

Direct-to-Consumer Food Markets in the North Central Health District of Idaho

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Direct-to-Consumer Food Markets in Northern Idaho

Executive Summary

- One of the key definitive components of sustainability is protecting the resources of today for the people of tomorrow. With reliance on nonrenewable energy supplies, threats of climate change, and insecure water resources; the traditional system of food production is an unsustainable model for the future. Given these pressures, the literature has made the case that a more sustainable approach to agriculture is needed.
- This report briefly discusses agriculture in the United States and the trend towards more local food production. Local food has many interpretations and definitions. Local food is refined in this report to direct-to-consumer food markets, and more specifically, Farmer's Markets and Community Supported Agriculture (CSA). Focusing on a rural region in north central Idaho, this report quantifies the collective capital of the region and the presence of these two local food markets. Understanding the existing situation and any geographic, economic, or political barriers to local food production is important to the analysis.
- The five northern Idaho counties of: Latah, Nez Perce, Lewis, Clearwater, and Idaho together are a region collaborating on community capital improvements with economic and health and welfare programs through the Clearwater Economic Development Association (CEDA) and the Idaho Department of Health and Welfare. This report assesses the existing natural, human, and cultural capital of the North Central Health District of Idaho and uses a Geographic Information System (GIS) to spatially represent market distributions.
- The five counties are situated between the Snake River to the west and the Bitterroot Mountains to the east where the region's economic wellbeing is linked to its natural capital and farming, ranching, and timber industries. Persons per square mile in the North Central Health District range from 1.9 in Idaho County to 46.3 in Nez Perce County. Production and consumption patterns are shaped by these topographic conditions as well as by federal and state policies. Comprehensive plans for the region were analyzed for emphasis on improving the regional food system. Language in all comprehensive plans was focused primarily on a historic representation of the region as a prime agricultural producer and in emphasizing the need to protect the region's natural capital. Latah County and the City of Moscow specifically made more specific claims to a focus on improving local food production. There are six farmers' markets, stretching down the main travel corridor of the region and thirteen CSA's more heavily clustered in Latah County.

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Introduction to Local Food

1.1 Agriculture in the United States

Agricultural production has been the root of human expansion (Imhoff et al. 1998). It has gone under considerable changes since the early 20th century with the introduction of horse-powered agriculture in the beginning of the century, industrial agriculture after WWII, and the suburbanization of prime farmland brought on by the expanding federal highway system in the mid to late part of the century (Black et al. 1998). By 1992, 25% of prime farmland in the country had been absorbed by urban development leaving 185 of the 3000 counties in the country with no farm land at all (Maizel et al. 1998).

Conventional agriculture in the U.S. has resulted in many regions depending on a complex transportation system for their basic food needs. Even prominent production zones can leave their local populations without a sufficient food supply when the bulk of their harvest is exported to other countries. Food typically travels between 1300 and 1500 miles before being consumed (Kloppenburg, Hendrickson, and Stevenson 1996; Govindasany et al. 2012). Today, much of the food that makes it to a grocery store shelf comes from just a few prominent agriculture zones that remain in the country; a pattern that renders counties with little to no farming activities reliant on national and international supplies (Imhoff et al. 1998). Who suffers the most in this scenario is the population that is not transit oriented and is forced to rely on resources available within their neighborhood food environment that may be limited in rural communities.

Conventional agriculture also creates many ecological problems for the land and surrounding lands of its production center; water pollution from nitrogen and phosphorus nutrient overloads, biodiversity loss, greenhouse gas emissions, natural resource degradation, and resistance build up by the overuse of pesticides and other chemicals (Magdoff 2007; Reganold et al.; Padmavathy and Poyyamoli 2011). Two-thirds of the water used by humans is used for agriculture, making it by far the largest source of impact to aquifers and rivers (Barnett 2011; Padmavathy and Poyyamoli 2011). These implications have caused people to question the sustainability of commercial agriculture (Farnsworth et al. 1996; Lobao and Meyer 2001).

1.2 The Local Food Movement

The local food movement takes steps to reduce the distribution range of producer to consumer (Kloppenburg, Hendrickson, and Stevenson 1996; Ramu Govindasamy, Venkata Purduri, Kathleen Kelley 2012; Jones, Comfort, and Hillier 2004). Many movements in the country have contributed to the local foods movement, the environmental movement, the community food security movement, and movements concerned about greenhouse gas emissions (Martinez, Hand, et al. 2010). These efforts help communities spatially understand production and consumption patterns and identify their own region's foodshed.

The term foodshed was first introduced in a book in the 1920's written by Walter Hedden, *'How Great Cities Are Fed'* pointing out the dependency city centers had on a fully functioning distribution sector of the food system. (Peters et al. 2008). Production and consumption are just two parameters of the foodshed and Figure 1 shows the whole food supply chain from farm to table, emphasizing the processing and transportation petroleum uses typical of the traditional food system. Localizing the foodshed takes steps to reduce the reach of the food supply chain and focus on what could be produced regionally to incorporate more sustainable solutions for the whole production, processing, distribution, and consumption patterns of the foodshed (Hemenway; Salkin and Lavine 2010; Kloppenburg, Hendrickson, and Stevenson 1996). The sustainability of the foodshed is a multidisciplinary concern and research has shown that focusing on local food can have positive impacts on multiple community stressors such as: food security, public health, social justice, and ecological health (Salkin and Lavine 2010; Mundler and Rumpus 2012).

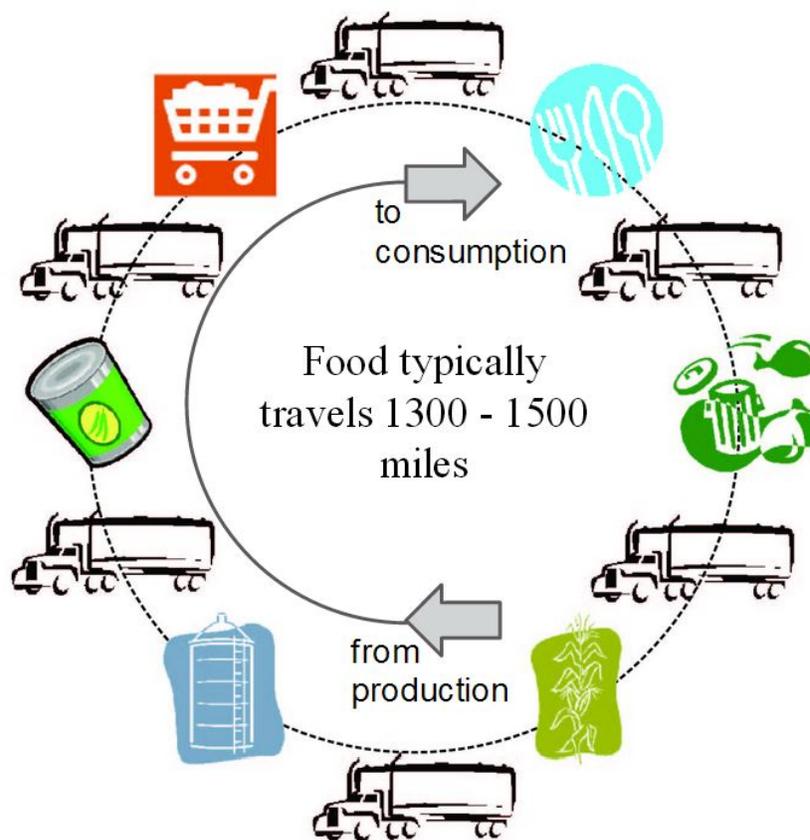


Figure 1: Parameters of the Foodshed Supply Chain

Introduction to Place: North Central Health District of Idaho

2.1 Region Overview

Regional identity is more than just geographical boundaries, it also encompasses the political and cultural parameters of place (Morrissey 1997). To understand the potential of the local food market, an inventory of a community's natural (geographic environment), human (educational and economic environment), and cultural (social and political environment) capital must be assessed (Munier 2005; Campbell, Carlisle-Cummins, and Fennstra 2013).

Idaho state was divided into seven health districts in 1970 to focus public health and welfare resources regionally and to extend resources to all rural areas (IDHW 2013). The North Central Health District is the second health district of Idaho and includes the five counties of: Latah, Nez Perce, Lewis, Clearwater, and Idaho. The North Central Health District has several health and community sustainability programs focused on environmental and community health (IDHW 2013). Targeting community health, the health district has started a three phased community garden program to promote and support sustainable agriculture in the region (IDHW 2013). The program is in its infancy, but has outlined the procedures to follow for future projects.

Collaborative efforts on community food systems are already occurring. The Palouse-Clearwater Food Coalition is a grassroots organization engaged in projects to strengthen the regional food system through efforts aimed at bringing producers and consumers closer together. Another group, the Food System and Economic Development Initiative, which is sponsored by the University of Idaho's Department of Economic Development, aims to raise awareness campus-wide on food related research being conducted by University of Idaho faculty and students, and encourages collaborative efforts by cultivating these connections (OED 2013; PCFC 2013).

2.2 Natural Capital

The physical landscape of the region is quite variable. The five counties are situated between the Snake River to the west and the Bitterroot Mountains to the east. The individual counties have variable growing climates because they contain a variety of geographical features, including mountain ranges and river valleys with a wide elevation gradient that ranges from 700 to 8,500 feet with an average slope of 13% (Burt 1981; CEDA 2013). These diverse landscapes alter the growing potential in the region (CEDA 2013). The hardiness zones in the region range from 4b, meaning low temperatures can be down to -25°F, for parts of Idaho County to 7b, meaning low temperatures can be down to 5°F for parts of Nez Perce County (USDA 2013). Precipitation in the region ranges from 8 to 12 inches on the western edges and 60 to 80 inches on the eastern edges (IDWR 2013). Soils tend to be on the acidic side though many Idaho farms are using Global Positioning Systems (GPS) to map soil types and improve yields with as little

fertilizer as possible (ISDA 2013; University of Idaho Extension 2013). The amount of land suitable for agriculture and zoned for this use varies in each county.

2.3 Human Capital

Idaho is primarily a rural state with, on average, 19 people per square mile compared to an average of 87 people per square mile nationally (US Census Bureau 2012). Persons per square mile in the North Central Health District range from 1.9 in Idaho County to 46.3 in Nez Perce County (US Census Bureau 2012). Figure 2 illustrates the distribution of the population at the census tract across the region.

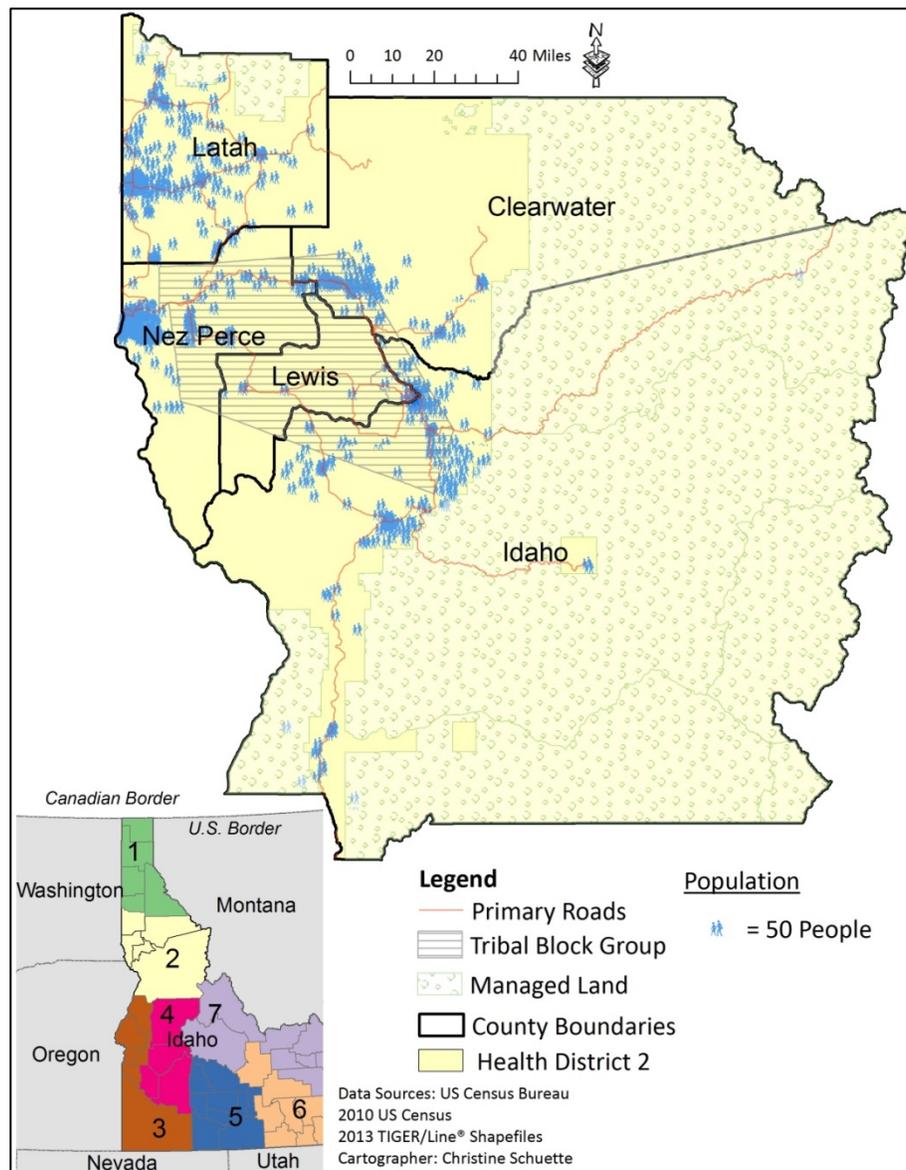


Figure 2: The Population Distribution in the Second Health District of Idaho

Each blue symbol represents 50 individuals. The spread of the population is randomly distributed at the block level. The maps show that the spatial concentration of the population is in the northwest corner of the region, in Latah and Nez Perce County, clustered around the main travel corridor of the region.

Idaho's economic wellbeing is linked to its natural capital and farming, ranching, and timber industries (CEDA 2013; ISDA 2013). The state is also divided into economic development districts, and the same five counties in the North Central Health District make up the Clearwater Economic Development Association (CEDA). CEDA is a not-for-profit 501c(4) established in 1968 to enhance economic stability through government and industry collaborations (CEDA 2013). The economic base of the study region is in manufacturing and state and federal government employment, though agriculture also has a large economic presence (University of Idaho: OCP 2013). Household median income ranges from \$35,551 in Clearwater County to \$45,816 in Nez Perce County. The average poverty rate ranges from 12.7% in Nez Perce County and 21.0% in Idaho County (University of Idaho: OCP 2013).

Nez Perce County, home to Lewiston, the most populated community in the region, is located at the confluence of the Snake and Clearwater Rivers. The Port of Lewiston is the furthest inland seaport in the U.S. The port and the city's paper and saw mill make trade and manufacturing the base of Nez Perce's economy (CEDA 2013). Agriculture, forestry, and livestock are also important economic activities for rural residents in the county. Forty eight percent of land in the county is used for agriculture (Nez Perce County Idaho P&B 1998; Clearwater County Idaho P&Z 2013). Eleven percent of county residents have not obtained a high-school degree and 21% have obtained a bachelor's degree or higher (University of Idaho: OCP 2013).

Latah County has been reported to have some of the richest farm land in the United States, with 38% of the county's land devoted to agriculture (Clearwater County Idaho P&Z 2013). Latah County is home to the state's land grant college, the University of Idaho, in the city of Moscow, which is a dominating economic presence in the county (CEDA 2013). Five percent of county residents have not obtained a high-school degree and 43% have obtained a bachelor's degree or higher (University of Idaho: OCP 2013).

Clearwater County has 53% federally managed forestlands. This and the topographic variation of the county, with the western river beds and the region's eastern mountainous areas, make the timber and service industries major economic players in the county. Productive agriculture can mostly be found in the south western side of the county; 2.4% of land in the county is used for agriculture. Restrictions to expansion of croplands include soil limitations and the county's topography (Clearwater County Idaho P&Z 2013). Fourteen percent of county residents have not obtained a high-school degree and 15% have obtained a bachelor's degree or higher (University of Idaho: OCP 2013).

Lewis County is the smallest county in the region and its economic portfolio consists of agriculture, forestry, manufacturing in wood products, and government employment. Fifty nine

percent of Lewis County is used for agriculture (Clearwater County Idaho P&Z 2013). With agriculture playing such a valuable role in the county, sustaining fertile lands is of prime importance to the local government (Lewis County Idaho P&Z 2009). Twelve percent of county residents have not obtained a high-school degree and 16% have obtained a bachelor's degree or higher (University of Idaho: OCP 2013).

Idaho County has 83% federally managed forestlands and its economic portfolio consists of agriculture, forestry, manufacturing in wood products, government employment, recreation, dry-land farming and commercial farming (CEDA 2013). It also shares some of the limitations of Clearwater County with regards to agriculture production due to topography; only 4.3% of the land is used for agriculture (Clearwater County Idaho P&Z 2013). Twelve percent of county residents have not obtained a high-school degree and 15% have obtained a bachelor's degree or higher (University of Idaho: OCP 2013).

Economic overlaps exist in the region with regards to agriculture and forestry production. Idaho and Clearwater counties, with a greater percentage of their county lands federally managed forestlands, rely heavily on the timber industry and government employment. The agriculture industry in each county's economic portfolio does not delineate between commercial contributions and those made to the local food market.

2.4 Cultural Capital

Production and consumption patterns are shaped by federal and state policies, market conditions, and topographic conditions (Salkin and Lavine 2010; Webb et al. 2006). The Idaho State Department of Agriculture (ISDA) was established in 1919 to protect Idaho crops and regulate the rapid expansion of the state's agricultural industry, bring structure to the agricultural market, and to protect consumers from contaminated products. The mission of the ISDA is to serve consumers and farming by targeting safety measures at the public, flora and fauna, and the environment (ISDA 2013). Several of ISDA's goals align with the local foods movement: to address public concerns regarding water and air quality, educate the agriculture industry on environmental stewardship, increase awareness of Idaho grown and processed goods with the Idaho Preferred label which celebrated its 10th anniversary in 2013, and improve transportation systems for agricultural products (ISDA 2013).

Due to rapid growth, the Local Land Use and Planning Act was passed in 1975, encouraging all cities and counties to develop comprehensive plans for their community's visions for land management (IDCL 2012). The Association of Idaho Cities calls the comprehensive plan the "economic, environmental, and social blueprint for community characteristics" (IDCL 2012). With the exception of Idaho County because they have not written a comprehensive plan for their county; a text analysis for the word (food) and (agriculture) in the individual county plans was analyzed to see what emphasis was given, if any, to local food production. Language in all comprehensive plans was focused primarily on a historic representation of the region as a prime

agricultural producer and in emphasizing the need to protect the region's natural capital. The two largest cities within the region; Lewiston of Nez Perce County and Moscow of Latah County, have their own comprehensive plans and an additional text analysis was done on each of these two plans. The following summarizes what was found in each of the county and city comprehensive plans and not an extensive list of land-use ordinances that may enhance or hinder local food markets efforts.

Nez Perce County projects growth for the food processing sector and advocates for maintaining lands suitable for the production of food, fiber, timber, or minerals, but makes no mention specifically to local foods. Although the plan does define soils as the most important natural resource in the county in need of protection (Nez Perce County Idaho P&B 1998). The City of Lewiston's Comprehensive Plan, while not directly advocating for local food production, discusses the need for agricultural land to be protected from future residential development (Lewiston Idaho P&Z 1998).

Latah County was the only county to mention in its plan the need for the self-sufficiency of the regional food system (Latah County Planning 2010). Further reports were made in the Moscow City Comprehensive Plan of the increase in farms in the county between 1997 and 2002 which is an anomaly to the national trend. In 2002, fifty four farms were reported to sell products, through all market options, directly to consumers (Moscow Planning Division 2007).

Clearwater County, due to topographic restrictions, has a smaller agricultural industry than most of the counties. The plan uses standard legal language to suggest the protection of prime agricultural lands suitable for the production of food, fiber, and minerals. The county also strives to improve the livelihood of its citizens through outdoor recreation and the harvesting of supplemental food stocks (Clearwater County Idaho P&Z 2013).

Lewis County encourages the promotion of local resources and agricultural alternatives though none were specifically identified. The plan also reported that citizens feel strongly about preserving land for the production of food, fiber, and materials (Lewis County Idaho P&Z 2009).

Direct-to-Consumer Agriculture Markets

3.1 Defining Local Food

There have been several proclamations at the definition of “local” in the local food movement and some definitions, too heavily focused on agriculture practices, may not fully encompass the social or political policies of the region (Sullivan 2010; Campbell, Carlisle-Cummins, and Fennstra 2013). U.S. Congress, in the 2008 Conservation, and Energy Act, defined local food by distance alone and considered food to be local if it did not travel more than 400 miles in total to get from producer to consumer (Martinez, Clark, et al. 2010). By that definition, farms in Portland, OR and Seattle, WA – each only 350 miles from Lewiston in Nez Perce County, could be considered local to this region. The United States Department of Agriculture (USDA) defines local food as a market that enables farmers to sell goods directly to the consumer (United States Department of Agriculture Economic Research Service 2013). In an attempt to not assign an arbitrary mile buffer without any place-based assessment of the environmental, social, or political situation in a region; this report adopts the USDA’s definition of direct producer to consumer purchases and suggests that the effort in strengthening the local food availability in a region should lie in reducing the existing supply chain to the point of regional sustainability and focuses on two direct-to-consumer programs in particular: Farmer’s Markets and Community Supported Agriculture (CSA).

3.2 Market Overview

The 1976 Farmer-To-Consumer Direct Marketing Act defined a direct market as, “the marketing of agricultural commodities at any marketplace established and maintained for the purpose of enabling farmers to sell their agricultural commodities directly to individual consumers, or organizations representing consumers, in a manner calculated to lower the cost and increase the quality of food to such consumers while providing increased financial returns to the farmers” (*Farmer-To-Consumer Direct Marketing Act of 1976* 1976). Two types of direct-to-consumer food markets are Community Supported Agriculture (CSA) and Farmer’s Markets. Farmers markets have continued to grow over the last 20 years and have been seen as an opportunity to bring fresh fruits and vegetables to rural areas that may be lacking in resource options (Oberholtzer, Dimitri, and Schurmacher 2012). Farmer’s Markets across the country in 2009 totaled 5,274 which was up from 1,755 reported in 1994 (Martinez, Clark, et al. 2010).

A Community Supported Agriculture (CSA) is a collaborative response to sustainability issues in local communities (Farnsworth et al. 1996). Like shareholders to the farm, CSA’s operate in multiple ways with subscribers getting a share of the production each season, or in some instances, even helping with the harvesting themselves (Agenbroad et al. 2010). Confirmed numbers of CSA’s in 2005 were 1,144 up from just 2 in 1986 (Martinez, Clark, et al. 2010). Studies have also shown that CSA’s promote the consumption of more fruits and

vegetables (Cohen, Gearhart, and Garland 2012). See; ‘*A marketing strategy for small acreage producers in Idaho*’ (Agenbroad et al. 2010) and ‘*Seasonal eating week by week*’ (Clayton, Williams, and Agenbroad 2012) for additional background information and CSA resources in the state of Idaho.

3.2. Regional Markets

Figure 3 shows the spatial distribution of these two direct-to-consumer markets in the North Central Health District. Locations of Farmer’s Markets were geocoded to specific addresses within the region and shown with a symbol icon. Market names can be found by referring to Appendix A in this report. There are eight markets, stretching down the main travel corridor of the region.

Each black dot on the map displays the geocoded locations of one of each of the twelve CSA’s in the region. CSA markets can be cross referenced for particular market name by referring to Appendix B in this report. While the Farmer’s Markets extend down the main transportation routes of region, the spatial distribution of CSA’s is heavily clustered in or very near Latah County with one outlier market in southern Idaho County.

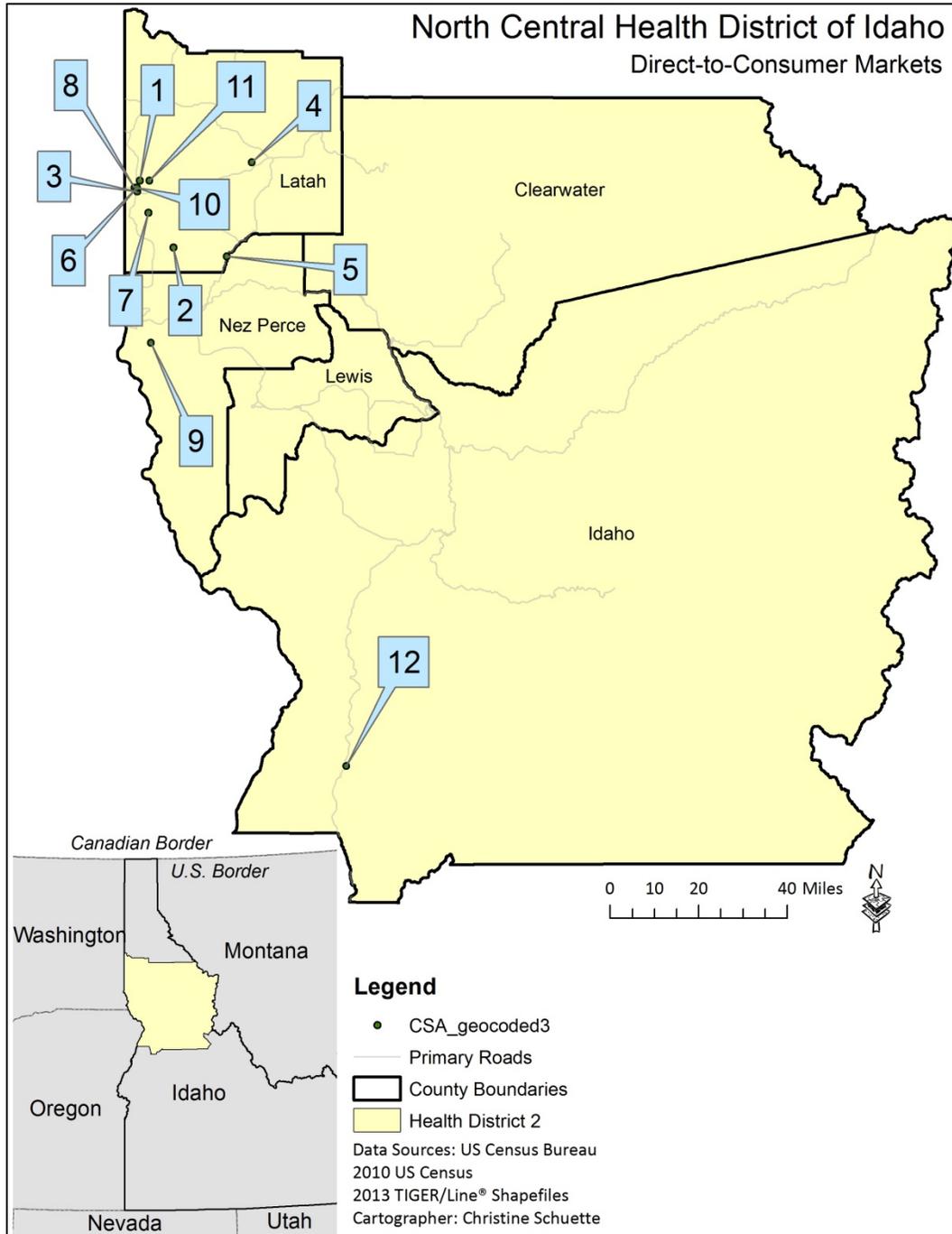


Figure 3: Direct-to-Consumer Markets

3.3. Potential Barriers to Entry

A 2011 USDA funded study found that the effectiveness of direct-to-consumer markets were dependent on: the growing potential of the land, the presence of a clustering of farms, good transportation routes, and a good informational network in the region (Sarah A. Low 2011). In

the 2007 Agriculture Census, local foods tended to be provided by smaller farms in urban corridors on the east and west coasts (Martinez, Clark, et al. 2010). In 2011, eighty one percent of all farms that participate in the local foods markets were small farms reporting less than \$50,000 in annual income (Sarah A. Low 2011). The 2007 Agricultural Census reported forty nine percent of Idaho farms at 50 acres or less making many farms in the state consistent with this dynamic (Agenbroad et al. 2010).

Potential barriers to entry into this market include; capacity constraints (ability of the farmer to spend time off the farm at the market), lack of support systems to aid distribution efforts getting local foods to the market, a knowledge barrier to this new type of market, negotiating a fair price for both farmers and consumers to widen access to the market, and regulations (Martinez, Clark, et al. 2010; Campbell, Carlisle-Cummins, and Fennstra 2013).

Further qualitative analyses could help determine if national datasets are capturing all existing markets in the region and what specific barriers are restricting further implementation of direct-to-consumer markets in the region.

Discussion

This report discussed the space for the local food movement to emerge through concerns about the sustainability of traditional agricultural production. After considering the multiple definitions of local food and the variety of place-based considerations affecting market success, this assessment adopted the USDA's definition focused on direct-to-consumer markets, and particularly the study focused on, Farmer's Markets and Community Supported Agriculture (CSA). The five northern Idaho counties of: Latah, Nez Perce, Lewis, Clearwater, and Idaho are actively engaged in community welfare as a region and the community and environmental health programs of the North Central Health District make the region a strong candidate for further analysis and project implementation. Agriculture is a dominating force in the region, although a high percentage of the crops are exported and the verbiage in most of the comprehensive plans does not single out local food production as a focus. The conscious consideration of the region's natural capital and how important its maintenance is to the region is a valuable philosophy to start with. Direct-to-consumer markets exist mainly along the main transportation channels and population concentrations of the region, leaving the most rural clusters of the population potentially without access to these markets. Further analysis should target these communities.

Appendix A: Farmers' Market Locations

Name	Address	City	County	Zip Code
Dale's Saturday Market	1296 Kennedy-Ford Road	Potlatch	Latah	83855
Grangeville Farmers Market	Heritage Sq., Main Street	Grangeville	Idaho	83703
Hilltop Farmers Market	Corner of Main & Pierce Streets	Weippe	Idaho	83553
Kooskia/Kamiah Farmers Market	Longcamp RV Park, Mile Post 68 on Hwy. 12	Kamiah	Lewis	83536
Lewiston Farmers' Market	525 D Street	Lewiston	Nez Perce	83501
Moscow Farmers Market	Friendship Square, 4th & Main Street	Moscow	Latah	83843
Moscow Food Co-op Tuesday Growers Market	5th and Washington Streets	Moscow	Latah	83843
Orofino Farmers Market	Orofino City Park	Orofino	Clearwater	83544

Source: 2013 Farmers Market Guide: Idaho State Department of Agriculture

Appendix B: Community Supported Agriculture Market Locations

Map #	Name	Address	City	County	Zip
1	Affinity Farm	810 Empire Lane	Moscow	Latah	83843
2	Clearwater Country Foods	1020 Berger Road	Genesee	Latah	83832
3	Deep Roots	225 E Henley St	Moscow	Latah	83843
4	Elk Meadow Farm and Nursery	1069 Elk Meadow Lane	Deary	Latah	83823
5	Jim's Year-Round Produce	23281 US HWY 12	Juliaetta	Latah	83535
6	Living Soil Microfarms	121 E 5th St.	Moscow	Latah	83843
7	Mary Janes Farm	1000 Wild Iris Lane	Moscow	Latah	83843
8	Raven Croft	4689 Hwy 95 N	Moscow	Latah	83843
9	River City Farms	Warner Ave. and 15th St.	Lewiston	Nez Perce	83501
10	Soil Stewards	875 Perimeter Drive MS	Moscow	Latah	83843
11	Spring Song Farm	3110 Darby Road	Moscow	Latah	83843
12	White Water Aerie Farm	Lot 9 Whitewater Wilderness Ranch	Riggins	Idaho	83549

Sources: Through USDA National Agricultural Library: Farm Directories - Local Harvest, Ecovian, & The Eat Well Guide

References

- Agenbroad, Ariel, Cinda Williams, Lydia Clayton, and Robert Tripepi. 2010. "A Marketing Strategy for Small Acreage Producers in Idaho." *University of Idaho Extension CIS*: 1173.
- Barnett, Cynthia. 2011. *Blue Revolution Unmaking America's Water Crisis*. Boston: Beacon Press.
- Black, Anne E., Eva Strand, Penelope Morgan, J. Michael Scott, R. Gerald Wright, and Cortney Watson. 1998. "Biodiversity and Land-Use History of the Palouse Bioregion: Pre-European to Present." *Perspectives on the Land Use History of North America : A Context for Understanding Our Changing Environment*. U.S. Geological Survey.
- Burt, Oscar R. 1981. "Farm Level Economics of Soil Conservation in the Palouse Area of the Northwest." *American Agricultural Economics Association* 63 (1): 83–92.
- Campbell, David C., Ildi Carlisle-Cummins, and Gail Fennstra. 2013. "Community Food Systems : Strengthening the Research-to-Practice Continuum." *Journal of Agriculture, Food Systems, and Community Development* 3 (3): 121–138.
- CEDA. 2013. "Clearwater Economic Development Association - Lewis County." <http://www.clearwater-eda.org/about-us/>.
- Clayton, Lydia, Cinda Williams, and Ariel Agenbroad. 2012. "Seasonal Eating Week by Week." *University of Idaho Extension CIS*: 1187.
- Clearwater County Idaho P&Z. 2013. "Clearwater County Comprehensive Plan."
- Cohen, J. N., S. Gearhart, and E. Garland. 2012. "Community Supported Agriculture: A Commitment to a Healthier Diet." *Journal of Hunger & Environmental Nutrition* 7 (1) (January): 20–37. doi:10.1080/19320248.2012.651393. <http://www.tandfonline.com/doi/abs/10.1080/19320248.2012.651393>.
- Farmer-To-Consumer Direct Marketing Act of 1976*. 1976.
- Farnsworth, Richard L, Sarahelen R Thompson, Kathleen A Drury, and Richard E Warner. 1996. "Community Supported Agriculture : Filling a Niche Market." *Journal of Food Distribution Research* 27: 90–98.
- Govindasany, Ramu, Venkata Purduri, Kathleen Kelley, and James E. Simon. 2012. "Influence of Consumer Demographics on the Demand for Locally Grown Ethnic Greens and Herbs Because of Food Miles Concerns: A Logit Model Analysis." *Food Distribution Research* XLIII (1).
- Hemenway, Toby. "The Foodshed: A Powerful Food Policy Concept."

- IDCL. 2012. “Smart Towns: A Guide to Growth Management for Idaho City and County Officials.”
- IDHW. 2013. “Idaho Public Health Districts.” *Idaho Department of Health and Welfare*.
- IDWR. 2013. “Idaho Department of Water Resources.”
- Imhoff, Marc L., David Stutzer, William T. Lawrence, and Christopher Elvidge. 1998. “Assessing the Impact of Urban Sprawl on Soil Resources in the United States Using Nighttime ‘City Lights’ Satellite Images and Digital Soils Maps.” In *Perspectives on the Land Use History of North America : A Context for Understanding Our Changing Environment*, 13–22. U.S. Geological Survey.
- ISDA. 2013. “2013 Idaho Agricultural Statistics.”
- Jones, Peter, Daphne Comfort, and David Hillier. 2004. “A Case Study of Local Food and Its Routes to Market in the UK.” *British Food Journal*.
- Kloppenborg, Jack, John Hendrickson, and G. W. Stevenson. 1996. “Coming in to the Foodshed.” *Agriculture and Human Values* 13 (3) (June): 33–42. doi:10.1007/BF01538225. <http://link.springer.com/10.1007/BF01538225>.
- Latah County Planning. 2010. *Latah County Comprehensive Plan*.
- Lewis County Idaho P&Z. 2009. “Lewis County Comprehensive Plan.”
- Lewiston Idaho P&Z. 1998. “Lewiston City Comprehensive Plan”. Lewiston. <http://www.cityoflewiston.org/index.aspx?NID=186>.
- Lobao, Linda, and Katherine Meyer. 2001. “THE GREAT AGRICULTURAL TRANSITION : Crisis , Change , and Social Consequences of Twentieth Century US Farming.”
- Magdoff, Fred. 2007. “Ecological Agriculture : Principles , Practices , and Constraints 1” 22 (2). doi:10.1017/S1742170507001846.
- Maizel, Margaret, Ralph Root, R. Denis White, Susan Stitt, Stuart Gage, George Muehlbach, and Leon Osborne. 1998. “Historical Interrelationships Between Population Settlement and Farmland in the Conterminous United States, 1790 to 1992.” In *Perspectives on the Land Use History of North America : A Context for Understanding Our Changing Environment*, 5–12. U.S Geological Survey.
- Martinez, Steve, Shellye Clark, Luanne Lohr, Sarah Low, and Constance Newman. 2010. “Local Food Systems : Concepts , Impacts , and Issues” (May).

- Martinez, Steve, Michael Hand, Michelle Da Pra, Susan Pollack, Katherine Ralston, Travis Smith, Stephen Vogel, et al. 2010. "Concepts , Impacts , and Issues" (97).
- Morrissey, Katherine G. 1997. *Mental Territories*. Ithaca and London: Cornell University Press.
- Moscow Planning Division. 2007. "Moscow City Comprehensive Plan". Vol. 329.
- Mundler, Patrick, and Lucas Rumpus. 2012. "The Energy Efficiency of Local Food Systems: A Comparison between Different Modes of Distribution." *Food Policy* 37 (6) (December): 609–615. doi:10.1016/j.foodpol.2012.07.006.
<http://linkinghub.elsevier.com/retrieve/pii/S0306919212000802>.
- Munier, Nolberto. 2005. *Introduction to Sustainability*. Ottawa: Springer.
- Nez Perce County Idaho P&B. 1998. "Nez Perce County Comprehensive Plan."
<http://www.co.nezperce.id.us/Departments/PlanningandBuilding/ComprehensivePlan/ComprehensivePlanHome.aspx>.
- Oberholtzer, Lydia, Carolyn Dimitri, and Gus Schurmacher. 2012. "Linking Farmers, Healthy Foods, and Underserved Consumers: Exploring the Impact of Nutrition Incentive Programs on Farmers and Farmers' Markets." *Journal of Agriculture, Food Systems, and Community Development*: 1–16.
- OED. 2013. "Food Systems and Economic Development Initiative." *Office of Economic Development*. <http://blogs.uidaho.edu/food-systems/>.
- Padmavathy, K, and G Poyyamoli. 2011. "Alternative Farming Techniques for Sustainable Food Production." Edited by Eric Lichtfouse. *Genetics, Biofuels and Local Farming Systems*. Sustainable Agriculture Reviews: 367–424. doi:10.1007/978-94-007-1521-9.
- PCFC. 2013. "Palouse Clearwater Food Coalition." *Facebook Page*.
https://www.facebook.com/pages/Palouse-Clearwater-Food-Coalition/188292204692541?ref_type=bookmark.
- Peters, Christian J, Nelson L Bills, Jennifer L Wilkins, and Gary W Fick. 2008. "Foodshed Analysis and Its Relevance to Sustainability" 24 (1). doi:10.1017/S1742170508002433.
- Ramu Govindasamy, Venkata Purduri, Kathleen Kelley, James E. Simon. 2012. "Influence of Consumer Demographics on the Demand for Locally Grown Ethnic Greens and Herbs Because of Food Miles Concerns: A Logit Model Analysis." *Food Distribution Research* XLIII (1).
- Reganold, J P, S S Batie, R R Harwood, J L Kornegay, D Bucks, C B Flora, J C Hanson, et al. "Transforming U . S . Agriculture": 9–10.

- Salkin, Patricia E, and Amy Lavine. 2010. "Regional Foodsheds: Are Our Local Zoning and Land Use Regulations Healthy." *Fordham Environmental Law Review* (22): 599.
- Sarah A. Low, Stephen Vogel. 2011. "Direct and Intermediated Marketing of Local Foods in the United States."
- Sullivan, Katie O. 2010. "Locavoracious: What Are the Impacts and Feasibility of Satisfying Food Demand with Local Production?" *Geoverse*.
- United States Department of Agriculture Economic Research Service. 2013. "USDA Economic Research Service - Local Foods."
- University of Idaho Extension. 2013. "Idaho's Growing Regions - Idaho Landscapes and Gardens."
- University of Idaho: OCP. 2013. "Indicators Northwest." <http://www.indicatorsnorthwest.org/>.
- US Census Bureau. 2012. "Idaho QuickFacts." <http://quickfacts.census.gov/qfd/states/16000.html>.
- USDA. 2013. "USDA Plant Hardiness Zone Map."
- Webb, Patrick, Jennifer Coates, Edward A Frongillo, Lorge Rogers, Anne Swindale, and Paula Bilinsky. 2006. "Measuring Household Food Insecurity: Why It's So Important and Yet So Difficult to Do." *The Journal of Nutrition* 136 (5): 1404S–1408S.