

Local Foods

EAT. ENJOY. SHARE.



An Outline of a North Dakota Local Foods System Plan

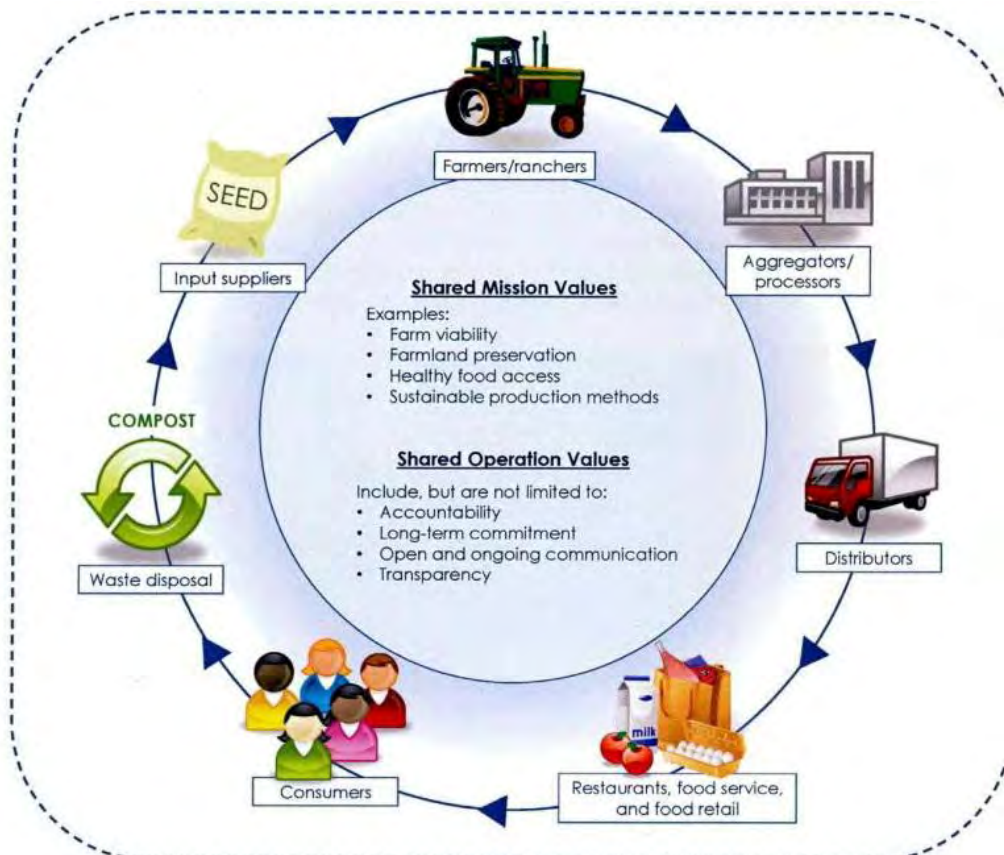
Executive Summary

The purpose of this document is to present a comprehensive outline that identifies key components for a strategic local foods development plan for North Dakota. It is the goal of USDA-Rural Development to increase the amount of local foods that is consumed by North Dakotans. It is a huge challenge that only can be met by a comprehensive planning and implementation strategy by all who work in a cooperative effort to make that happen. It is estimated that North Dakota could produce 82.9 % of our food requirements. This plan identifies some of the key elements that should be included in the comprehensive plan.

Local foods systems are comprised of many elements including production, harvesting, storing, transporting, processing, packaging, marketing, and retailing of the food. It requires a coordinated effort of the farmer, suppliers, buyers, and government. To effectively plan a local foods initiative often requires experts with technical assistance that may not be available in the community. Equally important to an effective local foods initiative is a marketing and promotional campaign where the community understands the importance both economically and nutritionally of the value of the foods produced.

Definition of a local foods system

Local food is defined by the US Congress in the 2008 Food, Conservation, and Energy Act (2008 Farm Bill). It states that a “locally or regionally produced agricultural food product” is one that is transported less than 400 miles from its origin, or with the state in which it is produced.



Why local foods and what are the advantages?

The National Good Food Network defines good food as “food products and practices that are healthy for the body, green for the planet, fair for producers and workers, and affordable for all. Good food values range from concerns for public health and social justice to demand for local economic and environmental returns.” Local foods have long been identified with high quality, nutritious, and freshness.

Some of the advantages of a successful local food system are:

- Reduces food costs
- Increased number of producers
- Supports family farms through increased income/profitability
- Increases employment
- Helps develop alternative commerce
- Helps the local economy

Demographics of ND

North Dakota has had some major changes in its demographics since the start of the oil boom in the Bakken. Here is a capsule of some demographics that might be good to keep in mind as a Local Foods System Plan is developed. North Dakota is moving towards a more urban state. Below are estimates of populations from the 2015 U.S. Census.

Population of North Dakota	757,952	Percentage of Increase Since 2010	9.90%
High School Graduation Rate	91.70%	Bachelor’s Degree	27.70%
Home Ownership Rate	64.10%	Median Household Income	\$57,181
Persons Below Poverty	11%		

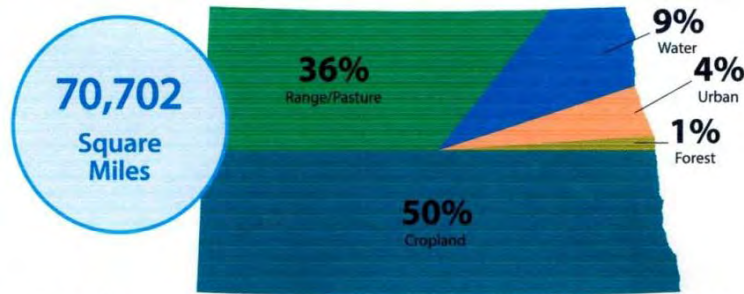
Four Largest Cities

Fargo	118,523	Cities with Populations 15,000 - 40,000	
Bismarck	71,167	West Fargo	33,597
Grand Forks	70,916	Williston	26,977
Minot	49,450	Dickinson	23,765
Total	310,056	Mandan	21,382
Percentage of Population	40.90%	Jamestown	15,422
		Total	121,143
		Percentage of Population	16%

Cities with Populations 4,000 - 15,000

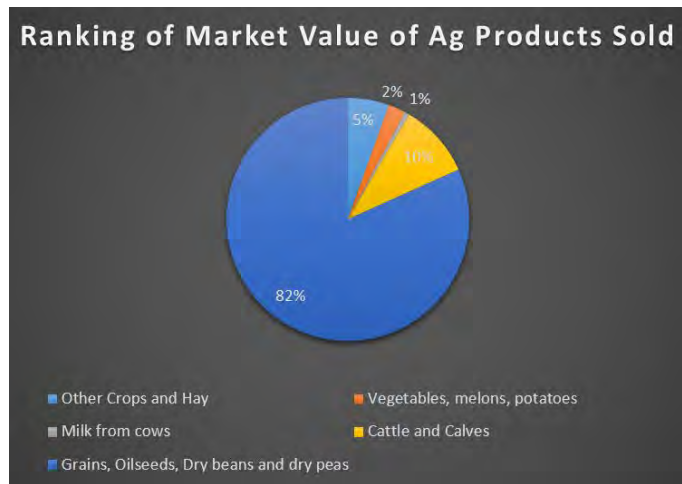
Wahpeton	7,899	Cities between 4,000-1000	42
Devils Lake	7,351	Total	72,292
Valley City	6,669	Percentage of Population	10%
Grafton	4,243		
Watford City	6,708	Remaining communities	301
Total	32,870	Total	221,651
Percentage of Population	4%	Percentage of Population	29%

North Dakota is comprised of 70,702 square miles.



North Dakota covers 70,702 square miles in a rectangular-like area at the center of the North American continent. Nine percent, or 6,363 square miles of the state's surface area is covered by water.

North Dakota has 39.3 million acres of farmland and leads the nation in a number of crops.



North Dakota's Rank in U.S Agriculture

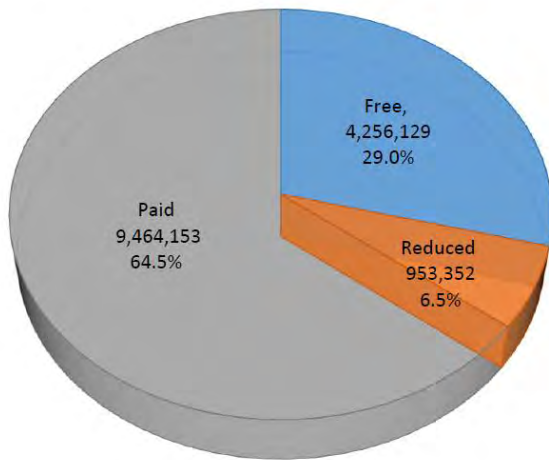
U.S. rank	Commodity	Number	Unit	% of US Total
1	Barley, production, 2015.....	67,200,000	bushels	31.4
1	Beans, Dry Edible, All, production, 2015	8,901,000	cwt	29.6
1	Beans, Dry Edible, Pinto, production, 2015.....	4,932,000	cwt	51.6
1	Canola, production, 2015.....	2,492,000,000	pounds	86.7
1	Flaxseed, production, 2015	9,315,000	bushels	92.3
1	Honey, production, 2015.....	36,260,000	pounds	23.2
1	Peas, Dry Edible, production, 2015	8,063,000	cwt	44.1
1	Wheat, All, production, 2015	370,023,000	bushels	18.0
1	Wheat, Durum, production, 2015	42,463,000	bushels	51.5
1	Wheat, Spring, production, 2015	319,200,000	bushels	53.3

Feeding Programs

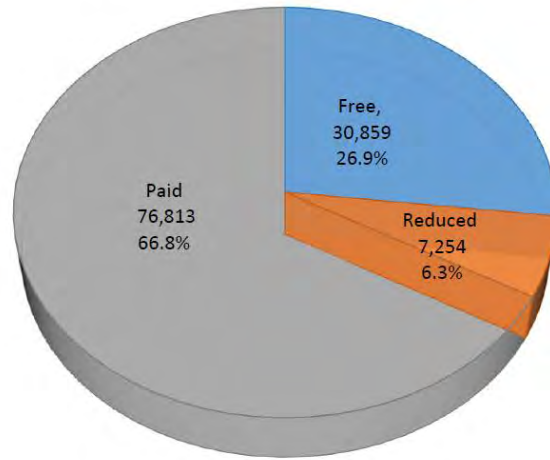
The state and federal government have many feeding programs. They can be big potential markets for local foods. Listed below are just some of the many programs that are available.

Schools

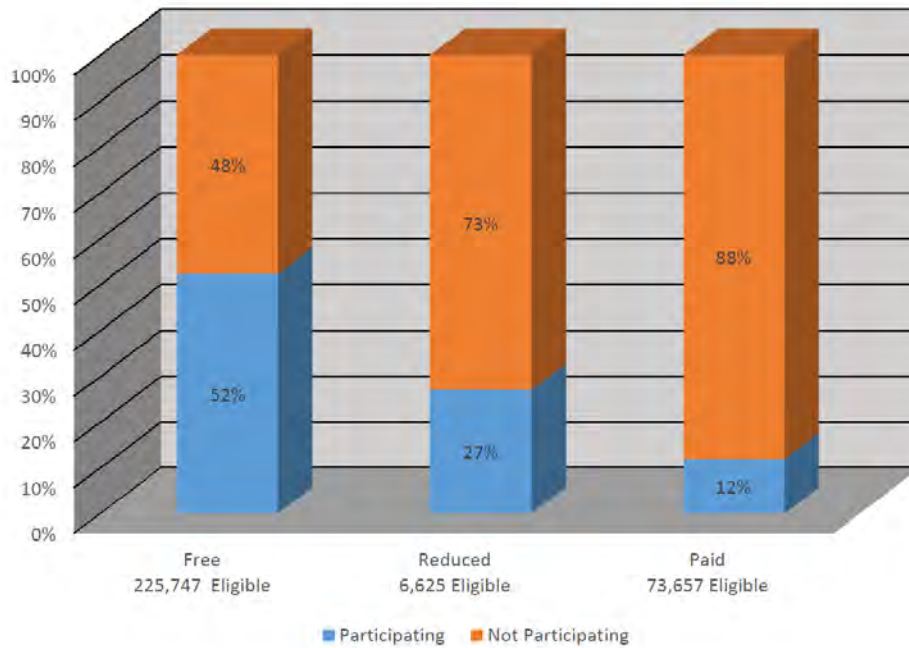
School Lunch Program - Meals Served



School Lunch Program - Eligibility



School Breakfast Program - ND Participation of Eligible Students



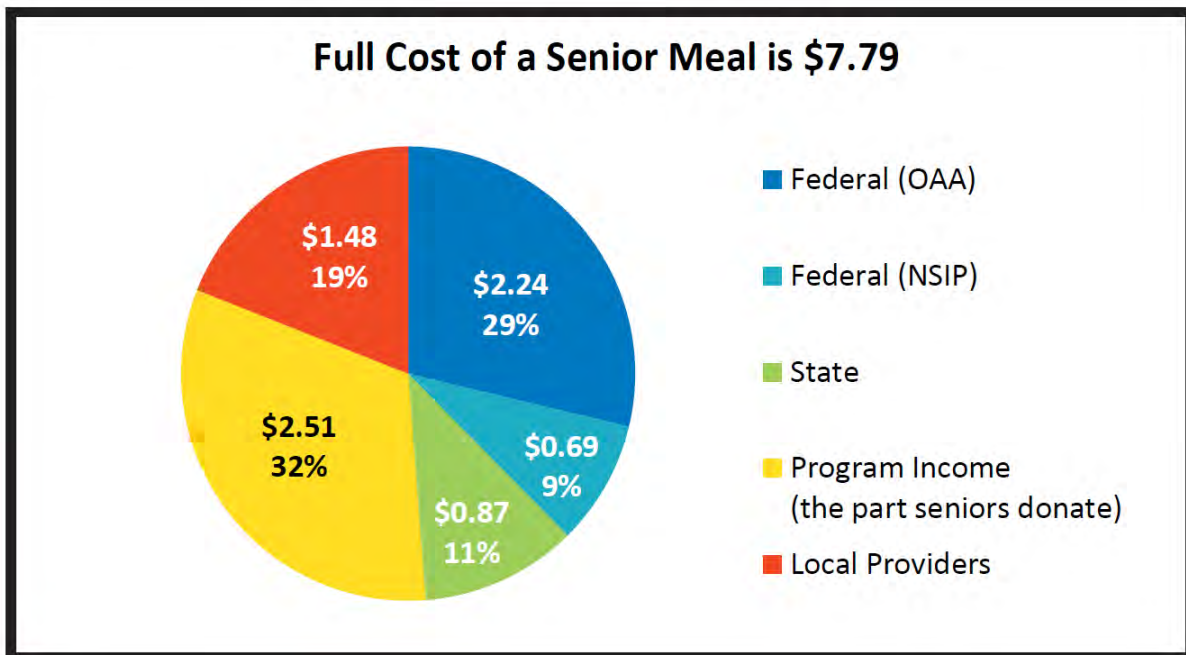
Infants and young children are served primarily through the Child and Adult Care Food Program (CACFP). CACFP plays a vital role in improving the quality of childcare and making it more affordable for many low-income families. In 2014-2015, there were 5,204,717 CACFP meals served.

Seniors

The Aging of North Dakota

Age Group	2000 Census	2010 Census	Difference	% Change
60 and older	118,985	133,350	14,365	12.1%
85 and older	14,726	16,688	1,962	13.3%
90 and older	5,271	6,505	1,234	23.4%

Information provided by State Data Center, NDSU, May 2012.



Currently there are 183 meal sites in North Dakota serving 13,994 congregate clients and 5,030 home delivered meal clients. In federal fiscal year 2011, 686,631 congregate meals and 480,547 home delivered meals were provided across the state by NDSSP agencies.

Incarceration Rates

DOCR Adult Services Inmate Population Information						
Inmate Population on December 31, 2016 (Male and Female)						
TOTAL COUNT: 1791						
NDSP 753, JRCC 439, MRCC 187, DWCRC 113, Non Traditional Beds 299						
Non-Traditional Bed Breakdown:						
Correctional Centers (Jails) 18, Interstate Compact 21, TRCC 102, BTC 83, GFC 18, MTPFAR 23, MTPMDN 5, FTPFAR 18, FTPMDN 7, LRRP 4						
Year	2011	2012	2013	2014	2015	2016
Admissions - Calendar Year	960	1181	1231	1399	1603	1624
Releases - Calendar Year	1025	1085	1191	1257	1526	1628
Inmate Count on December 31	1440	1536	1576	1718	1795	1791

The daily supervision count in North Dakota including supervised probation and people on parole as of December 2016 totaled 7,334.

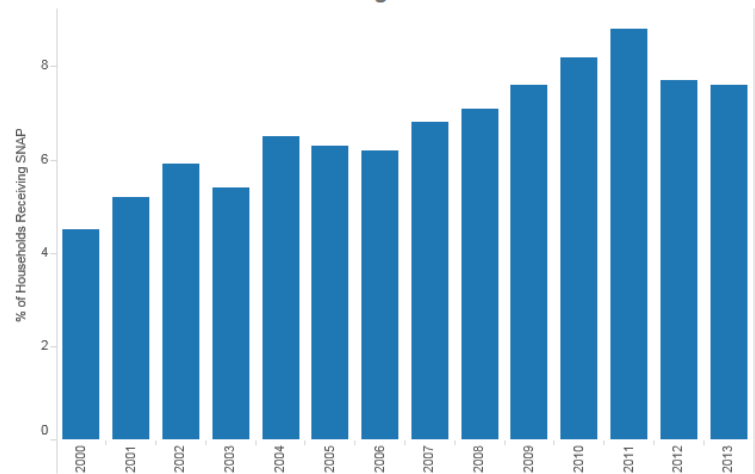
Supplemental Nutrition Assistance Program (SNAP)

SNAP, formerly known as the food stamp program, is the nation’s largest federal nutritional assistance program. It assists single people and families with little or no income to buy food.

In North Dakota, 73% of households receiving SNAP have income below the poverty line (about \$31,000 for a family of four in 2014), and 32% of households are in deep poverty, with income below 50% of the poverty line. Many households still struggle to put food on the table:

- 7.8% of households struggle to afford a nutritionally adequate diet.
- 2.4% of the labor force was unemployed in January 2015.
- 9.9% of the population lives below the poverty line.
- 12.2% of children live below the poverty line.
- 6.7% of elderly live below the poverty line

North Dakota Households Receiving SNAP Benefits



NOTE: Figures represent percentages of households receiving benefits over the past 12 months.
SOURCE: U.S. Census Bureau, 2000-2013 American Community Surveys.

Great Plains Food Bank

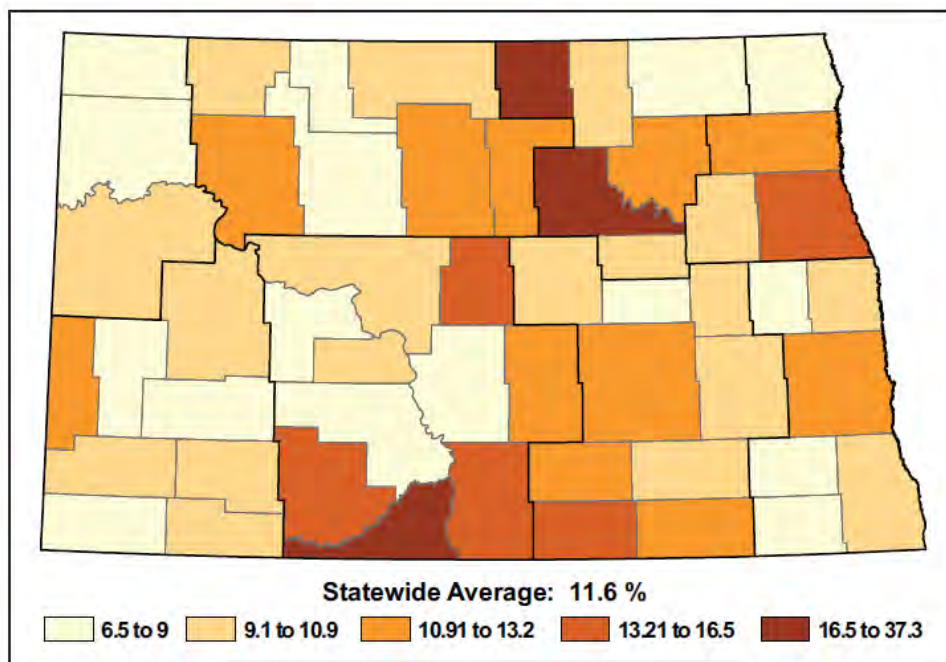
In 2016, the Great Plains food bank distributed 12.97 million lbs. of food (= 10.92 million meals), served 94,470... 36% are kids; 12% are seniors.

The numbers being served in these programs represent a great opportunity to try and capture a portion of those markets. But trying to do that is not an easy task. Here are some of the challenges:

- Those markets are very price sensitive
- Administrators of those programs need to look at the bottom line
- Meal requirements for nutrition content and food safety
- Purchasers want to deal with few vendors
- Cooking staff have limited time to prepare meals
- Storage facilities may not be adequate

Poverty in North Dakota

In comparison to the nation, North Dakota's poverty rates are showing improvements. North Dakota's poverty rate was estimated to be 11.6 percent of the population according to 2013 U.S. Census Bureau's Small Area Income and Poverty Estimates (SAIPE) data. Nationally, that average was at 15.8 percent.



Percent in Poverty by County 2013

Myths of a Local Food System

Myth #1 - Local foods competes with traditional agriculture.

North Dakota has 39.2 million acres of farm and ranch land.
Based on per capita annual consumption – the number of acres of fresh vegetables required to feed all of North Dakota:

Tomatoes	47	Cucumbers	49
Cabbage	266	Broccoli	530
Asparagus	475	Potatoes	1,328
Sweet Corn	730	Carrots	160
Cauliflower	49	Snap	
Onions	542	Beans	292

Total acres for these 11 crops totals 4,687

Myth #2 – Local Foods means only fruits and vegetables.

A North Dakota Local Food Initiative would include many products: Dairy – Milk, Cheese, Butter; Fish; Red Meats – Beef, Pork, Lamb, Bison; Poultry- Chicken, Turkey, Eggs; Grains and Pulses; Processed foods including grain.

Myth #3 - Local food production is not profitable.

Here are some numbers from Iowa State University utilizing 10,000 square feet of high tunnel production:



Local Food production is not profitable?

10,000 square feet of high tunnel 3 – 36' X 100 feet
Expenses: Less than ¼ of an acre

Production Expense	\$ 2,967	
Labor (Approx. 500 hours @ \$12)	5,958	(18 hour week for 7 months)
Amortize high tunnel	4,942	
Total Costs -----	\$ 13,867	
Gross revenue -----	\$ 48,222	
Net Return -----	\$ 34,355	
Net Return if you do your own labor -	\$40,313	

Or a return of \$80.63 per hour for 500 hours of labor and management.

Iowa State University numbers

Major Initiative Considerations:

Here are some recommendations for specific initiatives that should be considered. These are broad in scope and do not easily fit into just one of the 12 elements of the local foods plan that will be addressed later.

- 1) **The State of North Dakota, Federal Government agencies and Non-Government Agencies operating in the state will commit resources for a focused local food initiative in North Dakota.**
- 2) **Each county in the State needs to develop a local foods plan for their area utilizing the 10 assessment tools (or modifications thereof) in their planning process.**

In 2009, the North Dakota Department of Agriculture (NDDA) led an initiative to assist five counties in North Dakota to develop a local foods plan. Local committees of volunteers in the counties were recruited to interview potential stakeholders. NDDA provided each committee with questionnaires for ten different groups. From the information compiled they then went through a SWOT process to determine their strengths, weaknesses, opportunities and threats.

The local foods strategic process:

- Complete the 10 assessments
- Analyze the results (SWOT process)
- List potential projects
- Develop a team for each project
- Put together a detailed action plan for each process
- Constantly evaluate progress and make appropriate adjustments

The following is a list of the different stakeholders who should be surveyed to develop the plan:

- Producers
- Local government entities
- Grocery Stores
- Food Processors
- Restaurants
- Institutional buyers including schools
- Greenhouse, nursery, storage facilities
- Social Services
- Volunteer groups (fraternal organizations, 4-H, FFA, churches, master gardeners, senior citizens)
- Support entities (Extension Service, farm organizations, farm stores)

This process will result in having a good picture of the assets as well as the challenges that will be faced in encouraging the production, distribution, and consumption of local foods. It is necessary to have local people do the assessment so those people being interviewed will be

open and respond. It is a time-consuming process, but once done, can pay great rewards when local projects are started. If farmers, food processors, or retail outlets want to start or expand an operation, they have some good data that can be used to find equity partners or for financing.

3) Alternative methods for a distribution system for local foods should be examined to determine which system may be best suited for North Dakota.

A commonly used term in the local food business is “food hub”. The United States Department of Agriculture – Ag Marketing Service (USDA-AMS) defines a hub as:

A centrally located facility with a business management structure facilitating the aggregation, storage, processing, distribution, and/or marketing of locally/regional produced food products.

One of the main purposes of a hub is to provide producers with access to large volume markets that is not possible through farmers markets or community supportive agriculture (CSA). Hubs formed around the country are organized in a variety of ways – some are privately held but there are also hubs formed by nonprofit organizations, cooperatives, and even some are publicly held. In a few instances an informal organization is used, particularly with very small hubs or nubs.

Recommendations:

The following systems of distribution should be researched to determine which may best fit the needs of North Dakota:

1. Traditional system of local producers and local foods advocates get together to form a new entity (cooperative or otherwise) to develop a food hub or nub.
2. The development of a food hub by creating a joint entity that meets the distribution needs of both small local grocers and local food producers.
3. Seek to expand the role of traditional farmer owned local cooperatives to own and manage food hubs, relying on their management skills, physical facilities, and financial capabilities to build a reliable distribution system as well as a potential retail outlet.
4. Seek to piggy-back with the Great Plains Food Bank to expand their existing distribution system that would include handling production from small farms to be distributed state-wide.
5. Develop and implement a strategic plan for local foods for Native Americans living on reservations by complementing existing resources and activities by broadly expanding their scope with additional resources.

It is said that the four major barriers to access to healthy food are, all of which exist on North Dakota's Reservations:

- Lack of physical access ("food deserts")
- Lack of financial access
- Lack of knowledge about healthy food choices
- Lack of knowledge about preparation of healthy food

Recommendation:

A joint effort led by the USDA-Rural Development and the Standing Rock Tribal Government to create local foods sovereignty on the reservation should be undertaken. Support should come from all possible sources that can assist in this momentous project.

The Great Plains Food Bank has been feeding hungry North Dakotans for over 30 years. However, they are the first to admit that they have not cured hunger in North Dakota. The first step is to see that no one goes hungry. The second step, which the Food Bank and others are now pursuing, is to decrease the demand for hunger by advocating for other issues that cause hunger to happen – housing costs, transportation, medical needs. The effort at Standing Rock should follow that two step approach.

The Tribal government owns farm land on the reservation. Some of it has irrigation equipment. At one time, the Tribe farmed the land; however they encountered financial problems and now lease that out to area farmers, who grow the typical commodity crops grown in North Dakota.

It is not inconceivable that Standing Rock could be self-sufficient with food. In fact they could be exporters. The population of Sioux County is approximately 4,122. If we would just concern ourselves with the Sioux County portion of the Reservation, based on average (not good or excellent) yields from NDSU for these fruits and vegetables, these are the acres needed to plant to meet 100% of the per capita consumption of fresh vegetables for the various products.

Cantaloupes	5 Acres	Watermelon	9 Acres	Asparagus	2 Acres
Broccoli	5	Cabbage	2	Carrots	2
Cauliflower	1/3	Corn	7	Cucumbers	4
Onions	4.5	Snap Beans	1	Bell Pepper	5
Potatoes	12	Sweet Potatoes	1.5	Tomatoes	10

The total of all these crops is just less than 70 acres.

Other common vegetables eaten are celery, head lettuce, mushrooms, Brussels sprouts, eggplant, garlic roman, leaf lettuce, radishes, spinach, and squash, which NDSU has no production numbers on. It can safely be assumed that these would not take over 70 acres. That would total 140 acres.

Now we know we should be eating more vegetables than the per capita average of the US. So if we double the current average it would take approximately 280 acres to produce enough fresh vegetables for the people in Sioux County and they would be consuming twice the national average.

Americans eat about the same amount of processed vegetables throughout the year as they eat fresh vegetables. So if production was added to provide for that, it would take another 280 acres or a total of 560 acres. Add another 20 acres of pulse crops (dry edible beans, dry peas, lentils and chickpeas) and the total is LESS THAN A SECTION OF FARM LAND.

Taking back some of those irrigated acres that are now being leased to do this would make sense. It would be important to have the best possible management. The size of this endeavor would require some good equipment that would need to be purchased. But it would make the operation easier to handle. With the right promotion, scores of volunteers could be recruited, both inside and outside the reservation, to help with the harvest. Those individuals who have broken the law and need to provide community service could be called in to help. This bountiful harvest could then be distributed to the hungry. Processing capacity would have to be built to preserve the food for off-season consumption. This would provide much needed jobs for the unemployed.

Similarly, a strong effort needs to be made for meat supplies. It would take less than a 1,000 head of beef, 3,000 head of hogs and less than 200 sheep. Again, the acres are not that big that need to be dedicated to feed everyone. That is step one.

After all the kinks of production are overcome, then things would move to step two. Step two is to take this land and lease it back to Native Americans in small parcels (5-10 acres) who want to make a living in production agriculture. The large machinery used to start the project would be leased back to the individuals through a cooperative lease agreement between the many producers, so they can have the benefit of larger machinery without the high cost, since it would be shared.

All state, federal, and regional resources would be brought to bear to make this project successful. The Standing Rock Sioux Tribe could set aside a portion of the \$4.3 million settlement money which they will be receiving from the Interior Department to settle a claim that the US government failed to adequately compensate tribes while they managed education, law enforcement and other federal services.

There is no question that this would be a mammoth undertaking. It would require much coordination among a very diverse group of players. Tribal cultural sensitivities would need to be honored. But serious, dedicated people could make this happen.

6) Develop a pilot project on local foods in one region of the state that can serve as a model for others to duplicate and provide the resources and support to make it a success.

Early successes are important to gain momentum when working on new initiatives. A successful regional local foods initiative would do much to stimulate further growth throughout the state. The region could be chosen based on competitive applications. One of the criteria would be the submission of a satisfactory local foods assessment. That is one way to determine that the region is really interested. Another way would be for USDA-Rural Development to arbitrarily decide that they want to lead the initiative in the StrikeZone-StrikeForce Region (see below).

Either way, sufficient resources from state, federal, and local entities must be committed to the project since failure cannot be an option if we are looking for momentum.



StrikeForce Counties: Benson, Eddy, Kidder, Ramsey, Rolette, Sheridan and Sioux
StrikeZone Counties: Towner, Wells, McHenry, Emmons, Logan and McIntosh

Draft of what the project could look like:

- a. Work with communities in the region to complete and analyze the information contained in the food assessment surveys.
- b. Develop a reliable market for local foods – particularly fruits and vegetables
- c. Recruit producers in the region and work with existing producers to expand their operations to meet those market needs.
- d. Serve as a clearing house to provide referral service for producers, processors, distributors, and others looking to be involved in the initiative that needs technical assistance.
- e. Seek ways to extend the growing season to provide more fresh vegetables on a year round basis.
- f. Establish a baseline of current local food consumption so progress can be monitored and measured.

- g. Seek out available facilities for food processing and preservation of fruits and vegetables and promote their utilization within the region.
- h. Utilize the North Dakota Department of Agriculture mobile food processing center as a teaching tool as well as for processing.
- i. Develop an efficient food distribution system within the region.
- j. Assess current activities of local food banks and others working on hunger issues and work with them to fill those needs.
- k. Recruit partners (seniors, faith based, civic, and youth) to assist in the local foods initiative.
- l. Coordinate efforts with FARRMS on the Farm to School Program.
- m. Survey to determine current fruit production in the region and ways in which the production that is not currently utilized can be developed to feed the hungry.
- n. Look for opportunities to involve young people in the process, including the development of school gardens.
- o. Develop a public relations program that would encourage the consumption of more local foods.
- p. Provide an accurate journal of activities so this effort might be easily duplicated in other areas of the state.

Resource help through the VISTA Program would fit in well with this initiative.

Elements of a Local Foods System Master Plan

The below elements have been selected to be part of a local foods system plan in North Dakota. In each of those elements issues or challenges will be presented and recommendations for proposed strategies and activities will be summarized.



Elements of a Local Foods System Master Plan

A) Producer Developments:

The following groups should be recruited as producers to help reach the goal outlined in this document:

- Current producers who are supplying products to farmers markets and selling wholesale in North Dakota as well as the 25 CSA operations in the state
- Current farmers who are considering bringing family members back to join their operation but lack the land mass to do so
- Current traditional farmers who farm less than 1000 acres and are seeking higher gross revenues to stay in the business
- Current farmers who have irrigation available to expand their production to include fruits and vegetables
- Young people on the Native American reservations in the state where much is needed to improve their diets and develop an economic model for sustainability
- Students at the colleges and universities that are majoring or heavily involved in agriculture studies
- New arrivals in North Dakota who marvel at our landscape and have the interest and have seen experiences in other states or countries where local foods systems are more advanced than in North Dakota
- Livestock producers who are currently finishing cattle or hogs, either by selling them out of state or selling to individual consumers in their area.

B) Products

Dairy:

- What is needed is a design of a milk processing facility that may not have all the bells and whistles of super-sized processing facilities, but can still meet the requirements of Health Department regulations. The same is needed for the production of cheese and butter.

Fish:

- A review of the potential for fish production co-located with North Dakota electrical generating plants and North Dakota ethanol facilities.
- A scientific analysis of the potential of growing fish in existing prairie potholes in central North Dakota. This may include the raising of rough fish for feed in the potholes while the commercial fish are grown indoors. If that is not a viable option, an analysis should be made of possible use of growing plants in the potholes as part of a commercial enterprise. If such a viable crop could be raised, it would ease the current tension between farmers and federal and state regulators of those waters.
- Support for the teaching of aquaculture practices. Dakota College at Bottineau is designing a course or series of courses beginning in 2016. That program should be supported by funds direct from the Board of Higher Education, so it isn't a time-consuming effort to seek grant money that may not be sustainable over time.

Fruit:

- A massive effort should be initiated through an awareness campaign to promote the consumption of both fruits and vegetables. Small size literature should be made available to every farmer's market vendor manager for distribution to their vendors to be included with each purchase that is made.
- The community orchard program administered by the North Dakota Department of Agriculture should be continued and expanded.
- Greenhouse space at North Dakota State University should be made available for both fruit and vegetable trials.
- The Entrepreneurial Center for Horticulture should continue its excellent work in vegetable production and increase its efforts in fruit production.
- The NDSU Carrington Research Center should continue and expand its orchard and began to keep detailed records of production of the various fruits planted and make recommendations to would be producers on commercially viable fruits.

Red Meats:

- Maximize existing land use:
 - o Assist the North Dakota State Land Department in developing a program of land management that can increase grazing capacity of the land and provide more money for the school trust fund.
 - o Expand double-crop research and demonstration projects.
 - o Maximize the use of CRP lands for beef production based on current USDA rules.
 - o The Farm Service Agency should review their current rules to see if they can be adjusted within the scope of the law to utilize this resource as a livestock feed. They

should also make available at their county offices a list of potential producers who might take advantage of this resource.

- Maximize existing land use
 - o Develop programs that complement the work of the ND Grazing Lands Coalition
 - o A summit of the North Dakota Stockman's Association, Independent Beef Association of North Dakota (IBAND), North Dakota Department of Agriculture, NDSU Ag Experiment Station and Livestock Extension specialists, and the ND Grazing Lands Coalition should be convened by the Commissioner of Agriculture to see how these groups and others with similar objectives can be integrated into the overall effort to maximize the use of grazing lands in North Dakota.
- Maximize existing land use
 - o Encourage the use of traditional crop residues for livestock feed
 - o Examine other crop residues not currently being utilized for their value as feed such as flax shives, sugar beet leaves and aspen.
 - o The North Dakota State University Experiment Stations and Cooperative Extension Service should place greater emphasis on work and outreach in this area.
- Develop additional financing and risk management tools
- The North Dakota Industrial Commission should re-create the features contained in Senate Bill 2147(which they have the authority to do) that was passed by the 2005 Legislature. This legislation was passed with a sunset clause, so the program ended in 2009.

Pork Strategies:

A technical assistance program for hog producers will be covered in the section entitled Technical Assistance Program for Producers.

Bison Strategies:

- The North Dakota Native Americans through their tribal leaders in cooperation with the North Dakota office of USDA Rural Development should take the lead in developing a bison herd that would be used to provide a large share of protein in the diets of those Native Americans living on North Dakota reservations. There should be efforts made to provide space at the North American Bison cooperative for the processing of the animals and if that is not possible, a joint facility owned by the tribes should be constructed for processing.

Lamb Strategies:

- North Dakota is a small consumer of lamb and mutton. Nationally, American on a per capita basis eats only 300 grams or .7 pounds per person. As a result, no specific recommendations are being made with this species. The North Dakota Lamb and Wool Producers Association and the North Dakota State University Extension Service should be congratulated and encourage for their efforts with their "Starter Flock Program" for North Dakota kids aged 10-18.

Poultry Strategies:

- Discussions should take place between the members of the ND Turkey Council and their

processing plants to determine what it would take to brand those North Dakota turkeys being processed outside the state and have them returned and distributed through a local food distribution center in North Dakota as part of the Local Foods Movement.

- North Dakota State University Extension Service will review various chicken and egg production courses around the country and develop an on-line education program catered for small chicken and egg producers.

Vegetables:

- A massive effort should be initiated through an awareness campaign to promote the consumption of both fruits and vegetables. Small size literature should be made available to every farmer's market vendor manager for distribution to their vendors to be included with each purchase that is made.
- The Entrepreneurial Center for Horticulture should continue its excellent work in vegetable production and increase its efforts in fruit production.
- Greenhouse space at North Dakota State University should be made available for both fruit and vegetable trials.

Other recommendations:

Baseline enterprise budgets should be developed by the NDSU College of Agricultural Economics, the Cooperative Extension Service, or the Entrepreneurial Center for Horticulture at Dakota College as a guide for producers wishing to enter the vegetable business.

Expertise should be established at the NDSU Cooperative Extension Service that can provide advice and counsel on purchasing of equipment for small and medium size producers. That expertise should include knowledge of what kind of equipment that might be available, at what cost, and the location of the manufacturers or distributors of that equipment.

Efforts should be made to develop value added products to vegetables produced in North Dakota. This should be a collaboration of producers, ND processors, and food scientists at the research universities. A formal structure between these entities should be formed to identify potential products and to work with North Dakota entrepreneurs who can partner with the food operation at Nebraska Food Innovation Center and others on product development. Scholarships should be made available to those entrepreneurs for use at the Nebraska operation who show promise of being able to bring a new product to the marketplace.

Processed Food Strategies:

North Dakotans should be challenged to use their skills and their homemade recipes to enter contests for products such as are listed above for possible selection as new value-added products for the marketplace.

Recommendations:

- A high level team should meet with all food processing facilities interested in expanding their operations, similar to the effort made during the early 1990's by the Governor's office.
- The Commissioner of Agriculture should invite food processing companies to the annual meeting of the state commodity groups to discuss their possible role in the local foods initiative.
- An up-to-date list of approved commercial kitchens in North Dakota should be distributed to all groups working to increase local food production and consumption.
- A much expanded program to teach North Dakotan's on how to preserve food through canning, freezing, dehydration, and other means needs to be initiated.
- An economic analysis should be completed on the potential of increasing meat processing by having local processing plants slaughter and sell primal cuts, rather than further processing at their facility.
- A study on the barriers that North Dakota meat processors are facing that limit their expansion needs to be completed with suggested methods to overcome those obstacles. This study should include suggestions how those plants that only do custom slaughter can be upgraded to state or federal inspected facilities.
- A review of the current laws and regulations regarding poultry processing should be completed and an economic analysis of portable poultry processing units be made so the poultry industry can be a major part of the growth in local foods in North Dakota.
- The potential of a bison processing facility or a combination meat processing facility as outlined in recommendation 2r should be pursued if no agreement can be reached for processing bison at the North American Bison Co-op.

C) Marketing Plan

The marketing of local foods is one of the key elements in a successful local foods system. Experience has shown that farmers seem to be much better at producing food than marketing it. There is an old saying that one should do what they do best, and hire the rest. Previously in this document there is a recommendation to examine four possible scenarios for a food distribution system that could work in North Dakota. This section will not cover anything further on that her, but it is an important link in the chain to move the food from farm to fork.



Product

Previously we have identified the eight categories of products.

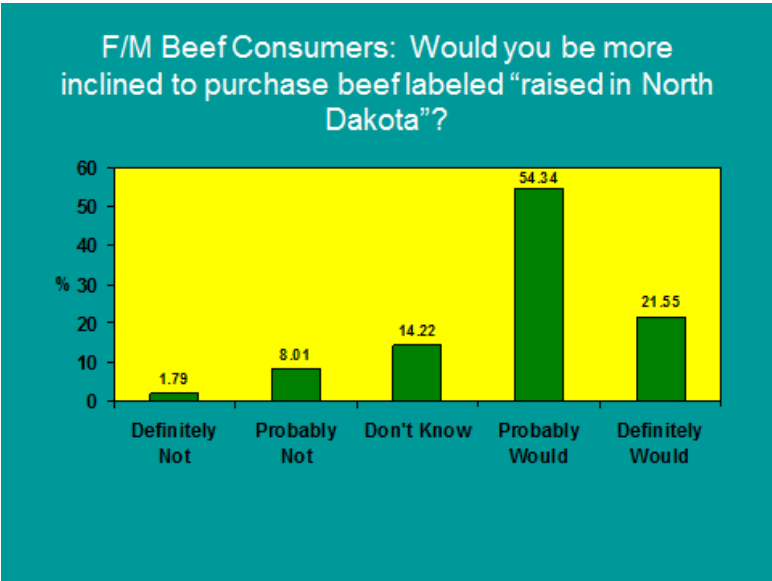
Price

It is often thought that local foods are higher in cost and is one of the obstacles in the local foods movement. That is not always the case. Sometimes prices are higher, and sometimes they are not. It is certainly important to be cost conscious as one builds a local foods system. But one must also recognize the value of the locally grown product in terms of quality and freshness as well as the overall economic advantage to the community in which it is raised.

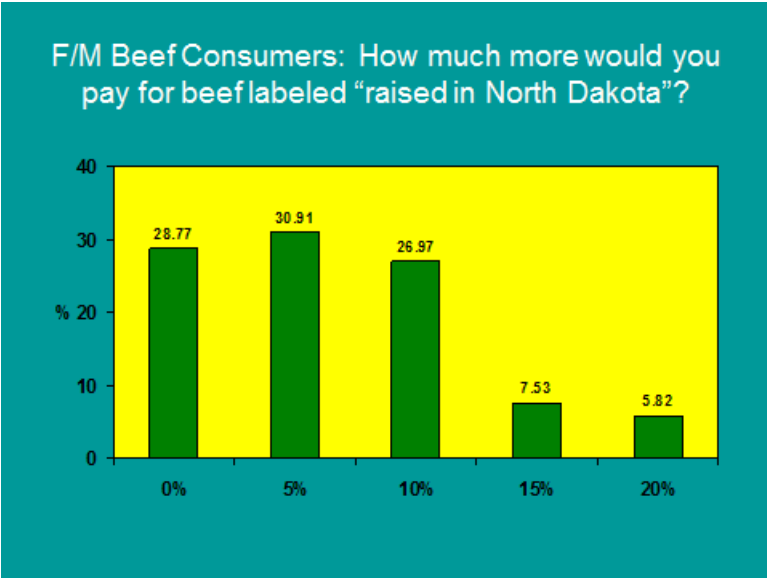
It has to be remembered that a successful local foods system must provide an economic return (or value) to everyone in the system if it is to be sustainable. That means everyone: Producer, Processor, Distributor, Retailer and Consumer.

In 2007, Kenneth S. Junkert for his Master's thesis at the University of Mary wrote a paper entitled Assessing Consumer Awareness – A Study of the Pride of Dakota Logo Promotion Program. In collaboration with the North Dakota Department of Agriculture, the Bureau of Government Affairs at the University of North Dakota did a state-wide poll. Consumers were asked whether they are more likely to purchase a product if the production origin is identified as North Dakota – 79% indicated that the production origin influences their purchasing decisions, while 19.8% indicated that production origin plays no role in their purchasing decisions. 51.7% indicated they would be willing to pay 1-10% more for a North Dakota product while 28.3% said they would not.

Similar results were found when the NDSU Animal Science Department conducted a survey of Fargo-Moorhead beef consumers.



When asked about price, this was their response:



A survey was done of prices charged by vendors at the Bismarck Farmers Market in the summer of 2015 and compared with prices for vegetables at a local super market. The results show that some commodities are higher at the farmers market and some are lower.

Comparison of Bismarck Farmers Market Prices to local Bismarck supermarket Summer 2015

*All number in pounds unless otherwise stated

Farmers Market

Bismarck Supermarket

Cucumbers	50 - 75 cents each	88 cents each
Beans	\$3.00 - \$4.00	\$2.48
Onions	\$3.00 /pound	\$1.18 - white

Beets	\$2.00/ pound	\$1.28 - yellow \$2.65/pound
Red or green peppers	50 cents to \$1.00 each	\$1.18 each
Hot peppers	3 for \$1.00	\$ 3.98/pound
Carrots	\$1.50 - \$2.00	\$1.97
Potatoes	60 cents	50 cents - \$1.00
Tomatoes	\$2.50	\$2.98 - on the vine \$1.98 - Roma \$6.00 - Cherry
Cabbage	\$2.00 for a 4 pounder	68 cents/pound
Cantaloupe	\$5.00 each	\$3.98 each

One of the real questions to be answered is if those farmers currently selling at the farmers market are willing to expand their operation and sell at wholesale prices through retail outlets.

Many often assume our meat industry can't compete with wholesalers outside of North Dakota because of the higher costs of slaughter due to the scale of their operations. However, a study was conducted by taking a beef to a North Dakota state inspected slaughter plant. The cost of the animal (based on Midwest dress price) and the processing costs were added up and compared to the purchasing of the same cuts at a Bismarck Supermarket. The cost per pound of the North Dakota purchased meat was \$5.12 per pound on average compared to \$7.24 for similar cuts purchased at the Bismarck retail outlet. That is a 42% savings. Those numbers would indicate that North Dakota producers could compete by selling their beef wholesale to a North Dakota retail outlet.

Promotion

Most local food producers have a story to tell. The question is how they can do that effectively. It gets more complicated when product is aggregated and the identity directly back to the producer might be lost. But there are countless ways that local food groups across the country have put together to effectively promote their products.

Placement

When designing a marketing strategy one needs to look at trends. Online purchasing is becoming much more popular. Business Insider predicts that online sales will grow at a compound annual growth rate of 21.1% each year, reaching total sales of nearly \$18 billion by 2018. Distribution centers for local foods need to seriously assess whether they can compete to reach that market.

In the earlier portion of this document, the potential of selling into the institutional market was illustrated by the large number of people currently being fed through government programs. As previously stated, the goal of 20% of North Dakotans food consumption can't happen if only direct purchases through farmers markets and Community Supported Agriculture (CSA) are done. Here is a listing of some potential institutional markets in ND.

Potential Markets

- Schools
- Child care centers and homes
- Colleges and universities
- Prisons, jails, and detention centers
- Hospitals
- Nursing Homes
- Senior feeding programs
 - Home-delivered meals (“Meals on Wheels”)
 - Senior Centers
- Food pantries and soup kitchens

The advantages of institutional markets are many, despite some of the pitfalls:

- Can reach a large number of people in a single sale
- Administrators are often community leaders with local loyalty
- Can reach some of the people who will benefit most and are most in need

Recommendations:

- A much greater emphasis on cooking and preserving food through formal classes throughout the state which will result in a greater demand and usage of locally produced products.
- Barriers that exist need to be overcome so the mobile food processing unit owned by the North Dakota Department of Agriculture can be better utilized.
- A full time person should be hired at the ND Department of Public Instruction (DPI) with the responsibility to work with School Lunch Administrators to help remove the current barriers that prevent them from buying more local foods and a full time person should be hired at the North Dakota Department of Agriculture to work in conjunction with the person at the Department of Public Instruction to help develop producers that would meet the demand for local foods created by the DPI staffer. Efforts should be made to have Food Corp become a presence in North Dakota.
- A major effort should be mounted to work with hotels that host conventions to remove whatever barriers that exist so local foods are a regular part of convention meals.
- The promotion of local foods through the use of videos entitled “Face of the Farmer” by making them available to restaurants who wish to participate in the program.
- A coordinated effort should take place between all state agencies and private non-profit organizations who have potential involvement in local foods to maximize the use of Public Service announcements on radio and TV. Additionally, a concentrated effort should take place to have local food advocates appear on noon-day shows and local access TV.

- A comprehensive marketing strategy for all local foods needs to be developed by perhaps utilizing those programs in other states that have been successful.
- At least seven additional FTE positions should be added to the North Dakota Department of Agriculture to assist in the various aspects of

D) Financing

There are countless programs that are available for financing production, processing, and distributing local foods. The federal government has a particularly wide range of programs, some of them include grants.

Recommendations:

- The list of programs outlined in this document should be placed on all web sites of those organizations and governments that are working with local foods.
State and federal agencies with finance programs need to step up to the plate and do more promoting of the programs they offer. It is not sufficient just to have them there with the hopes that someone will inquire about them.
- State and Federal governmental agencies should contribute funds towards hiring a professional grant writer on a one time basis to research and prepare a document for public use that would list private organizations within the region and state that over grants that could be used in all phases of local.

E) Save our Farmstead (SOF)

There are hundreds of abandoned farmsteads in North Dakota. They provide a great opportunity for the production of vegetables, whether traditionally or by utilizing greenhouses and high tunnels. Many also have trees which would provide shelter for small animal production. Additionally those trees provide protection from potential drift of farm chemicals that may be applied to land nearby that could be harmful for broad leaf vegetables. Some may still have houses that are livable or could be brought up to standards with a little work.

There certainly will be some landowners who have no interest in renting or selling abandoned farmsteads. But for those who might have an interest a formal **Save Our Farmstead Program** should be established. A three prong approach is required to make this program work: 1) Identify abandoned farmsteads 2) Identify those owners who have an interest in renting or selling the farmstead 3- A clearinghouse for potential producers to make contact with land owners

- Contact should be made with all rural electric cooperatives and rural water cooperatives to seek their assistance and support to identify those farmsteads that they currently or previously have served that currently have no one living there.

- Seek supports through a joint effort of the North Dakota Farm Bureau and the North Dakota Farmers Union through their local county organizations to further identify those farmsteads, compile a list of those currently vacant, and determine if the landowner has any interest in renting or selling those homesteads. Assistance could come from local township supervisors.
- Create a clearing house or web presence where potential producers can conduct those interested in selling or renting their farmstead.
- Contact information for the local rural electric cooperatives and the local rural water systems can be found in Appendix 6.
- A companion program to utilize vacant lots in our small towns for food production should also be examined.

F) Technical Assistance Program for Producers

- A detailed list of current technical assistance and training programs should be developed by all those who are part of the local foods movement. They should include, but not limited to the following organizations: FARRMS, Northern Plains Sustainable Agriculture, Entrepreneur Center for Horticulture, Cooperative Extension Service, the five business incubators operating in the state – Idea Center in Bismarck, Center of Innovation and Technology in Grand Forks, Center for Technology Enterprises and the Regional Small Business Center in Fargo and Standing Rock Sioux Tribe/Sitting Bull College in Ft. Yates, as well as all federal and state agencies operating in North Dakota dealing with local foods operating in North Dakota.
- A strong formal mentoring program needs to be developed for both crops and livestock production. A sample plan written for livestock by the North Dakota Department of Agriculture in 2012 but never initiated can be used as a guideline.
- More training opportunities and increase adoption of season extension technologies (including high tunnels and low-cost sustainable year-round greenhouses for winter production) should be developed to help increase crop production.
- Intern programs such as one conducted by FARRMS for producers should be continued and state and federal agencies should assist in providing funding.
- Provide increased technical assistance to producers in the beef industry by providing expertise and protocols for feedlots in these and other areas:
 - a. Facilities upgrades
 - b. Finances
 - c. Nutrition
 - d. Health
 - e. market and risk management
 - f. waste management

- A finance and technical assistance program to increase hog production in the state should be initiated following the Cloverdale Alliance model of 2004-2007 era.
- Gear up the Farm Management program to provide assistance to vegetable producers.

G) Food Safety

Overview:

- Food safety must be a major concern of all those along the food chain. A local foods system cannot be sustainable if those participating do not understand or follow good safety practices. It is demanded by the buying public and those in the whole distribution system. North Dakota does not have a uniform standard for food safety with Health Units and the State Health Department often having conflicting rules. Despite efforts over the years by interested groups, the local Health Units and the State Health Department still have conflicting rules which growers must deal with in every jurisdiction that they do business in. Efforts by producers to get a uniform food safety system have fallen on deaf ears with the regulators.
- A committee comprised of representatives of the ND Farmers Market and Growers Assn, Northern Plains Sustainable Agriculture Society, FARRMS, Entrepreneur Center for Horticulture at Bottineau, the ND Department of Agriculture, North Dakota Cooperative Extension Service and USDA-Rural Development shall seek input from their various constituencies and convene to draft a policy to solve the current situation. That draft should then be presented to the Interim Committee on Agriculture of the North Dakota Legislative Council for their consideration for the 2017 North Dakota Legislative Session.
- A coordinated program from amongst existing agencies needs to be developed so there is a continual program statewide to receive proper training on food safety for producers.

H) Soil Health

- A list of commercial companies who specialize in soil testing and crop health in North Dakota should be produced and maintained as a source of information for producers to quickly access. This should include a directory of resources available through the Cooperative Extension Service.
- An on-line program regarding soil health should be initiated. Topics included should be included but not limited to the following:
 - a. Land use between combined vegetable and livestock operations
 - b. Crop rotation of vegetables to prevent pathogens
 - c. What residues to remove from the soil
 - d. Procedures to manage soil broken for production for the first time
 - e. Basics on techniques to adjust PH for best production results

- f. Advantages and disadvantages of no-till.
- g. How to take soil tests
- h. Proper techniques for irrigation
- i. How to increase organic matter in soils
- j. Soil compaction and how to reduce it
- k. Effects of tiling on production
- l. Discuss the advantages of the current trends and best practices currently advocated by agriculture production experts:
 - Manage more by disturbing soil less
 - Diversity crop planting with different species
 - Grow living roots throughout the year
 - Keep the soil covered as much as possible

l) Beginning Producer Resource Manual

- It is important that beginning producers have easy access to technical production information related to raising the crops or livestock that they will be producing. Equally important are resources regarding general business and marketing practices which are needed for a successful operation.
- There currently are some excellent programs already being conducted around the country to help beginning producers. Iowa State University has a Resource Guide for Beginning Farmers. Cornell University has on-line courses that are available at \$200 per course as well as a library where books on specific topics can be purchased either in hard-cover or electronically ranging from \$26 to \$38 each. A web site entitled www.beginningfarmers.org has a long list of free resources that can be accessed for producers. There are countless other places having similar information.
- Creating a beginning producer resource manual specifically for North Dakota producers would be expensive and unnecessary considering the information that is currently available elsewhere. However, there are two recommendations that could be helpful for new producers:
 - NDSU should encourage a graduate or under-graduate school student to compile a list of available programs and literature from throughout the United States specifically targeted to beginning producers and make that information available to all group leaders of the Local Foods Movement in North Dakota. This information will prepare beginning producers to information that will make them more successful.
 - A scholarship program should be established that would be available to beginning producers who qualify to help offset the cost of those programs that are available where a tuition fee is charged to participate.

J) Insurance

- The USDA Farm Service Agency (FSA) should conduct a major outreach program to new and potential fruit and vegetable producers about the new provisions which provide for federal crop insurance revenue coverage for these commodities.
- The ND Farmers Market and Growers Association should review the potential of assisting in the establishment of a local farmer's markets group liability insurance plan for its members.
- The ND Farmers Market and Growers Association should review the potential of making available a group health insurance program for its members.

K) Local Foods Council

- The establishment of local foods councils is a fast growing phenomenon of the local foods movement in the United States. It is a place to focus on both public policy issues as well as promote the increase access to local foods. The only local foods council currently operating is the Cass-Clay Food System Advisory Commission. It includes representatives from Cass and Clay county government, and representatives from the city of West Fargo, Fargo, Moorhead, and Dilworth as well as private sector members. A copy of their joint-powers agreement entitled Joint Powers Agreement – Cass Clay Food Systems Advisory Commission is attached in Appendix 12a.
- After each community (or county or region) completes their local food assessment, they should formalize their work by creating a local foods council. These councils can provide input on public policy issues to local governments as well as state government.
- Interested stakeholders should encourage the State of North Dakota to initiate a State Local Foods Councils.

Summary and Conclusions:

This document contains an outline of what can be done to move North Dakota forward with a local foods system. The process of developing a system is hard. To get people to work together to maximizing their efforts is not easy either.

The five major initiatives outlined in this document are excellent starting point to make things happen. The successful completion of those initiatives would move the local food movement forward by leaps and bounds. The recommendations proposed in the 12 elements, if enacted, would serve to provide the resources to help those initiatives be accomplished and build a program that is sustainable. But we shouldn't kid ourselves. There are strong economic forces working against a local foods system and it will take diligence to overcome them.

In a conclusion, here are the actions that are required to get the job done:

- 1. A Vision and commitment for a strong local foods system through all levels of government**
- 2. A detailed assessment of the assets and barriers in every community of region in North Dakota**
- 3. A strong technical assistance program for producers**
- 4. A vibrant food processing industry**
- 5. A fast, efficient, cost effective distribution system**
- 6. A system that maintains a high priority for food safety**
- 7. A strong promotional program to encourage healthy eating through the purchase of local foods.**