Thunder Valley Community Development Corporation (TVCDC) conducted the Oglala Lakota Nation Food System Assessment in 2014 in order to increase food system sovereignty on the Pine Ridge Indian Reservation. The food system was assessed by gathering information from all sectors of the food system using existing data, focus groups, a survey, and key informant interviews. The vision of this project is to work toward sustainable, systemic change that will lead to a healthier and more prosperous community. This project, as completed by Thunder Valley and its partners, will realize its vision by working toward the following goals:

1. Improved food access on the Pine Ridge Indian Reservation.
2. Increased food system sovereignty.
3. Improved nutrition and public health.
4. Decreased economic burdens on low-income families and increased economic opportunities.

Community Demographic Data

The Food System Assessment was completed on the Pine Ridge Indian Reservation, which is located in southwestern South Dakota and is home to over 30,000 community members. It encompasses 11,000 square miles and shares the geographic land base with all of Shannon County and portions of Jackson and Bennett Counties. The Oglala Lakota people have been in this region for thousands of years living off the land and its natural resources in a symbiotic and sustainable relationship. Today, Pine Ridge is one of the most impoverished census tracts in the United States, with 48 percent of individuals and 51 percent of minors falling below the poverty line. Unemployment rates hover around 70 percent, and the median household income on the reservation is only $29,169, compared to $52,250 in the United States as a whole. About 43% of families rely on tribal government housing.

The Oglala Lakota people thrived for centuries as a self-sustaining community. They used the bounty of their local environment to provide sustenance, meeting the needs of the community. In modern times, 95% of food and basic goods are hauled onto the Oglala Lakota Nation by truck. According to the U.S. Department of Agriculture...
(USDA), the area is classified as a “food desert,” a place “without ready access to fresh, healthy, and affordable food,” where the residents have both low income and “low access to a grocery store or healthy, affordable food retail outlet.”

Like many other food deserts, the existing Pine Ridge Reservation stores offer food that is expensive and is comprised more of “junk foods” than foods that promote optimal health. Food deserts disproportionately impact socially segregated groups, such as those on reservations, and particularly single mothers, children, and the elderly. Families and individuals without a car are also at a higher disadvantage in terms of their access to healthy foods in food deserts, and this is a chronic problem for families on the reservation. According to USDA figures, 17% of households have no car, and this number is probably low. There is very limited public transportation on limited routes during limited hours. The closest access to an affordable variety of foods may be nearly two hours away in Rapid City, as confirmed by the survey completed for this project, which is discussed below.

Community Food Sovereignty

Food sovereignty is defined by Drs. Michael W. Hamm and Anne C. Bellows as a state of being in which “all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice.”

As noted above, the food system that currently serves the Oglala Lakota people is not nutritionally adequate. The reservation is served by two small grocery stores in Pine Ridge and Kyle, which are 54 miles apart and serve an area that stretches from Wanblee to Oglala, a distance of 107 miles. There are five convenience stores in Pine Ridge, Kyle, Wanblee, Manderson, and at Sharp's Corner. The latter is in the Thunder Valley community. Many families are reliant upon the convenience stores, which provide foods that are pre-packaged and high in sugar, fat, and salt. Their profit margins are built on cigarettes and sodas. Little produce is available and, when it is available, it is located at the back of the store and is often not fresh. Whole wheat and organic alternatives are completely unavailable on the reservation, except for the few families that raise their own produce.

Local residents have little control over the purchase of food by the stores. Food outlets on the reservation purchase their products from an outside company, and it is trucked onto the reservation. Residents have even less control over the food provided
from other sources, such as the commodity foods program, charities, school lunches, and the elderly nutrition program. Generally, these sources focus on food that is pre-packaged, starchy, and high in salt and that is not fresh, nutritionally balanced, organic, or whole grain.

The commodity food program is a major source of food. It provides 75 staple food items, such as white rice, dried beans, and dried milk, as part of a federal program that is administered by the tribal government. In December 2014, the program served 1,531 households, which included 4,003 individuals, or approximately 13% of all Pine Ridge Reservation residents.

Several other federal government programs also serve the reservation. Most students on the reservation rely on school-based breakfasts and lunches during the school year. The elderly nutrition program serves about 100,000 meals per year. While federal food programs on tribal lands are subject to treaty and trust obligations, each of these programs is still vulnerable to federal budget limitations, brings outside foods onto the reservation, and may not promote optimal health. Little information is available about the amount of food provided by charities, but this is a substantial contributor to the reservation diet, coming from multiple sources.

As the above indicates, the food system does not promote community self-reliance. It also is not sustainable because there is a lack of local control of the land and because locally-produced food is sold elsewhere. According to tribal government figures, 70% of the Oglala Lakotas’ land base is used for grazing and agriculture, and cattle ranching and farming are the reservation’s major economic activities. This sounds like there is a substantial local food supply, until one looks at the system more closely.

While U.S. government censuses are known to be less-than-accurate on reservations, the federal Department of Agriculture’s (USDA) 2007 and 2012 Census of Agriculture provide an outline of the situation. The USDA defines a “farm” as “any place from which $1,000 or more of agricultural products were produced and sold...during the census year.” This omits local gardens. The 2012 data indicate that no acres on the reservation were planted in vegetables, orchards, berries, melons, or squash. Instead, the planted acreage focused on wheat. About 50% of U.S. wheat is currently exported to other countries, which certainly doesn’t promote food sovereignty for the Pine Ridge reservation. A similar pattern is present for beef, the other major agricultural output on the reservation.
As the result of history, discriminatory lending practices, and federal policy, most farmers and ranchers using Oglala Lakota land are non-Indian. This is not unusual on reservations. About 95% of the Pine Ridge Reservation’s residents are American Indian, depending on the source used. Yet, according to the USDA, just less than half of the farm and ranch operators were American Indian. The tribal government and Bureau of Indian Affairs control leasing for Oglala Lakota lands, and some leases have been ongoing for as much as seventy years.

In addition, non-Indian farmers and ranchers on the reservation make more money and put more focus on agriculture than Indian farmers. The average market value of the agricultural products sold by Indian farmers and ranchers in 2007 was only 57% of the value of products sold by non-Indian farmers. 2.3 times as many non-Indian farmers as Indian farmers had agriculture as their primary occupation. Clearly, these statistics are related, as Oglala farmers would be more likely to have agriculture as a primary occupation if they made more money from farming and ranching. In addition, efforts to provide local food to local people, rather than to international markets, would have important impacts on the local economy, diet, and self-reliance.

Only a handful of ranchers on the reservation produce buffalo, the traditional food staple of the Oglala Lakota people, and the trend is toward fewer producers. Buffalo are more suited to the northern Great Plains than cattle, being more hardy and independent. For example, in a major early blizzard in 2013, around 45,000 cattle died, while only 61 buffalo perished – 40 of them caught in one corral. Buffalo also have fewer negative environmental impacts and more healthy meat than cattle. Buffalo were nearly eradicated in the late 1800s by federal government policy, but have made a comeback and could again become an important food staple for the Oglala Lakota people.

Several groups on the reservation, including Tanka Fund, Native American Natural Foods, and the tribal government, are making efforts in this direction. They are working to overcome important obstacles, including the facts that:

• it takes longer to raise buffalo for market than cattle,
• the current infrastructure favors cattle,
• buffalo have a more difficult personality than cattle, and
• there is a general belief among buffalo producers that their efforts are being sabotaged by cattle producers, who are the most powerful economic and lobbying group in western South Dakota.
Currently, the tribal government herd does provide meat for ceremonies, funerals, and other special events. With adequate support, buffalo could provide an important and culturally-appropriate source of protein and other goods.

So, by many measures, the food system on the reservation does not increase community self-reliance and social justice. The food system is also not culturally acceptable, as it provides few of the foods originally consumed by the Oglala Lakota people. In addition to buffalo, the current food system provides little wild game, timpsila (prairie turnips) and other roots, and chokecherries and other berries -- and only small amounts of ceremonial and medicinal plants. Some important ceremonial and medicinal plants have been over-harvested, and the tribal government has stepped in to protect them. The existing food sources are also not always safe, as evidenced by the temporary closure of the largest grocery store on the reservation in 2012 due to the store’s sale of outdated meat.

The food system on the Pine Ridge reservation fails by all measures to provide food sovereignty for the Oglala Lakota people who live there. The food system particularly fails to provide nutritionally adequate food that is culturally appropriate and that promotes social justice and self-reliance.

Nutrition and Health

One of the results of the lack of food sovereignty on the reservation is diet-related health problems. The relationship between food insecurity and health problems is well established. When people live with food insecurity, they get too many calories from foods that are processed and high in refined carbohydrates, salt, sugar, and fat. The variety of food choices decreases, and fresh fruits and vegetables become scarce. People fall into a cycle of over-eating when food is plentiful and food deprivation when it is not. Neither is healthy.

It is no surprise, then, that according to the Indian Health Service, American Indians generally have a rate of diabetes that is three times the national average, including a diabetes-related death rate that runs about 3 times higher than the national average. On the Pine Ridge reservation, as for Indians generally, estimates suggest that about 50% of the population over age 40 is diabetic. Life expectancy for American Indians is about five years less than for the U.S. population as a whole, and this difference is commonly cited as being much larger for the Pine Ridge reservation.
Detailed data on the rates of diseases on the reservation were not available from the Indian Health Service, due to data privacy concerns. However, information from the Centers for Disease Control and the National Congress of American Indians indicates high rates of several additional diet-related health concerns among American Indians, including twice the overall population’s rate of heart disease, high blood pressure and cholesterol levels, and widespread obesity. Food security specialist Brenda Broussard extends the risk to gestational diabetes and stress.

In a number of American Indian communities, the responses have included increasing the intake of culturally-appropriate foods and efforts at local control of the food supply. The Oneida Nation, for example, has a successful program that includes gardening, food-related training, food processing, and food distribution. Pueblo communities have set up a mobile grocery truck. Alaska Native communities have banded together to combine increased food security, better health, and economic development.

It is important for the Oglala Lakota to look at what has worked for people in similar circumstances. As a case study on the Tohono O’odham put it, “Native peoples from the deserts of Arizona to the ice flows of Alaska are actively seeking to redevelop the ways of producing, processing, distributing and consuming foods that have nurtured both body and spirit for generations.”

A Healthier Food System

What would a healthy food system look like for the Oglala Lakota nation? The First Nations Development Institute suggests that the goals for a sovereign food system should be:

- Access to food as a basic human right
- Elimination of hunger and food insecurity
- Building more local and regional food self-reliance and thriving local economies
- Creating a more democratic food system that gives communities a greater role in deciding how their food is produced and distributed
- Making the food system more equitable and socially just
- Developing environmentally sustainable food production and distribution systems
- Teaching young people in food production and preparation, and connecting them to other community issues through food traditions
- Preserving and celebrating culture through food.
These goals dovetail with the goals for this project, and most of them are covered in other parts of this discussion. Only a few goals will be discussed in more detail here.

The latter point is important in some unexpected ways. One issue that arises, but that can be difficult to deal with, is the definition of “traditional” foods. Any food with flour, for example, was not part of the Oglala Lakota diet until relatively recently, but such foods are universal at community feeds. The few current food businesses on the Pine Ridge reservation include two frybread companies. So community decisions must include defining the types of foods that are appropriate to “preserving and celebrating culture” both in the past and currently.

Oglala Lakota communities include people who have knowledge of plants that have been used for centuries for food, ceremonial use, and medicine. These resource people are clearly an important part of the food system. While the buffalo was the most important food historically, Lakota people do have a history of large communal gardens, in addition to gathering plants. The latter was common as recently as World War II.

However, interviews and the focus groups indicated that there may now be more community interest in historical plant uses than there is community investment in learning about them and in eating them. For example, focus group participants noted that strings of timpsila were used more for decoration than for food. Another participant noted that the Lakota have lost the “traditional” ability to raise chickens, which were actually a recent European transplant. This indicates an educational opportunity that should be incorporated into efforts at increased food sovereignty.

Environmentally sustainable food production and distribution also provide challenges. Food production on the reservation, which is in a semi-arid region with strong pests and with weather extremes that make year-round agriculture impossible outside of a structure, creates an obvious need for investment in greenhouses. This has begun to some extent on the reservation, but some greenhouse projects have not been sustained. There is a similar issue with three-season gardening, which has not been very successful on a household basis. Running Strong, a reservation non-profit group, tills up over 300 gardens a year, and an estimated 15% get ongoing care. Clearly, there is a need for research into why this happens and for an organizational structure that is able to maintain gardens over time, as has happened at Thunder Valley CDC.
One obvious place to make environmental progress is in the area of local food distribution. Currently, many trucks that bring materials—including food—to the Pine Ridge Reservation turn around and leave the reservation empty. Given the distance covered, this is a huge investment in fuel for a low return. An Iowa State University report found that current food distribution systems “used four to 17 times more fuel and emitted five to 17 times more CO₂ (carbon dioxide) than the local and regional systems.” To the extent that a sustainable, internal food system is developed, there will be substantially less truck traffic. And, at the same time, there is apparently no transportation barrier to local businesses that wish to move food products off the reservation for sale. This is a positive aspect of potential economic development. A food system that was more internal to the reservation would also be much less subject to disruption if there were problems in truck transportation.

Environmental concerns also interlace with the Lakota practice of “wateca.” Historically, this involved bringing one’s own eating gear and reusable containers when food was to be offered. In modern times, community feeds and leftovers mean the use of disposable plates, cups, bowls, utensils, and containers. Given the large number of community and ceremonial feeds on the Pine Ridge reservation, this is a challenge to environmental stewardship. In recent years, however, there has been some increase in awareness of the value of this traditional practice, and there is room for continued public education.

We will now turn to some specific information from the Thunder Valley area and, in particular, a survey completed at Sharps Corner.

**Thunder Valley Food System Survey**

A survey was done of 100 people who stopped to shop at the Common Cents convenience store at Sharps Corner. The topics covered by this survey attempted to get at the specifics of the food system in the Thunder Valley area and to begin to determine whether there was an opening for the sale of healthier foods at a new grocery store or co-op in that area. The grocery store or co-op would, by definition, include a wide range of foods, not just convenience foods, and would help develop local food sources as part of the development of increased food sovereignty. The survey was supervised by Lilias Jarding, Ph.D., a social science instructor at the local tribal college.
Sharps Corner is located at the intersection of BIA Highway 27 and eastbound BIA Highway 2 in Thunder Valley on the Pine Ridge Reservation. Surveys were collected in October 2014. Each person reported information for their household.

The surveys were collected by staff of the Thunder Valley CDC. Two preliminary focus groups were held in July 2014, involving about 15 members of the community. These focus groups provided basic information on which the survey was based, particularly about the manners in which families in the area obtain food for their households. While it offered few surprises, the survey indicated the strength to which certain trends occur in the immediate area.

Individuals were approached at the Common Cents Store. The surveyor selected every fifth individual over the age of 18 and asked them if they would complete the survey. An incentive of $10 was offered for survey participation. If the fifth person declined, the next person was asked until a participant was recruited.

The surveyor then went over the directions, which stated:

“Please help Thunder Valley Community Development Corporation in its study of the food system in our area. Your answers are completely confidential. It is voluntary to fill in this survey, and you have the right to stop at any time.

“Please answer these questions for your household – everyone who lives with you as of today. If you don’t know an exact answer, just do the best you can.”

The surveyor avoided answering other questions about the survey and instructed the participant to do the best they could. Surveys were collected Monday through Friday, with 20 collected on each weekday. Surveys were collected at a variety of times on various days, beginning at 10:00 am and ending after 4:00 pm. The times that surveying started are shown in Figure One.

Due to staff restrictions, no surveys were collected on the weekends or in the evenings, which would have rounded out the information somewhat. However, the combination of different days of the week, different times of day, and selection of the fifth person as a participant were designed to randomize survey collection and provide a fuller picture of the food system in the Thunder Valley area.
The main shortcoming of this approach was that people who commuted to and from daytime jobs past the Common Cents Store were less likely to be selected. As many – if not most – of those people live outside Thunder Valley -- generally in Rapid City -- their contribution to the local food economy would be expected to be less than the contribution of full-time residents.

The first question on the survey asked “What community do you live in?” Nineteen responses were received. Different names for communities – and a few communities in the same area -- were combined, and the results are shown in Table One. Note that one response to this question was unintelligible.

TABLE ONE: COMMUNITIES REPRESENTED IN SURVEY

<table>
<thead>
<tr>
<th>Community</th>
<th>Number of Surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kyle/Medicine Root</td>
<td>28</td>
</tr>
<tr>
<td>Porcupine</td>
<td>23</td>
</tr>
<tr>
<td>Evergreen</td>
<td>12</td>
</tr>
</tbody>
</table>
The location of these communities is shown in Figure Two. The largest number of survey participants were from Evergreen and Porcupine to the south (35). The second largest number were from Kyle and the Medicine Root District, which are to the east via BIA Highway 2 (30, including Potato Creek). An additional 11 were from Manderson and Wounded Knee, farther to the south. Seven listed their community as Thunder Valley or Sharps Corner, and an additional six were from Rockyford to the north. The remainder were scattered around the reservation.

FIGURE TWO: MAP OF AREA
This pattern indicates that a lot of people stop at the Common Cents store when they are traveling through the area. These travelers may be stopping for gas, for food, or both. Those from Kyle/Medicine Root have access to a grocery store located in Kyle, and those from Pine Ridge and Oglala have access to a grocery store in Pine Ridge. So people in these groups would be less likely to shop at a full-service grocery store or co-op at Thunder Valley, unless there were incentives to do so, such as food prices or selection. Those from Evergreen, Porcupine, Thunder Valley, and Sharps Corner – representing 42% of those who stopped at the store -- would be more likely to stop at a full-service grocery store at Thunder Valley, if one was constructed.
The second question asked “How many years have you lived” in the community listed in question one. The responses to the second question ranged from someone who had just moved into the area to 76 years. Most people were long-time residents, with the average time of residence being 25 years. This indicated a stable population, but might also indicate that people are set in entrenched patterns of food acquisition. This could make it difficult to get a new operation going.

The third question offered 17 options in response to “Which of the following sources of food did the people in your household use in the past year?” The categories and the number of people responding that they did use food in that category in the past year, are shown in Table Two. There was also an “Other” category, in which one person responded that fishing provided food to their household.

TABLE TWO: SOURCES OF FOOD IN THE PAST YEAR

<table>
<thead>
<tr>
<th>Source of Food</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grocery Store On the Reservation</td>
<td>95</td>
</tr>
<tr>
<td>Convenience Store On the Reservation</td>
<td>87</td>
</tr>
<tr>
<td>Grocery Store Off the Reservation</td>
<td>81</td>
</tr>
<tr>
<td>Supplemental Nutrition Assistance Program (SNAP or Food Stamps)</td>
<td>61</td>
</tr>
<tr>
<td>Commodities</td>
<td>59</td>
</tr>
<tr>
<td>Restaurant On the Reservation</td>
<td>53</td>
</tr>
<tr>
<td>Restaurant Off the Reservation</td>
<td>52</td>
</tr>
<tr>
<td>Convenience Store Off the Reservation</td>
<td>50</td>
</tr>
<tr>
<td>Food Bank or Other Charity Program</td>
<td>49</td>
</tr>
<tr>
<td>Community Feeds (funerals, ceremonies, etc.)</td>
<td>48</td>
</tr>
<tr>
<td>School Meals</td>
<td>44</td>
</tr>
<tr>
<td>People who Sell Food from their Cars</td>
<td>43</td>
</tr>
<tr>
<td>Plant Gathering by Someone in my Household (chokecherries, timpsila, mint, etc.)</td>
<td>36</td>
</tr>
<tr>
<td>Women, Infants and Children Program (WIC)</td>
<td>30</td>
</tr>
<tr>
<td>My Household’s Garden</td>
<td>30</td>
</tr>
</tbody>
</table>
Not surprisingly, the most common source of food mentioned was a grocery store on the reservation, and the second-most-common was a convenience store on the reservation. In terms of overall health, it was troubling that convenience stores were such a common source of groceries. However, and this was significant for those concerned about keeping reservation dollars on the reservation, 81 people reported a grocery store off the reservation as a source of food. Two major sources of food assistance, the SNAP program and commodities, were listed next.

Only about a third of responses indicated the use of self-sufficient sources of food, such as plant gathering, gardening, and hunting. It is possible that the number of households that hunt is actually higher, as some of this activity is probably conducted without permits. Still, this indicates that a lot of families practice some self-reliance in food acquisition, providing a base for future development efforts.

The fourth question repeated the same list of potential sources of food, but asked participants to select “the five sources of food that provided the most food to your household in the past year.” Responses to this question varied, with a number of people answering the question incorrectly by selecting more than five items, and with some selecting fewer than five. If the participant selected significantly fewer responses for this question than for the third question, and if they selected fewer than eight responses overall, their responses to this question were used in analyzing the data.

Table Three shows the results for this question.

<table>
<thead>
<tr>
<th>Source of Food</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grocery Store On the Reservation</td>
<td>72</td>
</tr>
<tr>
<td>Convenience Store On the Reservation</td>
<td>58</td>
</tr>
<tr>
<td>Grocery Store Off the Reservation</td>
<td>54</td>
</tr>
<tr>
<td>Supplemental Nutrition Assistance Program (SNAP or Food Stamps)</td>
<td>44</td>
</tr>
</tbody>
</table>
Commodities | 43
Food Bank or Other Charity Program | 23
School Meals | 23
Restaurant On the Reservation | 22
Restaurant Off the Reservation | 15
Convenience Store Off the Reservation | 15
Community Feeds (funerals, ceremonies, etc.) | 15
Women, Infants and Children Program (WIC) | 15
Plant Gathering by Someone in my Household (chokecherries, timpsila, mint, etc.) | 11
Hunting by Someone in my Household | 9
People who Sell Food from their Cars | 8
My Household’s Garden | 8
Gifts from Someone who Doesn’t Live in my Household | 7

The top five categories were in the same order as in the previous question, with 72 people saying that grocery stores on the reservation were a major source of food, 58 picking convenience stores on the reservation, and 54 picking grocery stores off the reservation. It is important to note that this means that nearly one-third of people do not rely on reservation-based grocery stores. This suggests a market for a full-service grocery store or co-op in the area, as an alternative to convenience store food or traveling off the reservation. SNAP (food stamps) and commodities – both federal government programs – rounded out the top five. This indicates two things. First, the people who live on the Pine Ridge Reservation are heavily dependent on federal food programs. Second, SNAP dollars can be spent at a full-service grocery store – and on healthy food options -- so that those dollars could support a local effort.

The focus groups also indicated that there is a “gray market” and that people barter commodities and food stamps. This keeps SNAP payments in circulation, so they could support a new store. However, the popularity of commodities works against the success of a new store, unless education efforts could convince people to choose healthier options – and pay for them.
After commodities, there was a large drop in the number of people relying on various sources of food in the past year, with seven of the 17 sources being relied upon by in the range of 15 to 23 households. Charities and schools were more commonly used in this question than in the previous question, indicating that more people rely on these sources of food, compared to the percentage that use them at all. Restaurants – both on and off the reservation – were relied upon by fewer people. Plant gathering, hunting and gardening were among the sources of food relied upon the least, but it is important to note that about ten people noted relying on each of these sources. So they are an important source of food in the community.

The fifth question asked how much the participant’s household spent on food per month. They were asked to include cash and cash-equivalent sources, such as SNAP and WIC. They reported spending from $66 (2 people) to $2000 (12 people) per month, with a median of $500 and an average of $570 per month. The households surveyed had an average of 5.5 people per household making the average cash expenditure per person $103 per month.

This makes it quite clear why commodities, charities, senior meals, and school meals are important sources of food for the households that shop at Sharps Corner. According to the USDA Center for Nutrition Policy and Promotion, the average cost of food for an adult for October 2014 under the “Thrifty Plan” was $178 per month. For a one-year-old child, it was $94.90 per month. The “Thrifty Plan” is the least expensive of the four food plans calculated by the USDA. So, if we assume that all children’s cost per month is in the $103 range (it’s actually more for children 4 and over), then the households that shop at Common Cents need to make up about $75 per month per adult from non-cash sources, even after they have received SNAP and WIC benefits.

Households that rely on hunting, plant gathering, and gardening are making sensible choices to get healthy food at a low cost, and it’s to the benefit of the community to encourage these self-reliant food-gathering practices. For other households’ needs, various forms of free food fill much of the gap.

The sixth question asked how much of the household’s total food budget was spent on the reservation. The responses to this question ranged from zero to 100%. The average was 50%. Grocery stores off the reservation appear to be getting most of the off-reservation spending, as noted above. Using the data from the survey, for just the 211 households in Porcupine, the off-reservation spending would total $60,135 per month. This leaves a huge opening for more on-reservation grocery options, if a new
option could meet some of residents’ other needs, as discussed elsewhere. Note also that a reservation-wide survey that included both food and household goods found an even higher rate of off-reservation spending.

The seventh question refined this finding. It asked what one town the household was most likely to go to, when spending money off the reservation for food. The huge winner here was Rapid City, which is about 80 miles northwest. Sixty people said that they went to Rapid City when they shopped off the reservation, and an additional five didn’t give a town, but said “Walmart.” There are two Walmarts in Rapid City, as well as one in Chadron, NE. As only six people said they shopped in Chadron, it is likely that most of the Walmart shopping is in Rapid City. It was slightly disturbing that five people considered Walmart a “town.”

The focus on Rapid City is understandable, given the location of the intersection where the surveys were completed and the households’ home communities. People coming from the east and south would logically go from Sharps Corner to Rapid City to shop. The only options between the Common Cents at Sharps Corner and Rapid City are convenience stores at Scenic, Farmingdale, and Caputa, and none is as well stocked as the Common Cents Store. So, for people coming north or west into the Thunder Valley area, the next logical food shopping destination other than the Common Cents Store is in Rapid City.

Sixteen people said they shopped in Gordon, NE, six in Martin, and one each in Pine Ridge (which is actually on the reservation) and White Clay. Gordon is about 50 miles south, Martin is about 50 miles southeast, and Pine Ridge and White Clay are about 40 miles southwest. As noted above, six said they shopped in Chadron, NE, is about 90 miles southwest.

The dominance of off-reservation shopping is also evident in U.S. Census Bureau figures for Shannon County, which overlaps with much of the Pine Ridge Reservation. Retail sales, per capita, for the county are only 19% of the per capita sales figure for the United States. This is surely partly a result of poverty, but there is also a lack of places to shop on the reservation and a tendency for people to shop elsewhere.

So even though each of these towns except Chadron is closer than Rapid City, many people prefer to go to the larger town to shop for food, probably at least in part because there are more options. However, the unmeasured impact on people’s off-reservation food shopping preferences is the extent to which people travel to Rapid City.
City for purposes other than food shopping, such as other types of shopping, meetings, and entertainment. Fifteen households mentioned that they rely on restaurants off the reservation as a source of food, and some of these are likely to be in Rapid City.

If a grocery store or co-op was constructed at Thunder Valley, it would have to offer some of the amenities or the broader selection for which people go to Rapid City in order to be able to compete with off-reservation stores for food shopping dollars. One possibility might be a deli and small seating area, as there is no place at a Sharps Corner business to sit down and eat. Another might be a play area for children that offered unique play and educational opportunities. Community members could identify other possibilities. A significant rise in the price of gasoline might also encourage on-reservation shopping.

For the households surveyed, questions 8, 9, and 10 inquired about the number of people in the household, counting the participant. As noted above, the average was 5.5 persons per household. Each household included an average of 2.5 children under the age of 18 and .5 elder aged 60 or over. One household each included 17, 15, 13, and 12 people. Six households included only one person. This provides important information for anyone stocking a store, as children’s products, such as baby food, diapers, bottles, and children’s eating equipment, would need to be included to draw shoppers. The presence of young families would also provide important community education opportunities.

The last two questions were about food stability and food choices. Question 11 asked the participant to choose one statement that “best describes the food eaten in your household in the past 12 months.” For this question, some participants selected more than one answer. The answers were entered to reflect the worse status. So, for example, someone who selected both “sometimes not enough to eat” and “often not enough to eat” was entered as the latter. The assumption behind this data entry was that either participants checked something they found first, and then a second choice that was also accurate, or that participants were somewhat embarrassed to admit they didn’t have enough food and selected other choices as well. Table Four shows the results for this question.
TABLE FOUR: FOOD STATUS IN PAST TWELVE MONTHS

<table>
<thead>
<tr>
<th>Food Status</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enough of the kinds of food we want to eat</td>
<td>41</td>
</tr>
<tr>
<td>Enough, but not always the kinds of food we want</td>
<td>28</td>
</tr>
<tr>
<td>Sometimes not enough to eat</td>
<td>24</td>
</tr>
<tr>
<td>Often not enough to eat</td>
<td>7</td>
</tr>
</tbody>
</table>

While 41 participants said that they got enough of the foods they wanted to eat, 59 reported some form of food deficit. The majority of these reported not getting enough to eat, which was not surprising, given the data reported above on food budgets. If a grocery store or co-op was to be built at Thunder Valley, it is not clear whether those who reported having enough of the food they wanted to eat or those who weren’t getting enough to eat would be likely shoppers. Food choices would have to be competitive with the existing options, both to meet people’s wishes and to meet their budgets.

The last question shed light on ways that a new grocery shopping option might make itself competitive. It asked participants to check as many options as applied in response to the prompt “if any of the following is a reason why your household doesn’t always have enough or the kinds of food you want.” The results are shown on Table Five.

TABLE FIVE: REASONS FOR FOOD STATUS

<table>
<thead>
<tr>
<th>Reasons for Food Status</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not enough money for food</td>
<td>47</td>
</tr>
<tr>
<td>Kinds of food I want are not available</td>
<td>42</td>
</tr>
<tr>
<td>Too hard to get to the store</td>
<td>26</td>
</tr>
<tr>
<td>Not enough time for shopping or cooking</td>
<td>20</td>
</tr>
<tr>
<td>On a diet</td>
<td>6</td>
</tr>
<tr>
<td>Not able to cook or eat because of health problems</td>
<td>4</td>
</tr>
</tbody>
</table>
The highest number of participants said that they didn’t have enough money for food. Again, this is not surprising, given earlier responses. However, it creates a problem for any grocery outlet – prices must be competitive, or people will just take their food shopping dollars to Rapid City.

Education on food alternatives could be used to help dispel the widely-help belief that healthy foods are expensive. According to USDA research, when foods are measured based on average portion size – after cooking and after skin, seeds, shells, and bones have been removed – “grains, vegetables, fruit, and dairy foods are less expensive than most protein foods and foods high in saturated fat, added sugars, and/or sodium.” Getting this information to potential shoppers

The second highest number of participants said that the kinds of food they wanted were not available. A space was also provided for people to answer the question “what kinds of food are not available now that you would like to have?” Twenty people responded. Thirteen of them said they would like more or a greater variety of produce, and several added that they wanted produce at a reasonable price. One noted that they wanted organic produce. Three additional participants said that they wanted “healthy,” “organic,” or “more natural” foods. This clearly creates an opening for any new grocery outlet that could also build general food sovereignty by supporting the growing of local produce.

Two responses indicated that options must be inexpensive, and two mentioned that they preferred a big store – apparently because of the perception that a big store would have cheaper prices. This is interesting reasoning, as people must put forth the time and money to travel 160 miles to get to Rapid City and back, yet still perceive that they are saving money by shopping in a bigger store. If we estimate the cost of gasoline at 25 miles per gallon, the current cash price of gas to make the trip ($3.00/gallon) would be $19.20. If we calculate using the federal mileage rate ($.56/mile), which is intended to include vehicle purchase and upkeep, the cost of the trip would be $89.60. If this information could be adequately communicated to reservation residents, and if people did not have other reasons to go to Rapid City, the cost savings offered by a reasonably-priced grocery store with healthier options at Thunder Valley could be made attractive.
The third most common response to the question of why household members didn’t have enough of the types of food they wanted was that it was too hard to get to the store. Given the fact that this response was received outside a convenience store that offers food, it is unlikely that the distance problem among reservation communities could be resolved by another grocery outlet in the immediate area. Distance is clearly not the only factor in food shopping choices.

The remaining responses were personal choices over which a grocery outlet has little control: dieting, a shortage of time, and health problems – although, for many people, healthier food choices would also lead to improved overall health. This is certainly the case for the many people on the reservation who are diabetic.

Correlations were calculated for all responses that fit the criteria for doing that type of calculation. Most correlations were very low, indicating little relationship between, for example, years lived on the reservation and the amount of cash and cash-equivalent spent on food during a month. The exceptions were the following, which showed moderate positive correlations:

- The amount of cash and cash-equivalent spent on food in a month and the number of people in the household (.541)
- The amount of cash and cash-equivalent spent on food in a month and the number of children in the household (.549)
- The amount of cash and cash equivalent spent on food on the reservation in a month and the number of children in the household (.346)

The first two might be expected. The third item might indicate that people are less likely to travel off the reservation – most likely to Rapid City -- if they must take a number of children with them on the shopping trip. This indicates again that young parents might be a good audience for any new grocery store or co-op to market to. Given the results of the focus groups, however, nutrition education for young mothers would need to be an important part of any marketing program.

Overall, the survey presented few surprises, but it did provide a clear snapshot of the people who shop in the Thunder Valley area. There is clearly plenty of room for improvement in the diet of people in the area, as well as some demand for healthier food choices. Self-sufficient and local food production should also be encouraged, as they provide an important – although under-used – source of food, allow for culturally appropriate options, and increase community self-reliance. To the extent that cost-
effective new food shopping choices can be developed that encourage the expenditure of food dollars on the reservation, the economy of the area and environmental health can also be improved.

Recommendations

Experience has shown that just providing a grocery store in an under-served community is not enough to push people away from a convenience store-based food system. People must also be cajoled to change their food and shopping patterns and, in the case of the Thunder Valley area, to forego some of the non-food opportunities offered by Rapid City.

Changes start with public education and policy change. While Thunder Valley has been heavily and successfully involved in the former, it may need to become more involved in the latter in the move toward increased food access, food sovereignty, community health, and economic development.

When asked what policy changes would be desirable in the move toward food sovereignty, focus group participants and interviewees came up with a series of ideas that should be researched further. These included pressuring federal government food programs toward providing not only more healthy food, but more local foods. This would require a complementary development of local food sources, and there is a “chicken-and-egg” issue that would need to be resolved.

Another idea that came out of the focus groups was a tribal tax on “junk foods.” This would be difficult to sell in an area where every penny counts, but it’s worth consideration. Participants also noted the importance of water in their semi-arid area and suggested that local control of water was needed. This is an underlying issue that Thunder Valley residents should keep in mind as other solutions are sought. And a lively discussion concerned land control and land uses, including the centralized nature of land control, the ability of tribes to dictate range units, and the need to support buffalo ranchers. This set of issues is critical to local control, food sovereignty, and economic development. Thunder Valley residents should continue to both seek and support solutions.

There are also a clear set of immediate recommendations that would move food sovereignty forward in the Thunder Valley area and beyond. These are:
• Work with community partners to design and implement an education program focused on food sovereignty issues, particularly nutrition and health, culturally-appropriate foods, self-reliant food alternatives, the economics of shopping off-reservation, food and household economies, and relationships related to food and environmental health. Create and implement a hands-on program with a particular eye toward providing immediate benefits for young parents.

• Hold community meetings to identify the key amenities and services that people would desire in a new grocery store or co-op, beyond food selection and pricing.

• Research those amenities and services as part of a larger project that looks at the requirements of running a new store, such as ordering, personnel management, stocking, and marketing.

• Identify the relative benefits of a for-profit versus a co-operative store model. Include discussion of development of a farmers’ market as a preliminary step.

• Continue to develop Thunder Valley CDC’s gardening program, particularly as this is a key aspect of community health and the development of additional food-related programs. Expand to include education on food preservation, and coordinate with the overall community education program outlined above.

• Develop a Thunder Valley CDC greenhouse to start garden plants for the community and to expand the growing season, with a focus on building a greenhouse that is partly below ground (pit-style greenhouse or walipini) to shelter the operation from wind and pests and to decrease heating costs. At the same time, work with other organizations on the reservation that are building pit-style greenhouses to develop the expertise, capacity, and funding needed to sustain a three- or four-season greenhouse. This operation has the potential to serve as a basis of supplying produce for a store, if one is developed.

• Once a greenhouse program has become stable, research the possibility of adding aquaponics to the greenhouse for fish production, including moving to a hydroponics-based growing system. This would require an additional level of stability for trained staff.
• Continue to engage the tribal government and other leaders on the reservation in the discussion of food and health issues in the region and the discussion of food sovereignty, with an eye toward developing reservation-wide solutions that reach beyond Thunder Valley.

Thunder Valley CDC has a lot to offer the effort to develop food sovereignty – in all its aspects – for not only its own community, but also for the many people who already stop to shop at Sharps Corner. It is hoped that this food system assessment will provide a basis for the development of solutions that work for the people of the Pine Ridge Reservation.