as opposed to selling a weaned calf for finishing elsewhere. As mentioned above, most of Montana's cattle and calves are currently sold at about 550 pounds and then leave the state to be finished elsewhere. When livestock can be kept in Montana to be finished, processed, and sold, the value of the meat is two to four times the value of the calf leaving the state as a calf, as demonstrated in the table below.

Table 14. Value of Steer Calves in Montana versus Value if Finished and Processed in Montana

Item	Weight	Price per pound	Total Value / Head
Steer calf	550	\$1.55	\$853
Fed cattle	1,200	\$1.15	\$1,380
Carcass	694	\$3.00	\$2,082
Retail cut	451	\$7.61	\$3,432

Sources: (Ward, 2020) and Highland Economics' analysis

The above table demonstrates that the value of selling retail cuts from beef create an additional \$1,229 (when sold as a carcass) to \$2,579 (when sold as retail cuts) per head when compared to selling a steer calf. Thus, using these estimates on the marginal increase in value, we can estimate a total value created by additional processing capacity in the state. We do not have specific estimates of how the current meat processing projects across the state would impact processing capacity. However, if we assume that these 17 planned meat processing projects would increase the capacity of the 36 regulated plants across the state linearly (by roughly 50%) then the 150 head per day capacity would be increased to 221 head per day. This would mean that there could be an additional 19,200 head of beef equivalent processed and sold in the state at the carcass or retail cut level. Using the assumptions above, this level of capacity could generate an additional **\$23.6 to \$49.5 million annually** in market value of product across the state. This represents the additional value that is anticipated to stay in Montana in the form of direct jobs, spending on processing (which will support indirect jobs and income), income to the rancher, as well as distributions paid to proprietors of the processing plants.

5.3 DAIRY

Dairy consumption has been shrinking over the past decade, as have the number of dairy cows across the nation and in Montana. In 2000, Montana had 140 dairies and now has 60 (57% reduction). In that same time period, Montana went from 13,000 dairy cows to 11,000 (15% reduction). Half of the dairy farms are within 100 miles of the three processing plants in the state. The plants in Great Falls and Billings are owned by Dean / Meadow Gold and the other plant in Bozeman is owned by Darigold. There are also a couple small, private label dairy processing plants including Kalispell Creamery and Lifeline

²³ One of the few USDA facilities in the state (Ranchland Packing Company) has stopped taking custom orders due to the fact they have regular contracts that occupy their kill plant and processing line completely.

Dairy. In total, the milk processed in the state provides 95% of the fluid milk consumed in the state (Drake, 2018).

A report on the opportunities and challenges in the dairy sector by Technomics suggested that Montana is not in a position to enter the commodity cheese market, which typically requires the ability to process 1 to 2 million pounds of cheese daily to capture economies of scale in the processing. However, smaller facilities that rely on a strong branding strategy could produce specialty products and typically use 3,000 to 30,000 pounds of milk daily and could easily be supplied by the surplus milk in Montana. These plants could include yogurt, specialty cheese, butter and carbonated milk products. The report notes that a 'modest' plant in Montana, using 3.5 million pounds of surplus milk per year could support 20% of Montana's yogurt consumption. A specialty cheese or yogurt plant could be built for less than \$1 million (Durling, 2018).

The main constraints to growth in specialty dairy products include the market demand for fluid milk. While small to medium scale specialty products was identified as an opportunity, constraints to capturing economies and efficiencies in production and shipment were identified as location, access, and size of existing dairies in the state. The report from Technomics suggest that several dairy farms are located along dirt roads which present challenges to reach, especially in the winter; the dairy farms tend to be small (64% have fewer than 150 cows). Finally, the location in relation to the processing plants is a challenge, as approximately 64% of the Montana produced milk received by the processing plant in Billings was transferred from Great Falls and Bozeman producers, many of which are located 200 to 300 miles away.

5.4 EGGS

Demand for eggs has grown steadily over the past couple decades, hitting 286.5 pounds per capita annually in 2020 and projected to be over 288 pounds per capita in 2022 (Shahbandeh, 2022). At this rate of consumption, the state of Montana residents would consume 26.5 million dozen eggs. Montana egg producers were reported to produce over 30 million dozen eggs in 2021 (National Agriculture Statistics Service, 2022). Given the influx of visitors it is expected that total production of eggs would be roughly equivalent to consumption of eggs across the state. Stated differently, Montana's production is roughly equivalent to its consumption.

The production statistics suggest that production of eggs doubled between 2017 and 2018, which is when Montana Eggs LLC opened a 58,000 square foot egg grading facility in Great Falls. The operation is a cooperative of 58 Hutterite colonies that produce eggs in a completely cage-free nesting system. According to reports, the facility has the capacity to process 280 million eggs (or 23.3 million dozen eggs) annually (Georgiev, 2017), which would represent 75% of the production reported across the state in 2021.

Bird flu, or Avian Influenza, cases have been identified in commercial chicken and turkey farms or in backyard flocks in 29 states, according to the USDA. Spread of the disease is largely blamed on the droppings of infected migrating wild birds. Currently (Spring of 2022) three states neighboring Montana have cases of avian flu. Montana is currently waiting for confirmation of two suspected cases now. Avian flu is highly contagious and can have detrimental impacts on bird populations. It is the primary reason for egg prices increasing more than 50% ahead of the Easter holiday in 2022 (Lutey, 2022)

5.5 GRAINS AND OILSEEDS

Most of the grains and oilseeds produced in Montana are ‘commodity crops,’ or crops that are typically grown in large volume, at high intensity, and specifically for the purpose of sale to the commodity market (as opposed to direct local consumption or processing). Examples of large-scale wheat and oilseed processing is generally concentrated in the Golden Triangle area of Montana and includes Montana Specialty Milling, Columbia Grain, General Mills, and Pasta Montana. There are also several examples of grain and oilseed processors that use specialty grains and oilseeds for their feedstock, largely produced in Montana, including Kamut International, Timeless Seed, Oil Barn, and others.

Montana ranks first in the nation in production of lentils and certified organic wheat, and second or third (depending on the year) in spring wheat, durum wheat, barley, flax and safflower. In general, the consumption of these crops locally represents only a small portion of the production, as most of the production of these crops leave the state for consumption elsewhere (NASDA, 2022). The opportunities associated with grains and oilseeds for local consumption would include niche food products or specialty grains, legumes, and oilseeds. The main constraints with these opportunities would involve establishing a brand and market in the grain and oilseed sector.

Current events in the world including the war in Ukraine, and supply chain disruptions are anticipated to have lasting impacts in the grain and oilseed sectors, as well as add high levels of uncertainty associated with future trade worldwide.

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APPENDIX A – CONSUMER SURVEY

This appendix summarizes the results of the survey. In total, there were 72 respondents to the survey. All surveys were administered between July 8, 2021 and October 20, 2021.

Question 1: What store or market are you shopping at today?

ANSWER CHOICES	RESPONSES	
Bozeman Community Food Co-Op	85.92%	61
Pattee Creek Market	9.86%	7
Heebs Fresh Market	0.00%	0
The Farmers' Stand	4.23%	3
Clark Fork River Farmers Market	0.00%	0
Other (please specify)	0.00%	0
TOTAL		71

Question 2: In what city are you grocery shopping?

ANSWER CHOICES	RESPONSES	
Bozeman	85.92%	61
Missoula	9.86%	7
Whitefish	4.23%	3
TOTAL		71

Question 3: What is your home zip code?

59715	36	50%
59718	11	15%
59801	4	6%
59047	3	4%
59937	3	4%
59803	3	4%
59714	2	3%
95123	1	1%
95403	1	1%
83429	1	1%
78759	1	1%
32960	1	1%
70809	1	1%
59771	1	1%
77545	1	1%
11211	1	1%
59808	1	1%

Question 4: What year were you born?

Min	1948
Average	1986
Median	1991
Max	2006

Question 5: How much did you spend on groceries today?

Min	\$2.95
Average	\$40.82
Median	\$29.50
Max	\$300.00

Question 6: Did you purchase Montana grown or produced food as part of your grocery shopping today?

ANSWER CHOICES	RESPONSES	
Yes	65.28%	47
No	16.67%	12
I don't know	18.06%	13
TOTAL		72

Question 7: If you answered "yes" to the last question, please indicate under the following food categories the primary attributes that contributed to your decision to purchase them. Check the bottom box if you did not purchase any Montana-sourced food from that category.

	FRUIT	VEGETABLES	MEAT	DAIRY	EGGS	GRAINS AND LEGUMES	PROCESSED FOODS	ALCOHOL (BEER, WINE, ETC.)	TOTAL RESPONDENTS
Better taste	45.71% 16	62.86% 22	31.43% 11	25.71% 9	28.57% 10	22.86% 8	8.57% 3	14.29% 5	35
Better price	20.00% 3	46.67% 7	6.67% 1	6.67% 1	6.67% 1	26.67% 4	13.33% 2	13.33% 2	15
Fresher or better quality	50.00% 18	69.44% 25	30.56% 11	19.44% 7	33.33% 12	27.78% 10	13.89% 5	8.33% 3	36
Healthier or more nutritious	44.83% 13	68.97% 20	37.93% 11	24.14% 7	34.48% 10	27.59% 8	3.45% 1	0.00% 0	29
Better for the environment	53.13% 17	75.00% 24	34.38% 11	25.00% 8	40.63% 13	37.50% 12	9.38% 3	9.38% 3	32
Smaller carbon footprint	51.72% 15	79.31% 23	27.59% 8	17.24% 5	34.48% 10	37.93% 11	10.34% 3	10.34% 3	29
Animal welfare	30.00% 6	50.00% 10	35.00% 7	20.00% 4	50.00% 10	25.00% 5	5.00% 1	0.00% 0	20
Supports local agricultural producers	52.94% 18	76.47% 26	35.29% 12	23.53% 8	38.24% 13	35.29% 12	8.82% 3	5.88% 2	34
Organic or pesticide/toxin-free	50.00% 15	73.33% 22	36.67% 11	23.33% 7	33.33% 10	36.67% 11	10.00% 3	10.00% 3	30
Helps to avoid food shortages/encourages food security	43.75% 7	81.25% 13	37.50% 6	25.00% 4	25.00% 4	37.50% 6	18.75% 3	12.50% 2	16
Preserves agricultural lands	47.83% 11	69.57% 16	34.78% 8	21.74% 5	30.43% 7	39.13% 9	13.04% 3	4.35% 1	23
Help out a neighbor farmer	48.39% 15	74.19% 23	35.48% 11	25.81% 8	41.94% 13	41.94% 13	12.90% 4	9.68% 3	31
I did not purchase Montana-sourced foods in this category	60.00% 12	55.00% 11	75.00% 15	80.00% 16	65.00% 13	60.00% 12	75.00% 15	70.00% 14	20

Question 8: For food categories that you did not purchase Montana-sourced foods, which of the follow factors describes why you chose not to purchase Montana-sourced foods? For each food category, select all that apply. If you did not purchase any food from a category (Montana-sourced or otherwise), or did purchase Montana-produced food, please check the appropriate box at the bottom.

	FRUIT	VEGETABLES	MEAT	DAIRY	EGGS	GRAINS AND LEGUMES	PROCESSED FOODS	OTHER	TOTAL RESPONDENTS
Montana-sourced options were unavailable	25.81% 8	12.90% 4	6.45% 2	12.90% 4	6.45% 2	12.90% 4	35.48% 11	29.03% 9	31
Montana-sourced options were not in season	60.00% 6	50.00% 5	0.00% 0	0.00% 0	0.00% 0	10.00% 1	10.00% 1	10.00% 1	10
Montana-sourced options were not easily accessible	25.00% 2	25.00% 2	37.50% 3	25.00% 2	12.50% 1	12.50% 1	62.50% 5	25.00% 2	8
Montana-sourced options were too expensive	37.50% 3	37.50% 3	50.00% 4	37.50% 3	37.50% 3	25.00% 2	37.50% 3	37.50% 3	8
Montana-sourced options are unsafe to eat	50.00% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	50.00% 1	2
Montana-source options were lower quality	25.00% 1	0.00% 0	25.00% 1	25.00% 1	0.00% 0	0.00% 0	0.00% 0	25.00% 1	4
Montana-source options were not organic or pesticide/toxin-free	50.00% 2	25.00% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	25.00% 1	25.00% 1	4
I did not purchase any food in this category (MT-sourced or otherwise)	60.00% 12	20.00% 4	70.00% 14	65.00% 13	65.00% 13	65.00% 13	50.00% 10	55.00% 11	20
I purchased Montana-sourced food from this category	35.71% 5	57.14% 8	21.43% 3	7.14% 1	21.43% 3	28.57% 4	28.57% 4	28.57% 4	14

Question 9: If you are not sure whether you purchased Montana-produced foods, which of these factors contributed to your uncertainty? Select all that apply.

ANSWER CHOICES	RESPONSES	
Montana-produced foods are not labeled	32.43%	12
I don't pay close attention to where foods are sourced from	62.16%	23
Other (please specify)	16.22%	6
Total Respondents: 37		

Question 10: Would you have purchased more Montana-produced foods if they were available at this store?

ANSWER CHOICES	RESPONSES	
Yes	79.17%	57
No	1.39%	1
I don't know	11.11%	8
It depends... (please specify in the comment box)	8.33%	6
TOTAL		72

Question 11: If you answered "yes" to the last question, which of the following food categories would you purchase Montana-sourced foods? Select all that apply.

ANSWER CHOICES	RESPONSES	
Fruit	86.67%	52
Vegetables	83.33%	50
Meat	76.67%	46
Dairy	85.00%	51
Eggs	85.00%	51
Grains and legumes	68.33%	41
Processed food products	51.67%	31
Other (please specify)	6.67%	4
Total Respondents: 60		

Question 12: Would you be willing to answer more questions? If so, what is your email address?

ANSWER CHOICES	RESPONSES	
I am not willing to answer more questions	80.56%	58
I am willing to answer more questions and my email address is:	19.44%	14
TOTAL		72

APPENDIX B – LOCAL FOOD DISTRIBUTORS IN MONTANA

There are at least seven local food distributors throughout Montana beside the Western Montana Growers Cooperative (highlighted in the body of the text): Wild West Foods, Quality Foods Distributing, Intermountain Produce, Root Cellar Foods, B & R Foods, Butte Produce and Produce Depot. Many of these distributors have developed long standing relationships with accounts in their town base.

Wild West Local Foods is based out of Bozeman, formerly Summit Distribution with a retail storefront and wholesale distribution business. They service the I-90 corridor from Missoula to Billings. They also distribute to West Yellowstone, Big Sky, Ennis Montana, Island Park and Driggs Idaho, Jackson Wyoming and Yellowstone National Park.

Quality Foods Distributing (QFD) is headquartered in Bozeman Montana. QFD specializes in natural, organic, specialty, local and regional products. According to QFD, they distribute over 1,500 products from 100+ suppliers, 80%+ of whom are Montana-based businesses they merged with Market Day Foods of Bozeman in 2015. Market Day Foods operated an online market for local customers while also expanding the distribution of local foods to restaurants and lodges throughout southwest Montana. QFD delivers twice a week across Montana excluding the Bitterroot and once a week to Jackson, Wyoming, Yellowstone, and Grand Teton National Park. They represent Amaltheia Dairy, Country Pasta, Timeless Natural Foods, Fat Robin Orchard, Kalispell Creamery among other Montana brands. They supply MSU, University of Montana, and Rosauers among others.

B&R Foods based in Missoula has been in existence since 1979. They serve the Missoula and Bitterroot markets. Their customer base is comprised primarily of area restaurants, who often use them as a back-up supplier. Their main competitive advantages are deliveries 5-6 days a week and they can be cheaper for commodity, conventional goods such as onions. The Top Hat restaurant is a key account of B&R Foods. B&R's only local produce supplier is Local Bounty, while most of their purchasing done at the Los Angeles wholesale market weekly. They do supplement this with weekly produce purchases from Peirone Produce. Effectively they offer a lower quality of goods, more deliveries, non-organic and at a higher mark up.

Root Cellar Foods is a local food processor and distributor based in Bozeman. They are an intermediary supplier in the Bozeman market for accounts like the Community Food Co-op, Montana Ale Works, Bozeman School District, Town and Country Foods and MSU.

Intermountain Produce is based out of Bozeman and distributes across Montana. They primarily service grocery stores, and secondarily institutions. They specialize in tree-ripened fruit from Washington and Oregon while offering other items like Walla Walla onions, tomatoes, corn and bell peppers when available. They deliver up to twice a week in Montana. Intermountain buys directly from Washington fruit packing houses. Town and Country Foods is a key chain account for them. They are cheaper alternative than the other local competitors with a year around supply of NW fruit.

There are additional local competitors in smaller Montana towns such as Butte Produce and Produce Depot in Whitefish. These produce companies operate similarly to B&R Foods with purchases from a large mainline distributor like Charlie's Produce with multiple days a week local delivery.