



DINÉ POLICY INSTITUTE

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# DINÉ FOOD SOVEREIGNTY

A Report on the Navajo Nation Food System  
and the Case to Rebuild a Self-Sufficient Food  
System for the Diné People

This report is the product of collaboration and teamwork; it would not have been possible without the many people who made contributions to the research and development of the Diné Food Sovereignty Initiative and writing of this report. Thank you for all of your effort and dedication to help our people.

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## **About Diné Policy Institute**

In 2005, the Navajo Nation Council and the Diné College Board of Regents established Diné Policy Institute (DPI) to articulate, analyze and apply the *Diné Bi Beehaz'áannii* to issues impacting the Navajo people by educating, collaborating and serving as a resource for policy and research. *Sq'ah Naaghái Bik'eh Hózhóón* guides the research process of DPI by using Nitsáhákees, Nahatá, Iiná and Siih Hasin. DPI's applied research from Diné knowledge provides innovative solutions that address the social, economic and cultural well-being of the Navajo Nation. Diné Policy Institute is housed at the Tsaile campus of Diné College.

### **Diné Food Sovereignty Initiative**

Since 2011, Diné Policy Institute has researched the Navajo Nation Food System through primary research, meetings with Diné knowledge holders, community based data collection, and literature and historical reviews under the Diné Food Sovereignty Initiative. The purpose of this research was to better understand the systemic issues that have shaped the current Diné Food System and its negative health, community, economic, cultural, and environmental impacts, and to identify strategies and recommendations for creating positive change for the Diné people.

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*I am the grand child of White Shell Woman.  
She is my guardian.  
The Sacred One.*

*She is the mother of the universe.  
She gave us life, corn, animals, plants.  
She gave us the guiding principles to live by.  
She planted in us the seed of good health, life, and prosperity.*

*She gave us the corn, beans, squash, tobacco.  
She gave us the prayers and songs for our food.  
She molded our bodies, mind and spirit with songs.  
She brought me to life with the sacred wind and water.*

*I am the grand child of White Shell Woman.  
She is my protector.  
The Sacred One.*

*She will guide me on the path of good health.  
I will return to my field and plant the corn, beans, squash, and tobacco.  
I will nourish my body, mind, and spirit with the sacred food.  
I will serenade myself with my corn pollen.*

*I will be blessed with good body, mind, spirit.  
I will walk on the sacred pollen path.  
I will be the everlasting one.  
The sacred one.*

— “Diné Corn Song,” Orlinda Arthur-Williams.

*“The Right to Food of Indigenous Peoples is a collective right based on our special spiritual relationship with Mother Earth, our lands and territories, environment, and natural resources that provide our traditional nutrition; underscoring that the means of subsistence of Indigenous Peoples nourishes our cultures, languages, social life, worldview, and especially our relationship with Mother Earth; emphasizing that the denial of the Right to Food for Indigenous Peoples not only denies us our physical survival, but also denies us our social organization, our cultures, traditions, languages, spirituality, sovereignty, and total identity; it is a denial of our collective indigenous existence.*

*Food sovereignty is the right of peoples to define their own policies and strategies for sustainable production, distribution, and consumption of food, with respect for their own cultures and their own systems of managing natural resources and rural areas, and is considered to be a precondition for food security.”*

— Declaration of Atitlán, Guatemala, Indigenous Peoples' Consultation on the Right to Food: A Global Consultation, (2002).

*Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It puts the aspirations and needs of those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations...It ensures that the rights to use and manage lands, territories, waters, seeds, livestock and biodiversity are in the hands of those of us who produce food. Food sovereignty implies new social relations free of oppression and inequality between men and women, peoples, racial groups, social and economic classes and generations.*

— Declaration of the Forum for Food Sovereignty, Nyéléni, Mali, (2007).

# I. WHY IS FOOD IMPORTANT AND WHY SHOULD THE NAVAJO NATION CRITICALLY EXAMINE ITS FOOD SYSTEM?

In the most basic analysis, food is an essential component of human life. Food nourishes and sustains us; without adequate access to food, human beings cannot survive. As a basic necessity for life, food is interconnected with every sector of life and wellbeing including health (physical, mental, spiritual), economy, family and community, and the environment. For these reasons, the right to food is a fundamental human right, and is recognized by the United Nations in the Universal Declaration of Human Rights of 1948 and the International Covenant on Economic, Social and Cultural Rights of 1966.

Many of the issues faced today on the Navajo Nation can be directly tied to the food system. Therefore, understanding Navajo Nation food system is crucial to improving the wellbeing of the Navajo Nation. An examination of the Navajo Nation food system reveals that our current food system not only does not serve the needs of the Navajo Nation, but also negatively impacts the wellbeing of the Diné people.

These issues include epidemic levels of nutritionally-related illness including diabetes and obesity, food insufficiency (high rates of hunger), significant leakage of Navajo dollars to border towns, disintegration of Diné lifeways and *K'é* (the ancient system of kinship observed between Diné people and all living things in existence), among other issues; all while the Navajo Nation grapples with extremely high rates of unemployment, dependence on Natural Resource extraction revenue and unstable federal funding.

By reconnecting with traditional foods and revitalizing knowledge and practices around those foods the Navajo Nation can begin to proactively address these issues in ways that restore *Hózhó* (holistic well-being). Restoring *Hózhó* will have positive impacts on the health of the people, relationships of the people as well as our interconnectedness with the land, while also leading to greater self-sufficiency for the Diné people and the Navajo Nation..

The ultimate aim of this project is to contribute knowledge and pathways that will foster greater self-sufficiency, health, and sustainability for Diné people. This report presents the findings of the Diné Food Sovereignty Initiative and recommendations to move forward with the revitalization of indigenous foods and the rebuilding of a self-sufficient food system for the Diné people.

## II. DINÉ POLICY INSTITUTE FOOD SOVEREIGNTY INITIATIVE PRIMARY RESEARCH ACTIVITIES: COMMUNITY FOOD ASSESSMENT

As part of its Diné Food Sovereignty Initiative (hereafter ‘the Initiative), Diné Policy Institute (DPI) conducted extensive qualitative and quantitative data collection to understand the realities of the current Navajo Nation food system, the impacts and effectiveness of current federal, state and Navajo Nation food programs and policies, and to empower the Diné people by including their perspectives and recommendations in the decision-making process in the form of a Community Food Assessment.

### Study Area

While the research and findings created by the Initiative are aimed at addressing food systems and food sovereignty issues for the Navajo Nation as a whole, DPI focused on five chapters surrounding Diné College as the project area for data collection: Tsaile/Wheatfields, Chinle, Many Farms, Round Rock and Lukachukai. These five chapters were selected to be a demonstration region for a Community Food Assessment due to their proximity to Diné College, making the research activities feasible and allowed DPI to contribute to the communities where the majority of Diné College students and staff reside. The Diné Food Sovereignty Initiative could be administered in any region of the Navajo Nation.

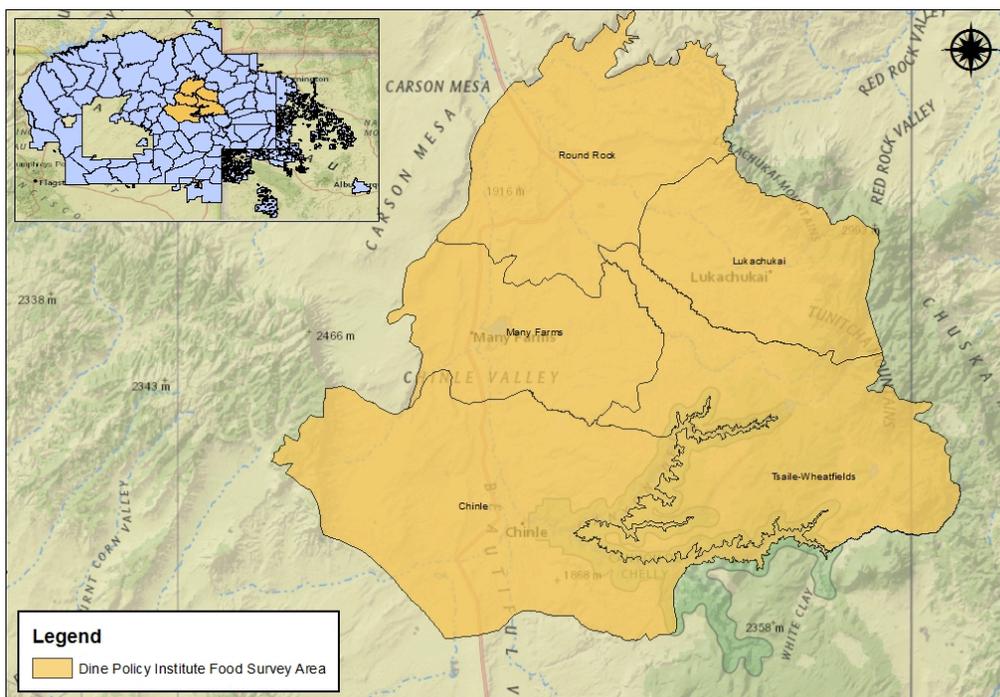


Figure 2.1: Diné Policy Institute Community Food Assessment Project Area – Data Source: 2010 Census, ESRI Tigerline. Author: Mariah Tso.

## Community-Based Participatory Research

In designing the research for the Diné Food Sovereignty Initiative, a strong focus was placed on gathering community and local/regional input and perceptions using Community Based Participatory Research (CBPR) methods. Within food system research, researchers utilize CBPR to identify the most pressing issues in a community and to identify long-term, sustainable solutions for those issues, as the most meaningful, effective and appropriate solutions will come from the direct involvement of the community.<sup>1</sup> Particularly for marginalized peoples and communities, this method of research allows for their experiences and recommendations to be included where former formal scientific and historical studies have excluded them from the official record and issue analysis. In regards to food system research, CBPR helps to identify larger systemic and social factors behind a food system through this inclusion and validation of marginalized voices.<sup>2</sup>

Research that is intended to benefit the Diné people by informing the development of policy and programming on the Navajo Nation should include Community Based Participatory Research. Specifically, much of the existing academic literature on Diné people excludes their perspectives and ideas, while at the same time, the majority of Diné people have been largely isolated from the decision-making processes that produce major policies and programs, which profoundly impact their lives. This has happened at the federal, state, and Navajo Nation levels and continues today, resulting in policies and programs whose effectiveness and appropriateness are limited, and ultimately do little to address the issues they aim to resolve. At times, these ill-informed policies and programs may even further exacerbate issues.

CBPR provides a way for the voices of Diné people to be included in the decision-making process and the development of policies and programs with effective and appropriate solutions to issues facing Diné communities today. DPI's Community Food Assessment comprised of Consumer Surveys and Interviews, Community Grower Focus Groups, as well as Regional Food Policy meetings with chapter officials, Farm Boards / Committees and Community Land Use Planning Committees. Using the CBPR framework, the findings from DPI's Community Food Assessment help to illustrate a picture of the on-the-ground realities related to food for communities and individuals on the Navajo reservation from a number of perspectives including: consumers, producers and governmental officials. The data from the Consumer Survey and Interviews and Grower Focus Groups are discussed in the following section.

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<sup>1</sup> Daniel Stokols, "Translating Social Ecological Theory Into Guidelines for Community Health Promotion." *American Journal of Community Health Promotion* 10, no. 4 (1996): 282-298.

<sup>2</sup> Meredith Minkler, et al., "Community-Based Participatory Research: A Strategy for Building Healthy Communities and Promoting Health Through Policy Change." Report to the California Endowment (2012). <http://communityresearchcanada.ca/resources>

## CONSUMER SURVEYS AND INTERVIEWS

### Methodology for Data Collection

To generate baseline data on regional food systems and food insecurity for the communities of Tsaille/Wheatfields, Lukachukai, Round Rock, Many Farms, and Chinle, DPI developed a thirty-six question survey, based off of the First Nations Development Institute's Native Agriculture and Food Systems Initiative Food Sovereignty Assessment Tool.<sup>3</sup> The survey included questions relating to income, budget spent on food, food assistance programs, where food is purchased, general food access, food system awareness and interest in traditional and local foods, among other topics. Additionally, longer in-depth interviews were conducted following a number of surveys to illicit elaboration on response that provided ideas and recommendations from participants.

Data collection activities were approved through Chapter Resolutions in each of the five chapters in the project area. The survey and interviews were administered by DPI research team and interns over a series of field data collection sessions in Summer 2012. Given the widespread, rural nature of communities in the project area, surveys were collected in public venues, such as flea markets, parking lots, and chapter houses, as these gathering places tended to yield a significant number of participants in a relatively short period of time. Survey and interview participants were selected at random, but all were eighteen years of age or older. While a number of participants were bilingual, the survey does not include any monolingual Navajo language speakers. Survey respondents were given the option of participating in in-depths interviews, once their surveys were complete. A five-dollar gift card was offered to interviewees as incentive for participation. Once data was collected for each community, DPI worked with student interns to compile data for each community, as well as for the project aggregate. To provide analysis, DPI researchers and interns then reviewed the aggregate and individual community data and collaboratively identified significant response patterns, from which findings, discussion, and recommendations could be drawn. The findings sections below represent findings from the overall project area. Interview data is interwoven throughout the findings and discussion sections to articulate significant themes identified through the research.

### Findings and Discussion

Review of the data from the consumer surveys conducted in the five communities led the research team to identify a number of key findings related to food systems and food sovereignty, including significant patterns surrounding food assistance, access, diet and traditional foods, food system awareness and programming effectiveness and strategies for addressing food issues. The data is discussed below in a format that presents both statistical information from participant responses, as well as basic analysis and discussion of the significance of major findings after each subsection. Further discussion, particularly related to broader implications and recommendations, appears in subsequent chapters of this report.

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<sup>3</sup> Alicia Bell-Sheetter, *Food Sovereignty Assessment Tool*, (Fredericksburg, VA: First Nations Development Institute, 2004).

## Demographic Data

A total of two hundred and thirty (230) surveys were collected: eighty-five (85) from Chinle, fifty-one (51) from Tsaile, forty-two (42) from Many Farms, thirty-six (36) from Lukachukai and sixteen (16) from Round Rock. Ninety-three (93) participants were male and one hundred thirty-seven (137) were female. The age and gender breakdown of respondents is depicted in the graphs below. Participation in the study was fairly well spread between the six age group choices given, the sixty and older population was the least represented groups. These results, can be seen as representing a broad range of ages within the project area. It is important to note, that the survey did not capture the important voice of youth younger than eighteen years of age and further study of this key segment of the population would prove very useful in further research. The majority of participants were female, however for the purpose of this study, the breakdown of responses has not been separated by gender.

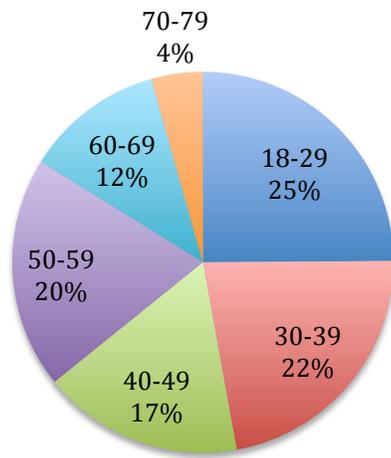


Figure 2.2 Participant Ages – Consumer Survey, Community Food Assessment

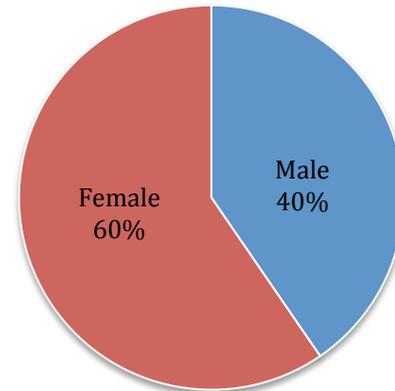


Figure 2.3 Participant Gender - Consumer Survey, Community Food Assessment

## Income, Employment and Poverty Line

Among those surveyed, approximately seventy-three percent (73%) of participants made \$29,999 or less in annual income. More than half of the total respondents made \$19,999 or less per year and close to one third made less than \$4,999 per year. Less than a third of respondents made \$30,000 per year or more. Related to employment, approximately one quarter of survey participants were unemployed at the time of survey, while forty-two percent (42%) indicated that they were employed.

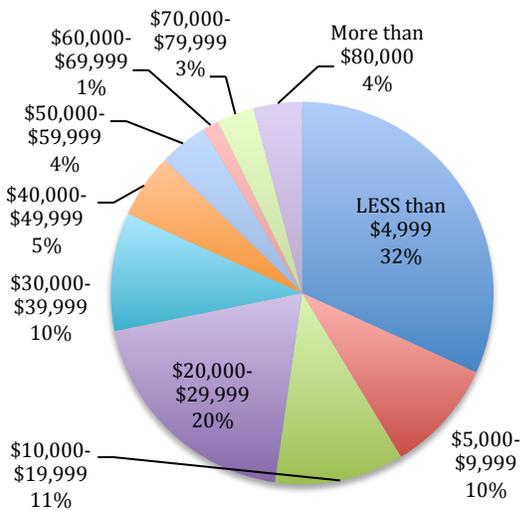


Figure 2.4 Income Level of Participants - Consumer Survey, Community Food Assessment

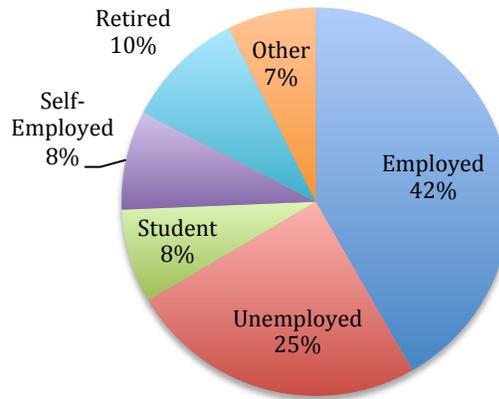


Figure 2.5 Employment Status of Participants - Consumer Survey, Community Food Assessment

While income levels of participants were also fairly spread out between the ten choices offered, the largest single group was made up of people who earned \$4,999 per year or less. This is significant when taken into consideration with employment status of the participants, as well as the overall potential budgets spent by participants to access food. Across all participants, the average annual income level was approximately \$18,196 – \$25,390.

It is also significant to note that, based on U.S. Census calculation for poverty, the majority of households within the Navajo Nation are below the national poverty line, while approximately eleven percent (11%) are at risk of falling below the poverty line.

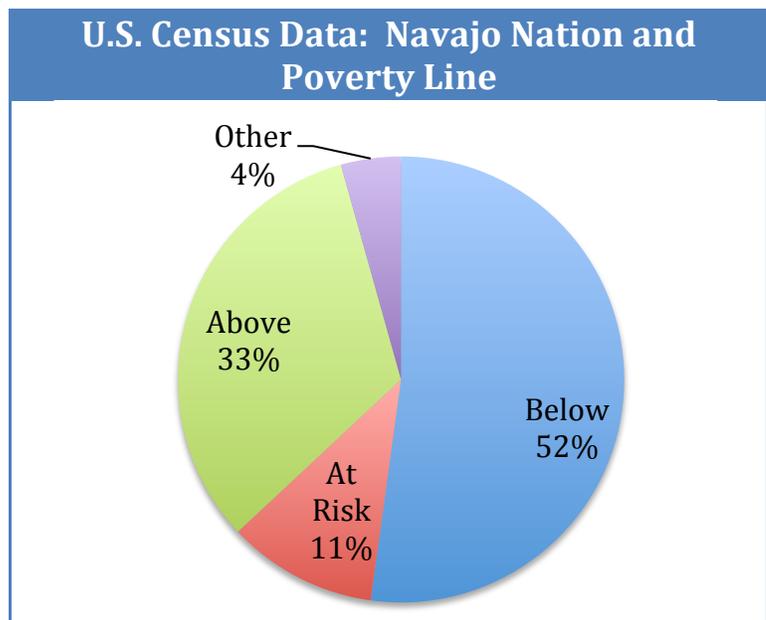


Figure 2.6 U.S. Census Data: Navajo Nation and Poverty Line

## FOOD ASSISTANCE PROGRAMMING

In order to understand the level of participation in prevalent food assistance programs survey participants were asked to indicate which programs they receive assistance from. Sixty-three percent (63%) of respondents indicated that they receive aid from *at least* one form of food assistance programming, while many indicated that they participate in two, or multiple programs. The most prevalent food assistance program indicated in the data is the Electronic Benefits Transfer (EBT)/ Supplemental Nutrition Assistance Program (SNAP), formally known as Food Stamps. More than one hundred survey participants said that they receive assistance from this program. Close to sixty participants said that they receive food assistance from Women, Infants and Children (WIC), making this program the second most common response. These figures are depicted in figure 2.7. Additionally, when asked, “*Do people in your community get enough food on a daily basis?*,” thirty-nine percent (39%) of survey respondents said, “No,” despite the current food assistance programs offerings.

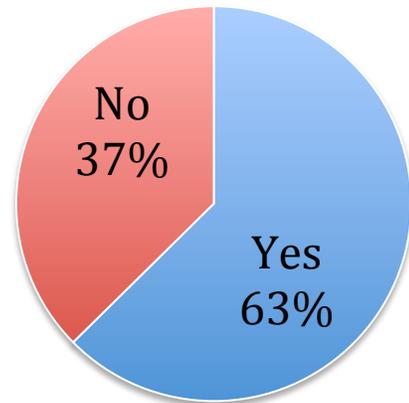


Figure 2.7 Percentage of Respondents who participate in at least one nutrition assistance program (Women Infant Children (WIC), Food Stamps (EBT), Food Distribution Program, Free Lunch Program)

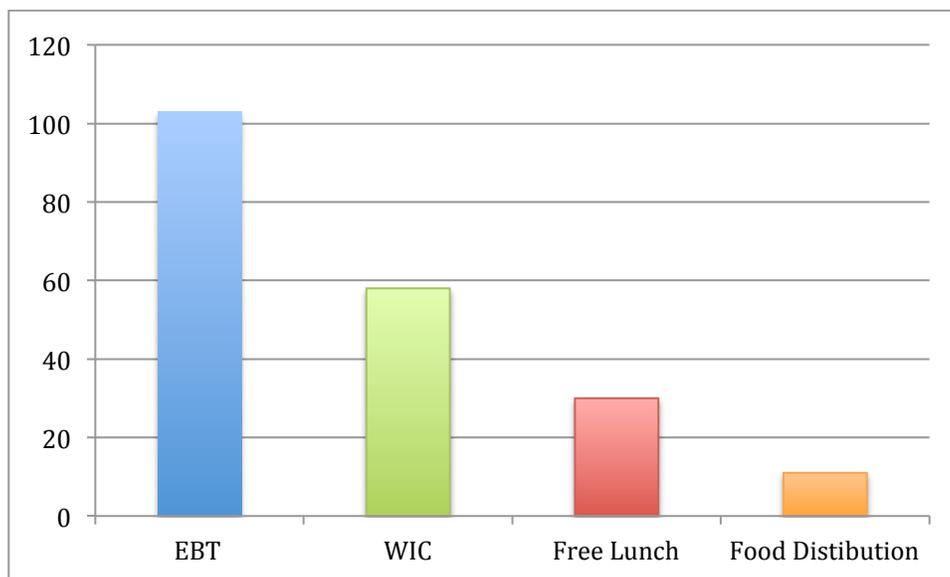


Figure 2.8 Participation in Nutrition Assistance Programs (Women Infant Children (WIC), Food Stamps (EBT), Food Distribution Program, Free Lunch Program)

Reviewing the data for income and employment in conjunction with data on poverty line for the Navajo Nation (see Figure 2.6) a picture of vulnerability to food insecurity and food insufficiency emerges for the Navajo Nation (and project area) populations. That is to say, nutritional deficiencies in relation with chronic hunger and risk of starvation often correlate to low income, high unemployment and high rates of poverty. Definitions and further discussion of the implications of Food Insecurity and Food Insufficiency for the Navajo Nation appear in other parts of this report.

As participation of populations in food assistance programming can be seen as another indicator of food insecurity, the fact that close to two thirds (2/3) of survey respondents indicated receiving assistance of this kind illustrates a scenario in which many individuals in the survey area are challenged to meet their basic needs for feeding themselves. This means that in order to meet their basic food needs, the surveyed communities are dependent on food assistance programs. In comparing the mutually exclusive programs of EBT/ SNAP and Food Distribution, close to ten times as many people received EBT/SNAP than those who received Food Distribution (see Figure 2.8). This illustrates the decline of the Food Distribution program, which is utilized by primarily the elderly population today on the Navajo Nation. Navajo Nation administers the food distribution program, whereas the EBT/SNAP benefits are administered by states. The data illustrates a significant trend away from people receiving food assistance from Navajo Nation and toward receiving assistance from states.

Also related to food security, the fact that thirty-nine percent (39%) of survey respondents reported that their communities are food insufficient, despite the fact that food assistance programs exist, is telling. With the high risk of food insecurity demonstrated by the demographic data, the current community food insufficiency reported by the survey participants, and the level of food assistance dependence, the future of food assistance programs is an extremely important consideration. As of November 1, 2013 EBT/SNAP program underwent significant cuts, with the expiration of the 2009 Recovery Act. Current Congressional debates on the Farm Bill will likely result in even more substantial cuts to the EBT/SNAP and WIC programs in the near future. In anticipation of such cuts, the Navajo Nation should work to offer alternatives, so that such cuts do not devastate already food insecure/insufficient Navajo populations.

## ACCESS

The consumer food assessment survey asked a number of questions to help measure the access participants have to food. These questions addressed issues from identification of types of food not available in the project area to distances traveled and number of trips to access foods, to budgets spent on foods.

### Foods Unavailable in Home Community

When asked the question, “*Are there certain foods that you need or would like to eat that are difficult to get, or not available in your community?*” approximately sixty percent (60%) of people surveyed indicated that there are foods that they would like, but do not have access to (see Figure 2.9). In addition participants were also given the chance to indicate the types of foods to which they would like to have access. While a diverse variety of foods were indicated among responses, a prevalent number of participants described the desire for access to fresh produce (vegetables and fruits), as well as access to natural and organic foods.

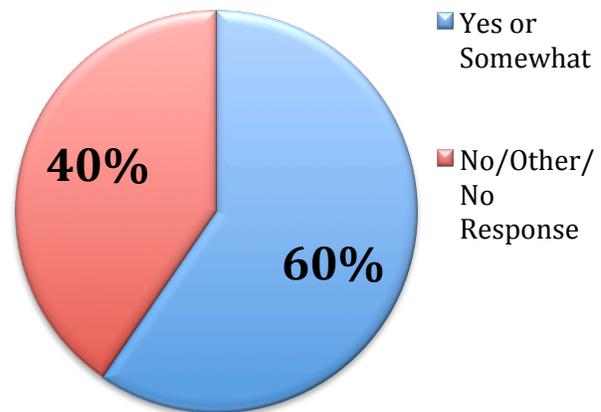


Figure 2.9 Question: *Are there certain foods that you need or would like to eat that are difficult to get, or not available in your community?*

In the in-depth interviews participants also commented on the lack of quality foods available on the Navajo Nation. One participant spoke about the quality of foods offered at a reservation grocery store,

“I think it’s expensive and a lot of times when I shop at groceries for beef and for meat, it’s not the best and highest quality....I know what kind of meat they get in the city and then what kind of meat we get on the reservation. What we get is not very good quality.”

Another participant noted,

“I look at the products and the meat, which is lean meat, and I also have to look at the fruits to make sure they are not spoiled or ready to spoil and if you go to Bashas’ and look at their meat, for example, if you’re buying steak and it’s only a two-pack and the one on top has a hole in it and its brown on top...that’s why I don’t do my shopping at Bashas’.”

### Distance to Access Food

When asked the question, “Where do you do your grocery shopping?,” more than half of survey participants, indicated that they travel to off-

**51%**

*of respondents indicated that they travel to Off-Nation stores to purchase groceries*

nation stores in border towns like Gallup, NM and Farmington, NM to purchase groceries. Sixty-five percent

(65%) of participants noted that they traveled to off-nation towns to purchase groceries from the stores that they visit *second* most often. Figure 2.10 depicts the percentage of participants who travel off-nation to shop at their first choice of grocery stores. Table 2.1 and Figures 2.11 and 2.12 illustrate the distances those individuals drive to do their grocery shopping.

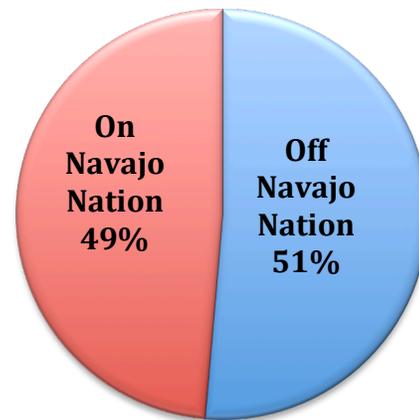


Figure 2.10 Question: “Where do you do your grocery shopping?”

Table 2.1 Round Trip Distance to Off-Nation Food Stores From Project Area Communities		
	To Gallup, NM	To Farmington, NM
<b>Tsaile, AZ</b>	155 mi	174 mi
<b>Round Rock, AZ</b>	240 mi	236 mi
<b>Lukachukai, AZ</b>	173 mi	155 mi
<b>Chinle, AZ</b>	183 mi	225 mi
<b>Many Farms, AZ</b>	210 mi	218 mi

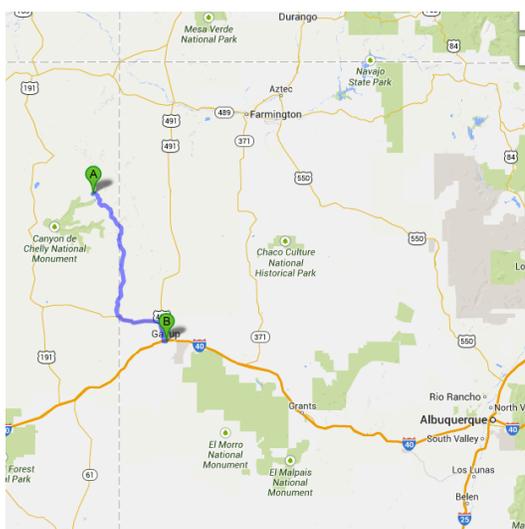


Figure 2.11 Map of Tsaile, AZ to Gallup, NM 155 miles Round Trip

The *shortest* distance traveled by participants who shop off-reservation for food is 155 miles round-trip. This is the distance from Tsaile, AZ to Gallup, NM, as well as the distance from Lukachukai, AZ to Farmington, NM. The *furthest* distance traveled by participants in the project area for purchasing groceries from border town stores is 240 miles round-trip by individuals traveling from Round Rock, AZ to Gallup, NM. This equates to an average round trip of approximately four hours if traveling at an average of

60 miles per hour. As a side note, some individuals in the project area even indicated traveling as far as Albuquerque, NM or Flagstaff, AZ, at distances of more than 400 miles round trip to shop for groceries.

When asked why he travelled to Gallup, NM to buy groceries one interview participant stated, “Because it has all the resources that I think we need that Round Rock, Lukachukai, and Tsaile don’t have and its cheaper. They have varieties of vegetables...types of meat that’s cleaner... basically the amount of food products I get and the prices are better.”

Two other important access related factors were addressed in questions on how often people shop and how much money they typically spend, per month, on food. When asked, “*How often do you shop for groceries each month?*,” fifty-eight percent (58%) of respondents said that they make at least three (3) grocery trips per month or more (see Figure 2.13). When asked how much they spend on groceries each month, the majority of survey respondents (107) indicated that they spend “More than \$300,” per month (see Figure 2.14). While the numbers of individuals who spend over three-hundred dollars (\$300) per month on groceries were the largest group surveyed, further research would help to delineate additional levels of spending beyond \$300 per month.

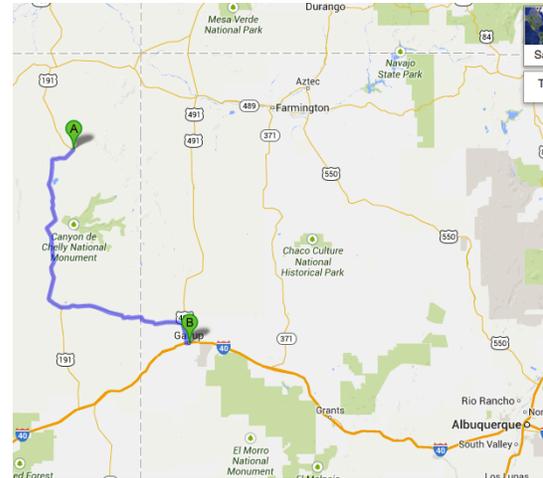


Figure 2.12 Map of Round Rock, AZ to Gallup, NM

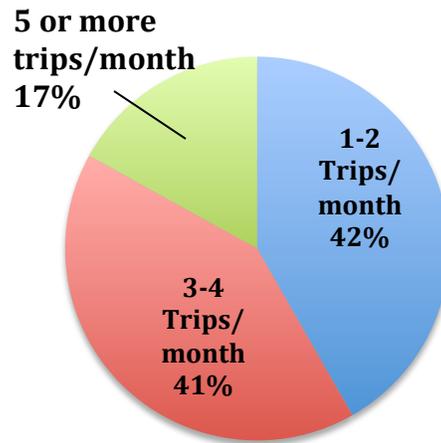


Figure 2.13 Number of trips to shop for groceries each month

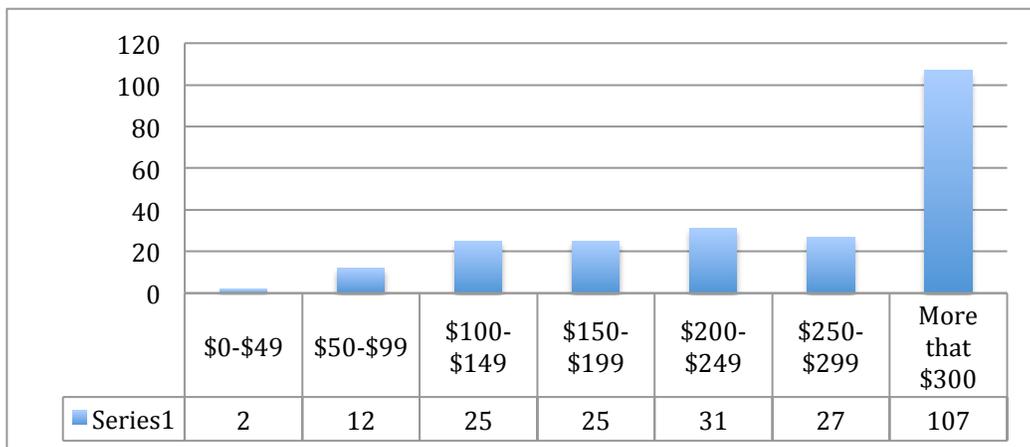


Figure 2.14 Amount Spent by Survey Participants on Groceries Each Month

## Discussion:

The lack of availability of foods felt by many participants is undoubtedly tied to the great distances that many people in the project area travel to obtain groceries. Whereas within many off-Navajo Nation communities consumers are typically able to choose from multiple grocery stores within short distances, a majority of participants from the communities represented in this study travel at least 155 miles round trip, while others regularly drive up to 240 miles to access foods. Based on the survey findings, a majority of people within the project area are compelled to shop in off-nation border towns for groceries. Drawing from interview responses, people choose to go off-nation to shop due to lower prices, higher quality food and greater options in border town grocery stores. Based on this research, it is likely that if more food options, particularly fresh produce and natural/organic foods, were available on the Navajo Nation, within Diné communities, people would not have to travel such long distances to border towns to access these foods.

In considering food access, not only proximity to grocery stores and other access points, but also the cost of trips taken to access food must be considered. Given that a majority of survey participants indicated shopping at border town stores for groceries, and that the closest border town stores to the study area are at least one hundred and fifty-five 155 miles away, round trip, it is clear that many participants in the area must incur high cost to access food during the month. The cost of gasoline, alone, for families taking three or more trips to buy groceries per month (as fifty-eight percent [58%] of participants indicated they do), must amount to significant cost, not to mention the time involved with such trips. When this is taken into consideration with income data gathered from this survey, in which more than half of respondents earn less than \$20,000 per year, it is easy to see that cost of transportation to access foods at great distances can also be a factor in food insecurity experienced in the project area. Based on the findings related to availability of foods, where people purchase foods, and how often they shop for food, the majority of people within the five-chapter area expend a great deal of resources, both monetarily and in terms of time, and travel long distances to reach availability of the foods that they seek.

This is not only significant to individual families in terms of access to foods and cost associated with accessing foods, but it is also an issue of economic loss for the Navajo Nation. If a majority of people in the project area are traveling to off-nation border towns to purchase groceries, and a

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*If a majority of people in the project area are traveling to off-nation border towns to purchase groceries, and a majority of people are making three or more such trips to purchase groceries, it is possible that thousands of dollars per year per family could potentially be lost for the Navajo Nation.*

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majority of people are making three or more such trips to purchase groceries, it is possible that thousands of dollars per year per family could potentially be lost for the Navajo Nation. Multiplying this by the number of people in the project area could potentially mean losses in the hundreds of thousands of dollars, or more. For the Navajo Nation, as a whole, this can equate to millions of dollars lost to border towns.

The question of access to food is a key factor in food sovereignty, and while some grocery stores and other food access sites exist on the Navajo Nation, the fact that a majority of survey participants indicated traveling off of the Navajo Nation to do grocery shopping paints a picture of dependence on the outside world to

meet the food needs of Diné communities. To address the lack of access to healthy foods on the Navajo Nation, solutions that refocus efforts on local food production and access will not only increase access to healthy foods for local Diné communities, but also help keep economic resources on the Navajo Nation, and provide for development of a more self-sufficient Navajo Food Economy.

## **DIET AND TRADITIONAL FOODS**

Another important set of questions covered in the Consumer Survey dealt with the ideas of diet and “traditional foods.” Survey participants had the opportunity to identify what “traditional” meant to them in one question, while in another questions they were asked to identify usage of certain indigenous foods.

With respect to diet, when asked, “*Do you think health problems in your community are caused by a lack of healthy and nutritious food?*,” seventy-four percent (74%) of respondents answered, “yes,” (see Figure 2.15). One in-depth interviewee commented,

“I think Native Americans were pretty much healthy back in the days, they didn’t have like what, two or three people that were diabetic, maybe in the sixties or forties, fifties and they were pretty healthy cause they had a distance to walk. They didn’t have vehicles... everything was physical for them back then. So when they walk, you know, they stay healthy. They carry water, they stay healthy. They chop woods, they stay healthy. But after the western societies started bringing over all these...what do you call it? Bad, bad, bad, bad food products, it just got a hold of us cause it’s something we never had before.”

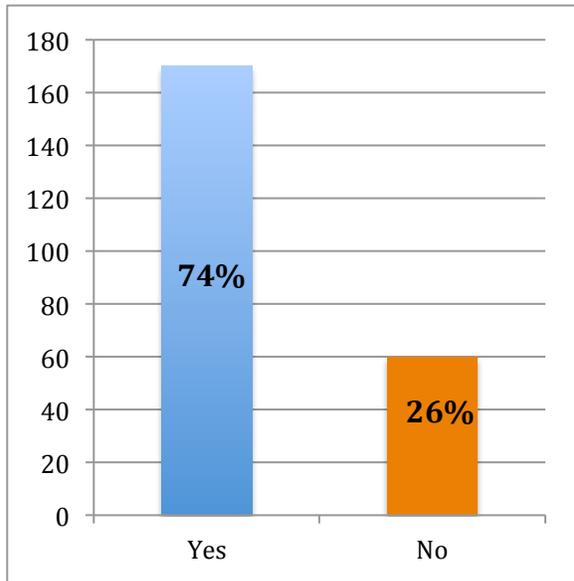


Figure 2.15 Question: *Do you think health problems in your community are caused by a lack of healthy and nutritious food*

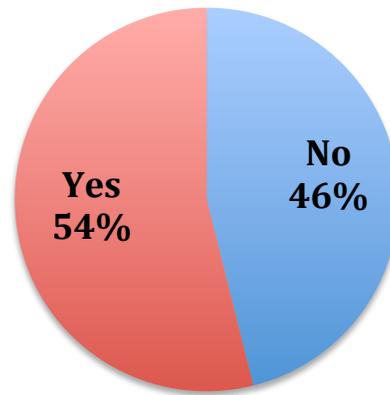


Figure 2.16 *Is information about traditional foods available in your community?*

On the subject of access to “traditional foods,” survey participants were asked, “*Is information about traditional foods available in your community?*” Forty-six percent (46%) of participants indicated that this information is *not* available in their communities. However, eighty-two percent (82%) of respondents indicated that a majority of community members in their communities are, indeed, interested in gaining this type of knowledge (see Fig 2.18). Even more significant, when responding to the question, “*Would you be interested in information about traditional foods if it were available?*,” ninety percent (90%) of those individuals who participated indicated, “yes” or “somewhat.”

**90%**

*of respondents indicated that they would be interested in information about traditional foods if available.*

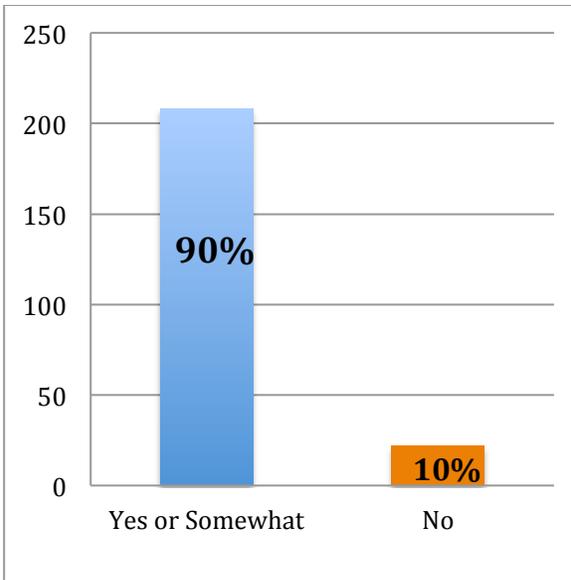


Figure 2.17 Question: *Would you be interested in information about traditional foods if it were available?*

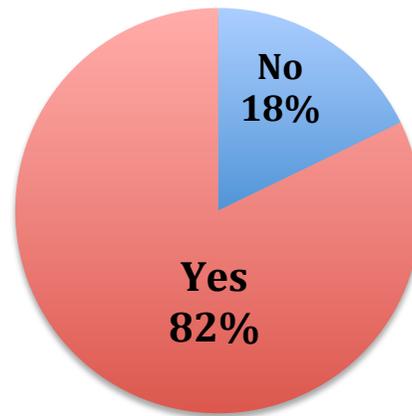


Figure 2.18 Question: *Are there people in your community interested in revitalizing traditional food and agricultural practices?*

When asked the question, “*Do you know what Traditional Navajo agriculture and food traditions are still practiced in your community?*,” sixty-five percent (65%) of participants indicated “yes.” Additionally, when asked, “*How familiar are you with traditional foods?*,” forty-eight percent (48%) of individuals indicated that they were “very familiar.”

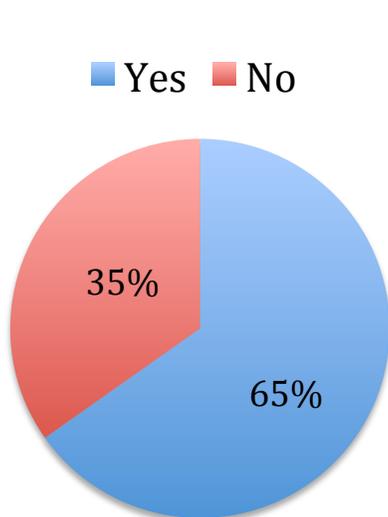


Figure 2.19 Question: *Do you know what traditional Navajo agriculture and food traditions are still practiced in your community?*

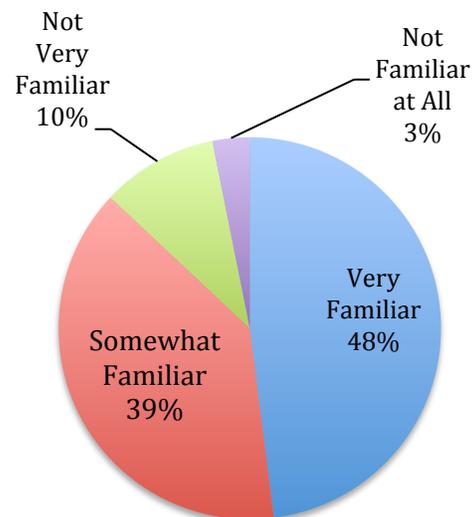


Figure 2.10 Question: *How familiar are you with traditional foods?*

## Discussion:

With respect to diet, it is significant that a majority of people from the project area (74% of respondents) identified that the modern Navajo Diet has a negative impact on our health, owing to a lack of access to healthy/nutritious foods. However, our research demonstrates that although they feel that lack of access exists, there is an overwhelming interest among individuals (90% of respondents) in learning about traditional foods, while there is also a very strong sense that the community, overall, is interested in revitalizing traditional agriculture and foods, as 82% of respondents indicated such. While this shows a strong interest by Diné people in information on,

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*The survey data paints a picture in which Diné people in communities clearly know that the foods they are accessing are not good for them, and that returning to traditional food practices is a pathway toward healthier lifestyles.*

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and revitalization of, traditional foods, close to half of survey respondents (46%) said that they lack access to information and education on traditional foods, even though a majority of respondents indicated that they are aware of traditional agricultural and food practices still practiced in their communities. The survey data paints a picture in which Diné people in communities clearly know that the foods they are accessing are not good for them, and that returning to traditional food practices is a pathway toward healthier lifestyles. As such, the findings also illustrate the need for creation of

opportunities that would provide exposure to, and education on, traditional foods. According to survey participants, traditional knowledge still exists within communities, but ensuring for the transmission of that knowledge can make the difference in addressing health issues faced by Diné communities today. Finding ways to create educational and social connections to link the knowledge holders of traditional food practices with those who are interested in learning will help to ensure that this knowledge sharing takes place.

## FOOD SYSTEM AWARENESS AND PROGRAMMING

Another set of questions within the Consumer Survey focused on participants' awareness and perceptions of food systems and existing or potential programs to address the issues associated with Navajo Nation food systems. Survey participants were asked to respond to the question, "Do you know where your community's food supply comes from?" Of the 230 respondents, 140 (61%) indicated that they did *not* know where their food comes from. Those responding, "yes," that they did know where their food supply comes from, were asked to provide comments. Some examples of comments offered by respondents appear below:

*"I know not from here"*

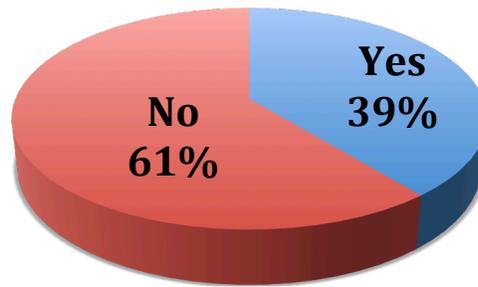
*"A warehouse east side of U.S."*

*"Big Ag – corporations, food with labels from Brazil & other countries"*

*"Grocery store"*

*"Albuquerque, Off-reservation, company, corporations, stores"*

*"From big companies far away."*



**140 No**  
**90 Yes**

Figure 2.11 Question: *Do you know where your community's food supply comes from?*

The Consumer Survey also asked questions about resources and programs that address food related challenges in Diné communities. One significant indicator is illustrated in participant responses to the question, *“Is information on diet and nutrition available in your community?”* To this question, sixty-five percent (65%) of individuals indicated “Yes.” Participants were also given the option to identify who provides this type of information in their communities. Among programs identified by participants, Indian Health Service (IHS) was the most predominant response, while Special Diabetes Program, Women, Infants and Children and Community Health Representatives were also prevalent responses.

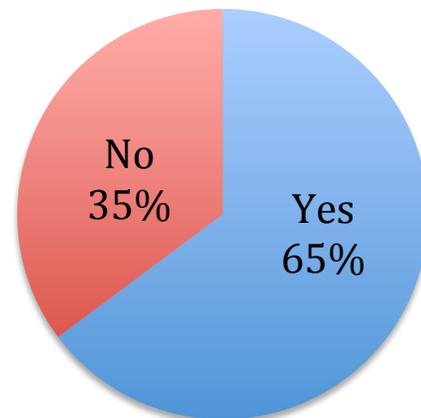


Figure 2.22 Question: *Is information on diet and nutrition available in your community?*

To help understand consumer perceptions of who is already addressing food issues, participants were asked the question, “*Who is **currently** working to solve food problems in your community?*” The responses to this question are provided graphically in Figure 2.23. Again, Indian Health Service and Navajo Nation Special Diabetes programs top the list of responses in terms of frequency, while the Women, Infants and Children program was also indicated prevalently. Tribal Government and Food Distribution programs followed WIC and interestingly, Community Members were indicated in the sixth most identified slot.

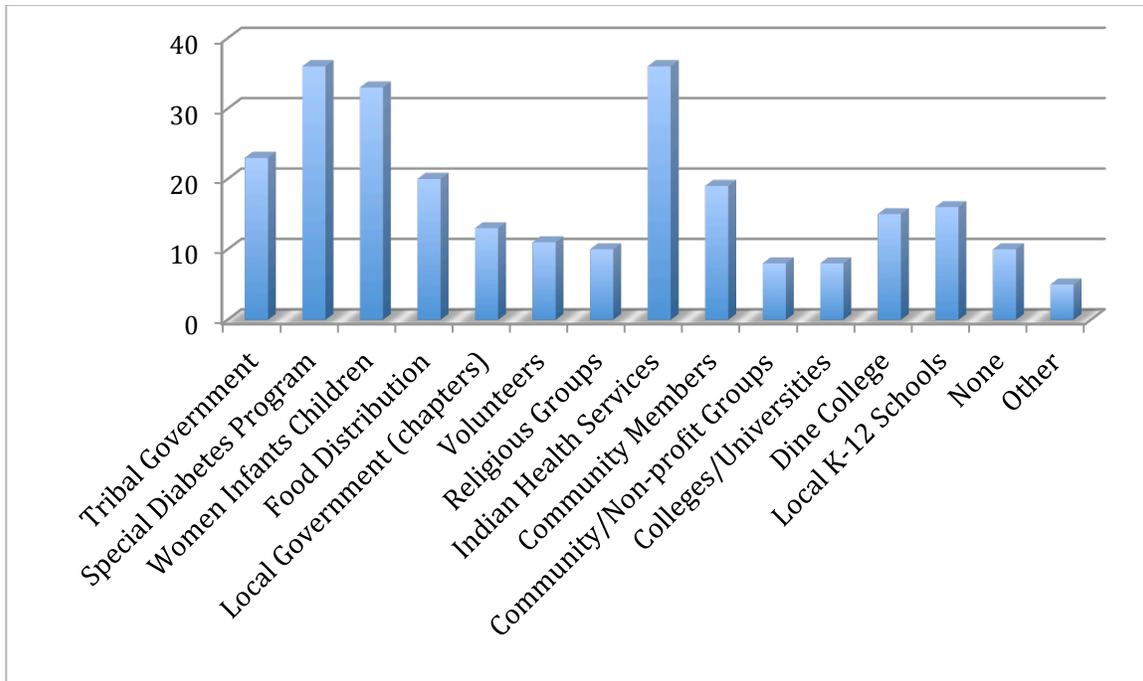


Figure 2.23 Question: *Who is **currently** working to solve food problems in your community?*

Participants were also asked, “*Who **should be** responsible in solving food problems in your community?*” Responses to this question can be found in Figure 2.24. In this graph, it is clear that Community Members were indicated most frequently as those who *should* be responsible for addressing food problems, followed by the Tribal Government. These two responses are followed by Local Government as the third most prevalent response.

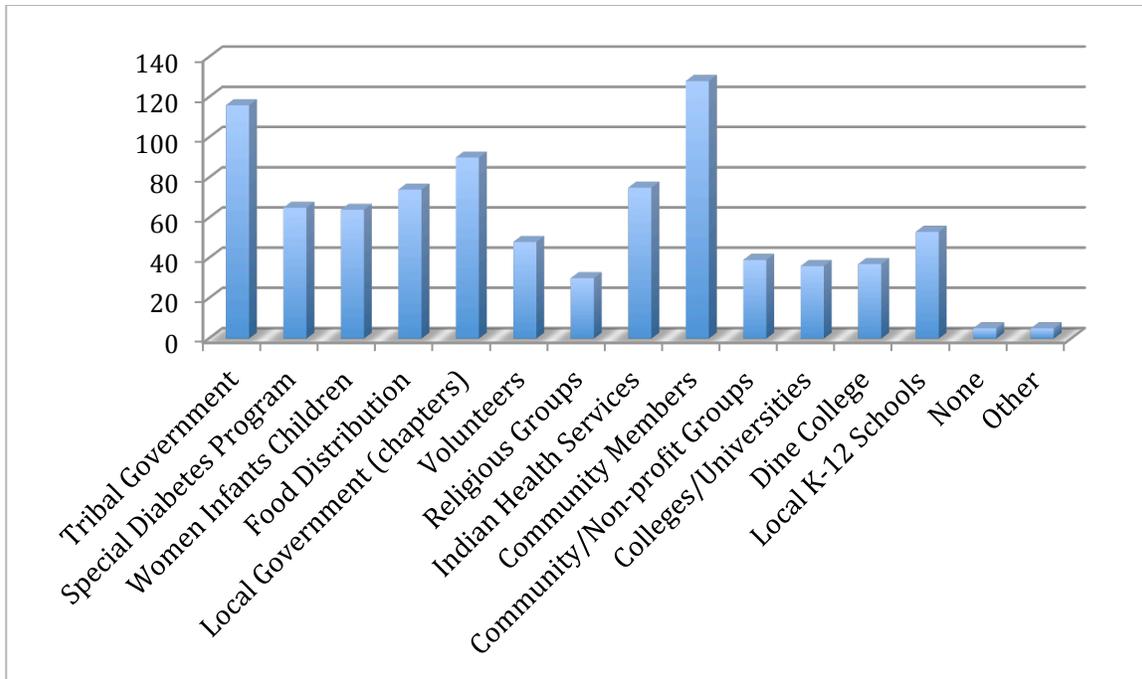


Figure 2.24 Question: *Who **should be** responsible in solving food problems in your community?*

### Discussion:

Whereas in generations past Diné people knew exactly where the food they consumed came from, as a result of growing and raising their own food sources, today the majority of people do not. This is indicative of the larger mainstream American society's separation from food systems, the knowledge of those systems, and how people are related to their food. Close to one fourth of survey respondents indicated that they knew where their food comes from. However, when asked to identify exactly where their food comes from many respondents answered that their food comes from stores, programs, or places of unknown origin, none of which identifying where food is actually produced. Further research could illustrate a more in-depth picture of communities' perceptions of where their food comes from and how it is produced.

Also, the findings related to programming are significant for a number of reasons. First, they indicate that the majority (65%) of participants recognize that *some* sort of information on diet and nutrition is available to them in their communities. However, as discussed in other parts of this report, nutritionally-related illness continue to afflict Diné communities at alarming rates. This begs the question, "what type of food related information is being provided and how effective is it?" From the data on who is currently providing this information, we see that most people access this information from Indian Health Service, Special Diabetes and WIC programs. When coupled with the fact that forty-six percent (46%) of respondents said that they do not have access to information on traditional foods, a logical direction would be to look at how much of the information provided in current programming on diet and nutrition includes content focusing on traditional foods. It is also significant that thirty-five percent (35%) of respondents indicated that information on diet and nutrition is not available in their communities.

Another important point emerges from respondent perceptions of who is *currently* addressing food problems, and who *should be* addressing them. While the three programs most perceived as already doing this work are major governmental programs, survey participants very clearly indicated that they, themselves, as community members, should be addressing these issues first and foremost. Although the argument is sometimes made that individuals criticize government without taking ownership for addressing issues, themselves, survey respondents clearly communicated that the responsibility for solving food related problems in their communities rests very much in their own hands. It would follow to say that community-based solutions that find ways to empower community members, locally, to change their food situations for the better will have excellent results in the communities surveyed. Furthermore, in order to successfully incorporate knowledge on traditional foods into formal and community-based solutions, inclusion of community members, elders and knowledge holders will likely lead to solutions that prove effective.

## STRATEGIES

Through the Consumer Surveys, respondents also shared their views on possible strategies or solutions to addressing food system issues in their communities. For example, participant responses indicated a strong interest in creating opportunities for local access points to locally produced foods. In particular, ninety-one percent (91%) of people surveyed said that they would shop at a Farmers' Market if they had access to one. Commenting in an in-depth interview, a participant described why they would shop at a farmers' market:

“Yes, definitely. Because I would know who the grower is, where it’s produced, and know that it is local. I know it will be taken from the field and taken straight to the market. It would have better taste and be high quality as well as fresh. If there was a Farmer’s Market for me here in Tsaile, that would save me gas and time. It’s just right there.”

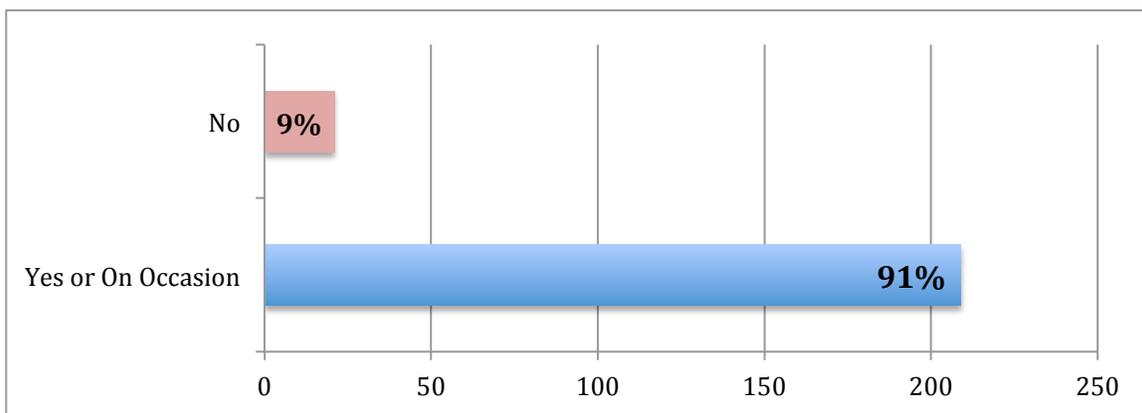


Figure 2.25 Question: *If you had the opportunity to shop at a Farmers' Market (a place to buy fresh food from local farmers) in Tsaile, would you buy groceries there?*

This clear interest in local options for food access, coupled with the great distances travelled by many participants to access food, points to a need for local access points for food purchase. This also shows that respondents are willing to support local farmers from within their communities, as well as a local Navajo economy. Some respondents commented on the social value provided by farmers' markets, as a gathering place for community interaction. Interview participants also highlighted the need for public education toward food information and food systems. Further strategies are discussed at more length within the Implication and Recommendations section of this report.

## **Implications of the Consumer Surveys and Interviews**

The data collected from the Community Food Assessment Consumer Surveys and Interviews demonstrates that Diné people and communities lack access to healthy and fresh food. At the same time this data indicates that Diné people are heavily reliant on the assistance of food assistance programs to meet basic food needs. Therefore the Navajo Nation should be developing strategies and initiatives to address lack of access to fresh and healthy foods on the Navajo Nation.

Surveys and interviews also made clear the overwhelming interest of Diné people in revitalizing traditional foods. Based on this, any strategies to address lack of access should incorporate knowledge and information of traditional foods. This can be accomplished through existing formal programs, such as IHS, Special Diabetes or WIC. However the surveys and interviews also illustrate the need and desire for community based programming that centers around community members, knowledge holders and elders. Exploring new ways to offer these types of programs could lead to high participation among communities. Finally, the consumer section of the Community Food Assessment shows a very high cost associated with current food access for the communities surveyed, while at the same time showing the high interest of Diné people in supporting strategies that support a local Diné food economy such as farmers' markets.

Given the situations illustrated by the Community Food Assessment, a number of measures seem to stand out as potential steps toward improving the food situation in the communities participating, and potentially for other Navajo Nation communities. First, creating learning opportunities for maintaining and reinvigorating Diné traditional food and agricultural practices could not only provide the information that participants indicated they would like, but it would also produce more food locally, and at lower cost than food accessed off the Navajo Nation. By providing educational/informational programming or forums, that engage community members, communities can harness efforts that they indicated they feel responsible for in solving food problems in their communities. In addition, tying in locally produced foods to food assistance programs could help to create connections within communities that will help increase food security, while providing more culturally appropriate and healthy foods to participants. Also, support for local access points, such as farmers' markets could fill gaps in access to foods, locally, while also encouraging consumption of healthier and fresher foods. Programs and efforts to support such local access points should be a serious consideration for future food initiatives. These ideas and others will be discussed in more detail in the Recommendations section of the report.

## GROWER SURVEYS AND INTERVIEWS

### Methodology:

In order to gain the perspectives of community growers within the project area, the project team conducted Community Grower Data Collection Meetings in each of the five chapters represented in the study. During the meetings, data was collected through facilitated focus groups. In these sessions community growers were asked questions that addressed topics such as their reasons for growing their crops, challenges they face as growers and sellers of crops, laws and policies that might make it difficult to produce and/or sell their crops and what might make it easier for them to grow and/or sell their crops. In addition, growers were asked what they would like to see happen in their communities related to agriculture. The grower responses to the facilitated questions were written down and reflected back to participants as the meetings progressed to ensure capturing of grower thoughts accurately. Notes were then compiled and transcribed by Diné Policy Institute interns, and the transcripts were analyzed by the DPI research team to identifying significant themes. Following analysis of each community's responses, the research team identified the following major themes: Why People Grow, Challenges and Barriers to Growing and Community Solutions (What would Make it Easier to Grow Crops?), each with their own respective subthemes. Each theme and subtheme is broken down in this section representing prevalent responses across the five different communities in the study.

### Why People Grow

#### *Food Security by Providing for Ourselves:*

A predominant influence for growing one's own food in the communities surveyed was to promote self-sufficiency, and subsistence lifestyles. By raising their own crops, farmers indicated that they could provide a sense of security for their families, ensuring availability of produce that is commonly purchased today by most people. Not only does this equate to putting food on the table for the family, but also growing feed for livestock. Community members

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*"It just tastes better. Growing up as a child my parents used to always grow fruit and vegetables from their own garden and I miss those days and for some reason it tastes better and its good."*

*- Community Food Assessment Interview*

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mentioned the importance of farming under sustainable practices that help to conserve the limited resources available in our region. By focusing on subsistence approaches, they are able to provide a nice livelihood for themselves and their families. Self-sufficiency also emerged as some people take great pleasure in enjoying the fruits of their labor, and the taste of food grown by their own hand, as opposed to merely purchasing produce in grocery stores. One participant noted, "It just tastes better. Growing up as a child my parents used to always grow fruit and vegetables from their own garden and I

miss those days and for some reason it tastes better and its good." In addition, growers noted that traveling long distances to purchase food and rising food prices provide incentive to promote food security by growing self-sufficiently. Tied to this, some community members also indicated motivation to grow crops as a result of resistance to corporate controls of foods and

seeds. Additionally, raising crops for the purpose of passing on heirloom seeds that can help maintain Diné cultural food connections while also promoting food security and self-sufficiency was also mentioned. Referring to the intricate web of food production and transportation in the global food system, growers also spoke about the need to be self-sufficient in case the “systems” that most people rely on for food fail.

### ***Healthful Living:***

Community growers also indicated health and wellness as key considerations influencing their decisions to grow their own food. At one level growers indicated that growing your own food gives you access to fresh foods. On another, they pointed to the increased nutrition of home-grown crops. Some growers noted that they grow their own crops so that they can access naturally grown and organic foods. Along these lines, they expressed concerns over produce grown under exposure to chemical herbicides and pesticides, as well as concerns over negative effects associated with Genetically Modified foods. Genetically Modified foods were also described as being less nutritious than natural or organic foods. In general, growers grow to ensure that they know the process food has gone through to be produced, a natural food process, leading to healthier foods. Since naturally grown and organic foods can often be expensive when purchased in grocery stores, growers pointed out that growing your own makes it possible to actually *afford* healthier foods. Finally, community growers also indicated a sense of healthful living and well-being from growing your own crops that is gained by physical activity working the fields, as well as spiritual and mental well-being that comes from maintaining connection to growing our own food.

### ***Connections: Identity, Culture and Family:***

When articulating why they grow their own food, a number of community growers mentioned the importance of farming to identity, culture and family. Some mentioned that traditional stories and other cultural teachings were importantly rooted in the ancient Diné teachings of the crop fields and farming. Others spoke of growing to produce foods especially for ceremonial purposes. Not only did they indicate Diné concepts being associated with growing our own food, but also how utilizing the traditional classroom of the farm, growing food can be seen as a powerful teaching tool. Family and community are also important connections influencing farmers to grow. Not only did farmers indicate that growing their own food is important for the purpose of knowledge being passed down within a family, they also noted that this practice promotes family togetherness. By working and experiencing farming together, families and communities build unity. Further, growers pointed to the old way of farming, in which communities of extended Diné families came together to farm and to benefit from the shared produce. This, they noted, was another reason to grow.

## Challenges and Barriers to Growing

### *Water and Climate:*

When posed with the question, “*What challenges do you face with growing in this area?*” an overwhelmingly common response had to do with limited water resources and poor water management. Growers pointed to the drought facing their communities making water even scarcer than usual. This they attribute to climate change, seeing a shift and decline in the monsoons as well as overly windy conditions not experienced in the past. Some also noted a short growing season as a result of the shifts in climate. On the other hand, growers also indicated inefficient use of the water that is present within the community. They cited poor community design related to water use, and noted that much of the available water does not get to crops, and is wasted. Growers pointed out that there is a general lack of efficient water harvesting, and that better methods for collecting water should be sought. They also noted inefficiency in the use of reservoirs for irrigation. This is only exacerbated by the situation in which fish are prioritized in reservoirs above the needs of farmers by Navajo Nation Fish and Wildlife services when it comes to accessing reservoir water. Finally, the issue of contaminated water was also raised by some growers as a challenge.

### *Land Use and Animals*

Another primary challenge to growing voiced by community growers was the issue of land and land use. Many indicated that lack of access to land for farming severely limits the ability of people to farm. While some growers mentioned burial sites or other barriers, most grower comments addressed the complex web of federal and Navajo Nation land use policies that make it difficult for people in their communities to access land that could be used for farming. A significant factor that growers pointed out was the issue of land disputes, and the probate and quiet title processes. Regarding land disputes, community growers commented on the lengthy court proceedings, and a low prioritization of probate cases that ultimately holds up the process of accessing land for farming. Additionally, the legal proceedings involved require contracting costly legal services. In general, this has led to what community farmers see as inefficient use of permits within their given community, as only a small percentage of potential farmlands are actually used for farming. Not only did participants recognize that permits are not being transferred once a permit holder passes on within the community, but they also noted that it is difficult to find land that is not being allocated to grazing permits and those that are being transferred to home site leases. In addition, some growers see the disputes over land and the way that they tear families apart as a breakdown of the Diné system of *K'é*, which in years past would have helped to resolve land issues amicably. Grower participants also shared challenges with the land that stem from animals and ranching. Overgrazing was mentioned as affecting the land, as well as the soil quality. Animals were also noted as eating the crops that growers maintain. Farmers also pointed to difficulty in understanding how to approach conservation planning under United States Department of Agriculture (USDA) programs.

### ***Lifestyle Shift:***

Another set of challenges to growing brought up by community growers focused around lifestyle, or lifestyle shift. Whereas the Diné people of a hundred years ago lived a largely self-sufficient lifestyle when it came to food and farming, today growers see a number of challenges that have made it difficult to grow.

Grower participants from the project area pointed to a change in values, and prioritization of lifestyle that has emerged in communities. The transition to a wage-based economy, they noted, has led to a higher prioritization on school, jobs and money.

In this situation, where emphasis is placed on working under companies, organizations or government, investment is taken away from working with the land and farming. In addition, growers see that the shift to wage-based economies has led to situations of competition and greed taking hold in Diné communities. One community member commented:

“I think we’re just living in age of running a rat race. We don’t have time for our children. We’re just trying to get ahead and see what our neighbors have next door and then we want to have those things. I guess it’s just a material thing. We’ve just been influenced by the western world and we have lost track of what is important in our culture.”

Another participant noted:

“I think my family just relied on our grandparents to be the ones to take care of the cornfield... Before I didn’t work and now my job requires me to be at work every day and I think that is what caused us to move away from our traditional food.”

Another barrier related to lifestyle identified by community growers was that of dependency. Growers voiced that Diné communities are still experiencing multigenerational effects of colonization today in the form of heavy dependence on government for aid. This, they noted, comes in the form of food distribution and other programs. Whereas Diné of generations past did not have social services such as these, growers pointed out that today we depend on them greatly.

Cultural and values shifts were also identified as barriers to growing. Community growers articulated that communities are moving away from traditional Diné teachings and lifestyles. They specifically named the concept of *K’é* and how this concept and its teachings used to influence extended family, clan and community group farming efforts within communities. Where in generations past this system of relationships and community ensured for the wellbeing of the people through farming efforts, today growers see a disintegration of the ancient Diné systems of *K’é* and the intergenerational connection among youth and elders.

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*“I think my family just relied on our grandparents to be the ones to take care of the cornfield... Before I didn’t work and now my job requires me to be at work every day and I think that is what caused us to move away from our traditional food.”*

-Community Food Assessment  
Interview

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What community growers shared as breakdown of the traditional lifeways associated with land, farming, *K'é* and other concepts, feeds into another challenge they see in that traditional knowledge is not being passed down from one generation to the next. One survey participant commented:

“I would say because lack of people who have the knowledge, not a lot of people come out to teach the traditional food with the agriculture... I guess there are just not enough people to go out and teach what the traditional food is and how to prepare it.”

Growers point out that this loss of traditional agricultural knowledge has led to loss of farming knowledge and people who do not know how to plant anymore.

Additionally the intergenerational breakdown has led some growers to see youth as unmotivated toward farming, lacking commitment toward the pursuit of agriculture. Some even commented that in general, laziness is a barrier to growing. Tied to this is the modern food lifestyle shift from being self-sufficient producers of food, as in generations past, to dependent grocery shoppers, as many growers noted that Diné people are today. Convenience, as growers noted, of supermarkets, and even gas stations and other places foods are sold, has made farming less attractive, and less necessary than it was in years past.

Finally, other system issues related to lifestyle were raised by grower participants. One concern had to do with fear of liability for selling crops. In the modern legal system some growers, or individuals who would like to grow, fear that under the current set of laws and regulations for food, they could be putting themselves in jeopardy by selling crops. Still another concern raised by growers had to do with taxes. By having to report money earned from selling of crops, some growers felt they may become ineligible to receive some forms of assistance.

### ***Resources:***

Community growers also commented on the lack of resources or access to resources that enable them to farm. On one hand they talked about the need for better access to non-commercial, non-treated seeds. It was noted that Native seeds are difficult to find as opposed to genetically modified or treated seeds.

In addition, some community growers indicated a lack of sufficient equipment, such as tractors, tools, and piping for irrigation, that would make the farming process more easily accomplished. Tied to lack of physical resources, growers discussed lack of funding to help cover what they see as high costs, including fuel and labor.

## Community Solutions (What would Make it Easier to Grow Crops?)

### *Land and Water:*

Given the challenges that they voiced, when asked what would make it easier to grow crops, community growers shared a number of ideas related to land and land use. Underlying many of their comments toward land, growers called for comprehensive and effective land use policy reform. They indicated that appropriate distribution of the different types of permits that allowed for efficient utilization of the land was key to this. This, they suggested, should include placement of different types of plots for homes and crop fields, as well as the sizes of plots.

Significantly, community growers also commented on changes to who controls the land use within communities. Growers noted that local control of the permit process would produce more appropriate outcomes for communities and empower community members to become more involved. For those communities that have Farm Boards, the suggestion was made to turn over authority for regulation and oversight of farm land issues to that body.

## **IMPLICATIONS OF COMMUNITY FOOD ASSESSMENT:**

Through examining both consumer and producer perspectives on food systems, the Community Food Assessment identifies a number of key issues facing Navajo Nation food systems and possible ways to address them from different angles. To begin, it is clear from the findings that there is a lack of access to fresh, healthy, quality foods in communities surveyed. Although Navajo Nation communities and families were able to provide for their own food in generations past, today a great deal of Diné people are food insecure, and the data shows that a significant number are food insufficient. This is exacerbated by the low incomes of participants in this study, and the high cost to access food in locations away from the Navajo Nation, as a majority of participants in the study do. Growers articulated that the number of food producers in the area has declined significantly, and this certainly plays into the lack of access to healthy food experienced. The system of policies and government structures that are established to help community growers, often provide barriers to their success in the form of land and water use situations that make effective and appropriate use of communities' resources for producing their own food difficult.

This situation has led to what consumers and producers both describe as a state of dependence. Although growers pointed to the benefits of self-sufficient, local food production in their communities leading to healthier, safer, more affordable and tastier foods, they also noted that a great deal of their fellow community members are heavily reliant on food assistance programs to meet their basic food needs. Data from consumer participants affirms this point. The fact that people from the study area who wish to access fresh, healthy foods, must expend a great deal of resources to do so, makes it understandable that so many people rely on food assistance to meet their basic food needs, which in turn creates a state of dependency.

Yet even though they described the challenges that they face related to food access and food production, participants in this study also described their interests to change things for the better and how they could see this happening. One key area identified by consumers and growers to affect positive change is in the area of knowledge. While participants indicated that some forms of information related to food are provided to their communities, many are unaware of the locations from which their food originates. Growers noted values shifts and disconnect between younger community members and the teachings and principles associated with farming, whereas consumers very clearly stated that they (and the majority of people in their communities) are interested in revitalizing traditional food and agricultural practices, and learning more about traditional foods. This is all in the wake of consumers and producers identifying that current food consumption contributes to nutritionally-related illnesses in their communities.

Drawing from consumer and producer input, solutions to food system issues should include opportunities for community members to bring about change at the local level. Learning opportunities and education related to traditional food and agricultural practices will address the concerns and hopes of both growers and consumers, while at the same time increasing food security and empowerment among local communities.

Given consumer and grower responses to *who* should be responsible for addressing community food system issues, solutions that are based on local community control and involvement can lead to outcomes that not only increase the efficiency and appropriateness of agricultural solutions, but also provide for rekindling of community togetherness and values. Additionally, initiatives to support the partnering between local producers and food assistance programs can also address food security, while ensuring that growers have outlets for their produce. Finally, given the strong interest in innovative approaches like farmers' markets, participants from the study area communicated their support for local producers and locally accessible food options.

### III. DINÉ KNOWLEDGE AND FOOD

*This section is not intended to speak for the cultural beliefs and perspectives of all Diné people, but is a representation of significant themes and teachings that DPI encountered through its research. This section was informed by a DPI hosted Advisory Circle on the topic of food, work with DPI's Cultural Liaison, conversations with Traditional Practitioners, Medicine People, and Community-Based Knowledge Holders, as well as interviews with Farmers, Ranchers, and Community Members.<sup>4</sup>*

#### Why is culture so important in analyzing the Navajo Food System?

Diné people have a rich history with food that has helped to form and shape Diné identity. Many of the most important teachings, lessons, and philosophies that orient Diné perspective on life are rooted in traditional stories and teachings of food and the many life beings in the Diné environment that provide for food. Not only are important guidelines for life embedded in teachings on food, but very practical knowledge of Diné environments, ecology, climate, social interaction, health and wellness, among others, are fundamentally tied to the teachings and practices of food. With this in mind it is only logical to carefully focus on traditional Diné knowledge that has a track record of sustaining the Diné people through countless hardships and ensured for the survival of the people and a good life. By considering Diné traditional teachings on food, solutions that are relevant, appropriate and effective can be formulated for addressing the food issues of the Navajo Nation today.

#### Methodology:

In order to identify traditional Diné perspectives on food, DPI convened an Advisory Circle, comprised of traditional Diné knowledge holders and elders recognized for their expertise in topics surrounding traditional Diné food practices and teachings. Advisory Circle members convened in a focus group format, and were prompted with various questions related to the topic of food. Their responses were recorded, transcribed, and translated, and the DPI research team analyzed the session transcripts to identify key points and themes that emerged. DPI worked closely with Cultural Liaison, Avery Denny, to frame its approach to gathering information on traditional Diné teachings on food. Mr. Denny helped DPI to formulate questions and topics that would inform the research. Finally, perspectives of other elder knowledge holders who participated in presentations as part of DPI's Food Sovereignty Initiative have also been interwoven into the perspectives provided.

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<sup>4</sup> Information in this section was identified through work with DPI's Advisory Circle and Cultural Liaison. These concepts were supported by information provided by other knowledge holders, for which additional citations appear in this section.

## Connections to Food: *Placed for us*

The relationship that Diné people have with food can be traced back to the origins of Diné existence. Diné traditional oral narratives speak of plants being placed on the earth in a sacred and holy way by the *Diyin Dine'é* (Holy People) to provide for the sustenance and well being of the Diné people. These plants predated human beings, and were placed for the people with laws and rules to guide the people to interact in an appropriate manner with the sacred life beings. It is said that the blessings of sacred food plants were given by Changing Woman to feed the Diné people. Also according to oral narratives, Diné people owe our existence to a food plant, corn, as we are said to be made from this plant. The oral narratives tell us that, in the making of the human beings, corn was used in formation of our physical beings, especially the right and left sides of our brains, and for this reason we have a particular connection to this plant, which also provides for our sustenance. The importance of corn in connection to our origins is also seen in the stories of some clan groups who are said to have originated from corn.

## Roles, Relationship and Duty

As with all things in life, in traditional Diné teachings the plants and animals that are consumed as foods are understood and interacted with in terms of relationships, based on the system of *K'é* (or the ancient system of kinship observed between Diné people and all living things in existence). All plants and animals are seen as life beings, and in this way, these beings are looked at as relatives to the Diné people. They are alive and have voice and inner spirit, just as human beings. Plants can hear, think, feel and communicate. As living beings, Diné people are to treat plants with the same respect and duty of care as we would our birth mothers, siblings, and clan relatives. We address them with song and prayer, and treat them as sacred beings. Diné teachings reflect a responsibility to protect these life beings, which have been placed on the earth with particular purposes. At the time of creation, it was determined what roles specific plants would play, including which would serve as food for Diné people. The Diné people were not to exercise ownership or alteration of these life beings, just as they would not do the same to their mothers or siblings.

## Food as Part of the Environment: Laws and Rules for Reverence

Diné oral narratives hold that when foods were placed on the earth for the people, laws or rules were provided to guide the people's interaction with, and accessing of, these life beings. Earth, sky, plants and all living things in existence live according to *Diné Bibee Nahaz'áanii Bitsésiléi* (Fundamental Laws of the Diné). These laws, as described by *Nahasdzáán dóó Yádiłhít Bits'áqádeé' Bee Nahaz'áanii* (Diné Natural Law), call for the appropriate respect, reverence and protocol of offering for the accessing of natural elements, including our food sources. Our elders teach that Diné people were charged with the responsibility to care for and protect sacred life beings such as plants, animals and other life sustaining elements, as is described in Diné Natural Law:

The Diné have a sacred obligation and duty to respect, preserve and protect all that was provided for we were designated as the steward of these relatives through our use of the sacred gifts of language and thinking (1 N.N.C. § 205)

As such, alteration or other abuse of the properties of living things would cause negative consequences to the people. At their creation, the rules for how plants could be used were set in place. Some of these laws guide what cannot be accessed for food, including certain plants that are for other animals, or not to be consumed at all. These rules also address plants and animals that have been affected by forces of nature, such as lightning, as well as foods of certain kinds that are not to be consumed during and after certain ceremonies. Even specific guidelines for what parts of plants and animals can be consumed were given. At the root of these laws and teachings is the focus on maintaining reverence for the life beings that make up our food sources and living in balance with those life beings as part of the greater, interconnected environment of all things living.

In relation to cultivated plants, it is said that the Holy People shared with the Diné people the teachings of how to plant, nurture, prepare, eat and store our sacred cultivated crops, such as corn. The importance of these teachings to our well-being was made clear in that the Holy People shared that we would be safe and healthy until the day that we forgot our seeds, our farms, and our agriculture. It was said that when we forgot these things, we would be afflicted by disease and hardship again, which is what some elders point to as the onset of diabetes, obesity and other ills facing Diné people today.<sup>5</sup>

The quantity of foods and other resources consumed is another concept for which guidance is provided from Diné teachings. The Diné teaching of *t'óó bikíínígo* (take just enough) was provided to ensure that we are able to access and consume only what is necessary for our survival, while also being careful to protect and conserve the foods and natural elements to which we have access, not overusing them which would create imbalance. By overusing these precious food sources, it was said that they would move away from us, or that they would disappear or no longer exist for humans to access.

## Spirituality and Wellness

Our traditional teachings also tell that food plants hold a unique place with respect to Diné spirituality. Diné people access some plant life that also serves as our food for purposes of prayer and healing. Positive blessings and good health and wellness are sought through these plant life beings that we ingest or otherwise access. The corn plant is especially important to Diné spirituality, in that corn is used in various ways within ceremonies, prayers and offerings. Corn pollen and corn meal provide for the connection that Diné people seek to access the positive effects of spirituality.

Not only do we utilize corn as a catalyst to engaging Diné spirituality, but the teachings say that prior to planting, harvesting or gathering food plants, prayers are to be done to help maintain the connection that we share. Also related to spiritual connection to corn, it is even said that corn

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<sup>5</sup> Johnson Dennison, “Diné Knowledge of Seeds.” (presentation, Diné Policy Institute Seed Conference, Tsaile, AZ, April 5, 2013).

prays for the Diné people to live in *hózhó* (balance with all in existence), and restore and maintain the natural cycle of life.

Diné teachings also convey the healing and wellness-promoting role of foods in Diné worldview. Plants accessed for traditional purposes, such as corn, beans, squash and tobacco are said to be important to our mental, emotional, spiritual and physical well-being. Foods like *alkaad* (ground-cooked corn cake) make up a key part of the wellness sought from ceremonies and even for daily life. While certain herbs and other plant-based foods contribute directly to restoration of *hózhó* in the ceremonial setting, cultivated crops such as corn and squash are told to help promote and maintain health and wellness by nourishing and strengthening Diné people and preventing adverse health in ways that go beyond purely chemical or physiological effects. From these teachings and generations of positive health and wellness we internalized the idea that the natural foods that we grew and harvested will nurture our bodies toward wellness.<sup>6</sup>

## Nutrition

Looking at food through the lens of nutrition, Diné elders point to a vastly different diet among Diné people today than that which sustained our people for generations in the past. They highlight the fact that today's diet among Diné people is high in fat, sugar and salt. They note that adoption of foods such as eggs, bacon and potatoes from mainstream America into the common Diné Diet, as well as fast food and ready-made foods, has led to adverse health effects. In terms of food portions, modern mainstream American restaurants promote the “all-you-can-eat” approach to dining, which is antithetical to that of the Diné traditional teaching of “*t'óó bikiínigo*,” or “take just what you need.”

Shift in the types and portions of foods consumed by Diné are seen as leading to a number of adverse effects such as diabetes, obesity and high blood pressure. Knowledge holders have observed that Diné people have higher incidents of allergies today than in the past, and that due to the modern diet, puberty ceremonies are occurring at younger ages for girls. In addition, whereas Diné people of generations past were aware of the teachings and origins of the historically consumed traditional foods, today there is a general lack of awareness of what is being consumed. Elders say that when a person raises crops or livestock they know what goes into that food source, and where it is coming from. In the modern Diné Diet, many items purchased at grocery stores are shipped long distances and are loaded with ingredients that are difficult to identify.

## *T'áá Diné Bich'iyá'*: Traditional Navajo Foods

The term, “traditional food” is one that can be complicated and have varying interpretations. Diné oral narratives share that there were sacred plants initially placed for the Diné people: Corn, beans, squash and tobacco. By consuming these foods, it is said that a person will live a long life and reach the ultimate goal of sacred existence in old age. Through the blessings of the Holy People, the Diné people were bestowed with cornfields to provide our food, and it was said

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<sup>6</sup> Ibid.

that if we ever lost sight of our traditional foods, we would have health problems. By eating corn, beans and squash our bodies and organs function as they should and healthy skin is promoted.

Although some more recent concepts of “traditional foods” include foods such as fried bread, fried potatoes and Navajo tacos, when asked to describe what is meant by traditional foods or “*T’áá Diné bich’iyá*”, elders describe foods that have been part of the Diné Diet since the time



Four Sacred Diné Plants: Corn, Beans, Squash, Tobacco

prior to American conquest. These pre-conquest traditional foods of our ancestors typically fell into two main categories: cultivated crops and wild foods. Cultivated crops were made up of the white, blue, yellow and multi-colored corn, as well as beans, squash, melons, peaches, apricots, and others. Traditionally harvested wild foods were made up of naturally occurring plants like *hashk’aan* (yucca fruit), *chiilchin* (sumac berries), wild celery, wild oats, acorns, herbs, berries and other plants (Advisory Circle). Traditional meats included prairie dog and rabbit, as well as horse and deer meat. Prepared traditional foods included, steamed corn, stews, blue corn mush, dumplings, iced blue corn, *nitsidi go’i* (kneel down bread), noodles, pancakes, piki bread (paper thin, rolled bread) and corn bread. However, although the naturally occurring and cultivated crops made

up the majority of the Diné Diet in generations of the past, today they are scarcely seen or prepared, as the Diné food system and the Diné lifeway have been dramatically affected by the mainstream American diet. This has led to a marked decline in the frequency with which Diné people partake in traditional food practices, and many Diné young people are completely unaware or unknowledgeable of these ancient foods that once sustained the Diné people.

### ***Diné K’ehgo Bee Iiná: Lifeway***

To Diné people of past generations, food was not just a commodity that could be purchased and used to satisfy hunger or cravings. The many teachings, lessons, activities and experiences associated with food were deeply intertwined with the lifeway of the people, a lifeway that provided for strong, healthy, well-balanced individuals, and tight-knit families and communities.

In Diné society of the past, all aspects of interaction with food were important. As with many aspects of Diné life, planting and harvesting of crops and wild foods was guided by the order of Nature as these activities were closely associated to the seasons. Each plant would grow and mature at certain times of the year, and were planted, harvested or collected at specific times of the year. Accordingly, certain foods were eaten at particular times of the year. The planting and cultivation of crops that was done each year, was a group effort of the local extended family group. While elders speak of how groups of people from the same clans would come together and work together for the plowing, planting, weeding, protection and harvesting for community

farms, they are quick to point out that this system of community effort has all but disappeared. It is this type of teamwork and community building effort that helped to maintain tight-knit Diné communities and concern for the well-being of each other that many elders note has dwindled today.<sup>7</sup> Additionally, by involving the whole community, everyone contributed, and everyone benefited from the crops, ensuring that all were well fed. Not only did people come together to plant, tend to and harvest traditional foods, but they also came together to help each other with preparation of traditional foods like *alkqad* (ground-baked corn cake).

These community efforts also provided food security for our people, in that all of the families who participated were able to partake of the produce at harvest time, many times having ample amounts to store for the winter. Seeds and food were yielded each year and stored for the next. When more than enough food was harvested, crops like watermelon and cantaloupe were stored and saved in the cellar for later consumption. Focus on the importance of Diné spiritual lifeway was maintained, as prayers were done on the seeds before and after planting. (Advisory Circle)

Through investing our own time, energy and effort into growing our own foods, Diné people instilled core values that had sustained our people through many hardships in the past. They built and maintained an appreciation for the food they had nurtured into existence, and an ethic for hard work was cultivated within them. Young people learned through observation and participation in the processes related to farming and preparation of traditional foods, as well as their relation to seasonal and ceremonial concepts. With determination, will and respect for the teachings of proper interaction with food plants, the people cultivated their own food, exercising true self-sufficiency. The Diné teaching of *T'áá hwó ájit'éego* (self-determination, self sufficiency and motivation) was experienced through the continuous cycles related to food. While elders point out that it is common to hear Diné people today ask “do it for me,” or “*shá*,” they share that it was through responsibility and self-dependency that we maintained a positive quality of life in generations past. However, elders note that these same teachings and experiences that instilled such important life lessons and values have sharply declined in our present day society, as they are very aware of the shift toward mainstream American diet and the effects of that shift on the well-being of the Diné people today.

Elders observe that today the traditional teachings and lifeway related to food are declining. Whereas in generations past youth were raised being involved in observing, participating and doing the activities that led to consumption of culturally significant and healthy foods, in modern society, the valuable teachings and concepts of our origins with, and connections to, food are not being passed on to and maintained by many young people. Some knowledge holders feel that the stories they share are not understood. Mainstream information and advertisements related to food increasingly drive decisions about what foods Diné people consume and how we consume them. Elders observe that in the modern diet, priority is often placed on convenience and expedience of food options. The disconnect from the participation in cultivating our own foods has led to disconnect from the very values and life teachings that have helped Diné people since time immemorial to experience positive individual and community development and to grow to be resilient and self-sufficient members of the Navajo Nation.

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<sup>7</sup> Ibid

In relation to physical health, Diné elders note that, when Diné people grew and prepared food from scratch, nutritionally related diseases were scarce among the people and physical fitness was much more common. It is observed that today we buy food at stores and freeze it for long periods of time, especially ready-made meals, not cooking as in the past. As Diné food consumers, we have experienced a dramatic change in lifestyle related to food. As a result of the shift in our ways, we have entered into an era of combating adverse health effects, the likes of which would shock our ancestors.

### **Closing**

Diné Knowledge is rich with lessons for a healthy, balanced, productive and happy life. These lessons were learned in the ancient system of lifeway that was lived by Diné of generations past. This lifeway guided the Diné people through countless hardships and adversities to become a strong, resilient and grounded people. However, the lifeway that provided the guidelines to Diné resilience was rooted in a food system that stressed the importance of a multitude of elements toward wellness that are not seen in modern mainstream American society's food consumption. As we examine other aspects of food on Navajo Nation, careful consideration should be given to what ancient Diné teachings on food have to offer our present day situation. As elder Advisory Circle members in this study pointed out, it is with our well-being in mind that they pray and hope that the younger generation will find ways to learn and draw from our traditional teachings for a positive future.

## IV. A Historical Analysis of the Diné Food System: Transitions in Diné Lifeways, Diet, and Agriculture

In describing the major issues with food on Navajo Nation today, significant themes emerged in both the Community Food Assessment and the perspectives of Diné knowledge holders. The decline of Diné agriculture, food systems, culture, family and community, and other lifestyle shifts, are all themes that can be attributed to the transition to a wage based economy in Diné Society. This section provides a historical analysis of the Diné food system to contextualize these themes and to gain a greater understanding of how shifts in Diné food and agriculture occurred, including what role policy has played in shaping the current Navajo Nation food system. The historical analysis most significantly reveals the impact of practices and policies of colonization that intentionally destructed the Diné food system, changed land use and agriculture practices, detached Diné people from indigenous food knowledge, created dependence on federal food assistance programming, and ultimately left the Diné people with a nutritionally insufficient and inferior diet, resulting in a health crisis on the Navajo Nation.

### Food at the Emergence

According to Diné emergence stories, corn, squash, beans, and tobacco (a spiritual food) were gifts from the *Diyin Dine'é* (Holy People) at the time of emergence into this world, and this formed the backbone of the diet of the people. In some versions of the Diné emergence narratives, Diné people were even created from corn. *Yootgai Asdzáán* provided seeds to the first four clans to sustain themselves, and the *Diyin Dine'é* informed the Diné people that everything that we needed to lead good, healthy lives and reach old age could be found within *Diné Bikéyah* (Navajo homeland) and the boundaries of the four sacred mountains. Outside of the cultivated crops this included wild animals: elk, deer, antelope, prairie dogs, rabbits, squirrels, badgers, porcupines, but excluding fish, birds, bear, cougars, coyotes, which were culturally restricted; insects, such as locusts, and wild plants: yucca fruit, sumac berries, wild spinach, Navajo tea, pinons, wild onions. So extensive was the knowledge of wild plants that in an anthropological study from the 1940's, Navajo informants were still able to identify over 500 plants for food, beverage, medicine, and ceremonial usage, which was described as only a preliminary attempt to document Diné ethnobotany.<sup>8</sup> Outside of the foods cultivated, hunted, and collected by Diné, other foods were obtained through trade with other tribes, including plums and cherries from Hopi orchards.

### Spanish Influence

With the arrival of the Spanish colonial forces to what is now considered the Americas in the late fifteenth century and to what is now regarded as the American Southwest in the 16<sup>th</sup> century, Diné people gained access to new food sources. Peaches, apples, melons, and wheat were adopted into Diné agriculture. The Spanish also brought to the Americas horses, cattle, goats, and mostly notably the Churro sheep, which would become synonymous with Navajo life and diet in the following centuries. Livestock was obtained through trade, but also through the practice of raiding, which came to characterize interactions between the Diné, neighboring tribes,

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<sup>8</sup> Judy Kopp, "Crosscultural Contacts: Changes in the Diet and Nutrition of the Navajo Indians." *American Indian Culture and Research Journal* 10, no.4 (1986): 4.

and the Spanish and Mexicans in the centuries to follow. The integration of livestock into Diné life marked not only a significant dietary shift, but also major lifestyle and economic shifts; Diné people became herders.

Spanish attempts to convert and conquer the Diné were unsuccessful and largely abandoned by the 18<sup>th</sup> century. The Diné remained out of the realm of Spanish, and later Mexican rule and authority. While the Spanish and Mexican influence to the Diné Diet is significant, it is important to note that Diné people still actively managed their food system by continuing to produce their own food during this time period. This, of course, would change when the next major shift in the Diné Diet came with the arrival of the Americans into Diné territory some 200 years after the Spanish.

### American Encroachment, War and Conquest

In the 1800's, the United States Government carried out aggressive and violent western expansion under the premise of "Manifest Destiny," a belief that white Americans had a divinely sanctioned right to claim lands not only claimed by Mexico but also inhabited by Native peoples. This expansion gave way to the Mexican-American War, ended by the Treaty of Guadalupe Hidalgo in 1848. This treaty gave the United States claim to occupy Diné territory through the lense of American legalities; however, this was not the perspective of Diné people.



"American Progress" 1872 painting by John Gast illustrating American conquest, expansion, and the removal of Native people that made this possible

The arrival of the Americans into the Southwest further added to existing tensions in the region. Prior to American military presence, Diné, neighboring tribes, and New Mexican settlers, engaged in raiding for livestock, food stores, and slaves. This raiding economy between Diné and other regional tribes was fostered by an extensive Native slave-trade economy throughout New Mexico, extending far into Mexico; thousands of Native Americans were held in captivity including a significant number of Diné. Diné frustrations mounted over the continued slave raids in the American period, encroachment on land and agricultural resources from New Mexican and American settlers, and the killing by American troops of Narbona, a prominent and elderly peace leader among the Diné.

In 1851, under orders, American troops entered Canyon De Chelly and in addition to shooting people on site, also carried out scorched earth tactics, burning the fields and orchards they found.<sup>9</sup> Following the expedition, Fort Defiance was built within Diné territory, becoming not

<sup>9</sup> Maurice Frink. *Fort Defiance & The Navajos*. (Boulder: Pruett Publishing Company, 1968), 17.

only center for military campaigns but also a point of food trade between American soldiers and Diné people. Forts also introduced rations, distributed through monthly ration days at the fort. In 1858, the American military declared war on the Navajo, again employing scorched earth tactics. While intermittent period of peace came in the following years, by 1863 the American military commander of New Mexico, General James H. Carlton, resolved to eradicate the Diné from their lands, with the expressed intent to open up Diné lands to American settlers and to mining interests.<sup>10</sup>

General Carlton employed Kit Carson to carry out a campaign of terror and force the people to relocate to a “reservation”, a concentration camp in eastern New Mexico. Although scorched earth tactics had been employed by previous Spanish, Mexican, and American military campaigns, Carson oversaw the most aggressive and systematic attack on the Diné and their food system. Carson’s scorched earth campaign including the slaughtering of livestock, burning of fields and orchards, and the destruction of water sources. The extensive peach orchards of Canyon De Chelly were a particular focus of this destruction, which fed American troops during their numerous military expeditions of the canyon.<sup>11</sup> Under the command of Carson, Capt. John Thompson cut and burned down over 4000 peach trees throughout the canyon, in addition to cornfields, during a week-long campaign in the late summer of 1864.<sup>12</sup>

#### Oral history of Kit Carson’s scorched earth campaign:

“Unexpectedly, Bi’éeé’ Łichíí’í (Red Clothes’ [Kit Carson] Soldiers) arrived, destroying water wells – contaminating them, breaking the rocks edging the waterholes or filling up the holes with dirt so that they became useless. They also burned cornfields and the orchards of peaches. That is what they did to us unexpectedly and unreasonably, because most of us were not harming anybody. In the open fields we planted squash and corn. We lived peacefully, not expecting a conflict. We naturally were a peaceful people.”

*Howard W. Gorman, Navajo Stories of the Long Walk*

Box 4.1

This scorched earth policy effectively starved many Diné people into surrender. Word reached those who had not been captured that food was being distributed at Fort Defiance. Many families chose to go to the fort to alleviate their hunger and discuss peace, unaware of Carleton’s plans for relocation.<sup>13</sup> Upon arrival at the fort, the Diné found they could not return back to their homes and were captives of the United States military.

## Hwéeldi

Beginning in the fall of 1863, Diné captives made the first of many forced marches to Fort Sumner, known as “The Long Walk.”<sup>14</sup> The experience was profoundly traumatic, to say the

<sup>10</sup> James H. Carleton letter to Major General Harry Halleck, May 10, 1863, in Robert A. Roessel, Jr, *Select Navajo Historical Occurrences, 1850-1923*. (Tsaile: Navajo Community College Press, 1974), 9.

<sup>11</sup> Stephen Jett, “History of Fruit Tree Raising Among the Navajo”, *Agricultural History* 51, no. 4 (Oct. 1977): 693-694.

<sup>12</sup> *Ibid*, 695.

<sup>13</sup> Rita Wheeler, *Navajo Stories of the Long Walk*, ed. Broderick Johnson (Tsaile: Navajo Community College Press, 1973), 82.

<sup>14</sup> Peter Iverson, *Diné: A History of the Navajos* (Albuquerque: University of New Mexico Press, 2002), 52.

least. Along the way, the people suffered from cold, starvation, slave raids, rape and brutality from the soldiers. Numerous oral histories tell of pregnant women and elderly being shot because they were unable to keep with the pace set by soldiers.<sup>15</sup> Many died en route to Fort Sumner. The Long Walk and period of internment at Fort Sumner is called *Hwéeldi* (time/place of great suffering).

#### Barboncito's call for return to Diné Bikéyah

In the negotiations leading up to the Treaty of 1868, Barboncito spoke of failure of crops at Fort Sumner and the need to return to Diné Bikéyah:

“The bringing of us here has caused a great decrease of our numbers, many of us have died, also a great number of our animals. Our Grand-fathers had no idea of living in any other country except our own and I do not think it right for us to do as we were never taught to. When the Navajo were first created, four mountains and four rivers were pointed out to us, inside of which we should live, that was to be our country and was given to us by Yoolgai Adzaan...

This ground we were brought on, it is not productive, we plant but it does not yield, all the stock we have brought here have nearly all died... It is true we have put seed in the ground but it would not grow two feet high, the reason I cannot tell, only I think this land was never intended for us, we know how to irrigate and farm, still we cannot raise a crop here...

I hope to God you will not ask me to go to any other country except my own.”

#### Box 4.2

Upon arriving to Fort Sumner, the people found that the land was unsuitable for farming. The soil at Bosque Redondo was high in alkali content, and due to crop failure year after year, Bosque Redondo was unable to sustain the nearly ten thousand Navajos now living there. Carleton had selected the site despite criticism that it would be inadequate to provide for the people, as he also underestimated the number of Navajos that would be interned there.

Due to failure of crops, restrictions on hunting, and the unavailability of familiar native plants, the Diné had to depend on the United States military to feed them, marking a major turning point in the history of Diné food and self-sufficiency. Food rations were inadequate and extremely poor in nutritional content, consisting primarily of salted pork, cattle, flour, salt, sugar, coffee and lard.<sup>16</sup> Diné historian Dr. Jennifer Denetdale recounts the suffering:

They were not used to the food that was offered to them as rations. You had white flour; beans, green coffee beans, rancid bacon... They got diarrhea and dysentery and died from the food as well. They also tell stories about how the food had just been destroyed and they would have to resort to having to eat coyote and crow to discover that they were just utterly inedible... And so this was a very, very traumatic time for my people, and we still haven't forgotten. It's still very much a part of our memories.<sup>17</sup>

Over 2,000 people died while held in captivity at Fort Sumner, largely due to starvation. Fort Sumner was deemed a failure, and General Carlton was relieved of his command. While the U.S. government had planned to relocate the Diné people to a territory in Oklahoma, Barboncito – the

<sup>15</sup> Ibid, 55.

<sup>16</sup> Ibid.

<sup>17</sup> Jennifer Nez Denetdale, interview, *The Long Walk: Tears of the Navajo*, directed by John Howe (Salt Lake City, UT: KUED7, 2008), DVD. Accessed August 29, 2013.

<http://www.kued.org/productions/thelongwalk/film/interviews/jenniferNezDenetdale.php>

Diné spokesperson elected to advocate on behalf of his people – successfully negotiated their return to a portion of their original homeland.

## Treaty of 1868

While the Treaty of 1868 allowed for Diné people to return to *Diné Bikéyah*, the treaty did so in the form of a reservation and also established the authority the United States government over the Diné people. This would have profound, long-term impacts on the Diné lifeways and the Diné food system. Of the numerous provisions in the treaty, the federal government committed to distributing food upon the Navajos’ return to their homeland, inaugurating the federal food assistance programs that would play a major role in dietary shifts among the Diné a century later.

The Treaty of 1868 also gave the United States regulatory authority of agricultural land use within the newly established reservation through a certification to be administered by an Indian agent. This process disregarded the existing Navajo views of agricultural land management, promoted individualist and non-communal land use, undermined the matrilineal tradition in Navajo society, as well as put land disputes under the jurisdiction of the United States rather than families and communities.

The treaty also stipulated government distribution of livestock to the Diné upon their return in order to allow them to rebuild their herds.

### Article V of the Treaty of 1868 reads:

If any individual belonging to said [Navajo] tribe, or legally incorporated with it, being the head of a family, shall desire to commence farming, he shall have the privilege to select, in the presence and with the assistance of the agent then in charge, a tract of land within said reservation, not exceeding one hundred and sixty acres in extent, which tract when so selected, certified, and recorded in the “land book” as herein described, shall cease to be held in common, but the same may be occupied and held in the exclusive possession of the person selecting it... The United States may pass such laws on the subject of alienation and descent of property between the Indians and their descendants as may be thought proper.

Box 4.3

## Early Reservation Years

Recognizing that the Diné could contribute economically in the emerging American capitalist economy through sheep products, the federal government encouraged the expansion of Navajo herds. “Diné women wove blankets for a commercial market, and families bartered wool, pelts, and blankets for goods at trading posts.” Yet for Navajo people, sheep and livestock had greater significance than as means of wage income. Many Diné described their livestock as their mother. Sheep and livestock were their “means of subsistence, their years of labor invested in building herds, their legacy to their children,” and were very much interwoven into their culture.<sup>18</sup>

Several nutrition surveys in the early 1900’s provide a more detailed understanding of the Diné Diet in this era. Staples of Diné diet included mutton, goat, goat’s milk, coffee, flour, corn, squash, beans, potatoes, canned vegetables (obtained from the trading posts that came onto Diné land after the reservation had been established), as well as continued consumption of wild plants and game meats. This diet demonstrates that while rations and commercial foods were impacting

<sup>18</sup> Marsha L. Weisiger, *Dreaming of Sheep in Navajo Country* (Seattle: University of Washington Press, 2009).

the Diné Diet, many of the dietary staples were still foods produced and collected by Diné people themselves.

## Livestock Reduction

In the 1930's, numerous economic relief programs and agencies were created under the New Deal to combat the economic depression. In response to the drought across the Western states and concerns over another “dust bowl,” the government enacted the Emergency Conservation Work Act in 1933, which authorized the Civilian Conservation Corps to focus on conservation efforts of federal lands, including Indian reservations<sup>19</sup>. Additionally, New Dealers professed that soil erosion on the Navajo Nation was the result of overgrazing from Diné livestock herds and was creating the silt build-up of Boulder Dam and Lake Mead. While New Dealers cited overgrazing concerns as the primary reason to reduce Diné livestock, some historians have suggested that the underlying motive for the livestock reduction was less about land conservation and more about the very real fact that Diné herds clashed with American expansionism. This situation has been associated to, “Anglo cattlemen restricting Navajo access to traditional off-reservation ranges.”<sup>20</sup>

The Bureau of Indian Affairs (BIA) ordered a stock reduction of Diné herds in 1933, and again in 1935 and 1945. It was estimated that Navajos had over 1.3 million sheep and goats, and the BIA sought to bring Diné herd size to below 560,000 sheep, goats and cattle. This figure was based on the “carrying capacity”, a BIA-determined number of livestock that the rangeland could sustain. At first reduction was voluntary, and later became mandatory. The tribal council reluctantly endorsed the plan when John Collier, the Commissioner on Indian Affairs, told them reduction could ensue with or without delegates’ permission.<sup>21</sup>

Implementing a reservation wide stock reduction had harsh and traumatic results. Most agree that under the direction of Collier, the Navajo livestock reduction was not well thought out, poorly implemented, and did not consider a replacement for the Diné economy centered around sheep. In some areas, the reduction was carried out humanely and meat was shipped back to families, but in many other instances, Diné herds were slaughtered senselessly and inhumanely. Collier and others did not account for the great distances to reach the nearest railroads for livestock to be transported to slaughterhouses. Herds were haggard by the time they reached railroads and worth less than the cost of travel. Soon canneries were overwhelmed. At that point, BIA officials killed herds on spot, left them to rot, all in front of Diné families. Some herds were even driven off cliffs, while others were doused with kerosene and burned alive.<sup>22</sup> Many Diné families were horrified over witnessing the mass killing of their herds, their livelihood, and sources of nourishment and life. In the end, the BIA had reduced Navajo livestock to well below the targeted carrying capacity figure.

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<sup>19</sup> Marsha L. Weisiger, *Dreaming of Sheep in Navajo Country* (Seattle: University of Washington Press, 2009), 34.

<sup>20</sup> Richard White, *Roots of Dependency: Subsistence, Environment, and Social Change Among the Choctaws, Pawnees, and Navajos* (Lincoln: University of Nebraska Press, 1983), 231.

<sup>21</sup> Kathleen P. Chamberlain, *Under Sacred Ground: A History of Navajo Oil 1922-1982* (Albuquerque: University of New Mexico Press, 2000).

<sup>22</sup> Weisiger, M. *Dreaming of Sheep in Navajo Country*, 175.

As it turned out, livestock reduction had hardly any effect on slowing soil erosion on the reservation. In recent studies, other factors have come to light on what contributes to soil erosion, desertification and deteriorating rangeland, such as climatic change, periodic drought, invasion of exotic vegetation, and a drop in water table.<sup>23</sup>

## Regulation, Permitting, Fencing, and Irrigation

In 1934, the Taylor Grazing Act was passed, requiring federal permits to manage grazing on public lands and established a permitting system through grazing districts. In 1936 this same structure was implemented on the Navajo Nation. Diné livestock owners were now assigned to a grazing district and had to comply with these new regulations. Grazing permits required that each Diné livestock owner register the amount of livestock they owned, and restricted grazing to the boundaries of their district. Additionally, permits set a cap of the number of livestock that could be owned and allowed to graze on that range. This number was also set by the same “carrying capacity” figures used in the reduction.

While the reasoning for grazing permits was to stem soil erosion on the reservation along with the livestock reeducation, the fact remains that desertification on reservation land continued. Recent science and alternative rangeland management methods show that confining herds to an area could be one of several key factors that actually contributes to desertification. Restricting herds to a set boundary restricts their movement and does not allow for greater rotation on the range, thereby causing exhaustion of limited rangeland. Additionally, grazing boundaries created animosity between Diné families and communities due to limited grazing range and change to existing grazing patterns established by Diné people for generations; an issue that remains a problem to this day.

In the years during and following the livestock reduction, around 65 small irrigation projects were built on the Navajo Nation at several locations.<sup>24</sup> This represented a shift in the type of agriculture practiced on the Navajo land. Irrigated farming methods, as well as the use of machinery, like tractors were encouraged and became increasingly common. Cash crops were heavily promoted. Over time subsistence farming and traditional heirloom seeds diminished. With an emphasis on cash crops and the implementation of irrigated farming methods also came a new set of values - the goal of these methods of farming was to make a profit. Diné farmers attributed the decline of community and cooperation to these changes in agriculture, particularly with the onset of machinery, which downplayed the importance of people and relationships.

## Food Assistance and Boarding Schools

In the decades following the livestock reduction, exposure to non-Navajo foods increased. Following the stock reduction, many Diné lost their means of providing for themselves; the livestock reduction had effectively crippled the Diné economy. This reduction also prompted the Navajo Nation to transition to a wage-based economy and many families lost their subsistence

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<sup>22</sup> Ibid, 10.

<sup>24</sup> Sam and Janet Bingham, *Navajo Farming* (Logan: Utah State University, 1979).

lifestyles and became increasingly dependent on federal food programs.<sup>25</sup> There are conflicting sources and dates as to when a formal Federal food distribution program, commonly known as “commodity food,” began on the Navajo Nation, but most sources point to the late 1950’s. Foods provided under this program included flour, corn meal, rice, and dry milk, sugar, syrup, lard, peanut butter, dried beans, rolled wheat, and in some areas butter and cheese, canned products—fruits, juices, meat or chicken, and vegetables, as well as macaroni, cereals, and dehydrated products. This period also saw the emergence of several other Federal supplemental food assistance programs. In the 1960s, the federal government created the Women, Infants and Children program (WIC) and re-enacted the Food Stamp program, which reached the Navajo reservation in 1977.

Thus, this period marked another shift in the diet of Diné people, moving away from their traditional diet, consuming fewer “home-produced” foods, such as corn, beans, melons, and squash, and relying more on processed foods from trading posts. The growing reliance on commodity foods of low nutritional value contributed to a shift in nutritional status from adequate to poor. And by the 1960s, nutritional deficiencies were documented among the Diné.

Boarding schools also played an important role in transforming diets. According to a 1968 nutritional study conducted in Greasewood, Arizona, “Approximately half of the children received all of their meals at the boarding schools,” while the other half received at least one meal a day at the schools.<sup>26</sup> The food provided to Native American children in boarding schools and through federal programs disregarded and discouraged traditional foods to institute a more Westernized diet, regardless of the actual implications. One of the most compelling illustrations of this is the insistence that Native American children drink milk in school, despite that 75 percent of Native Americans are lactose intolerant.<sup>27</sup>

World War II and relocation programs increased the Navajo population in urban areas and increased exposure to American dietary norms. When school children and adults returned to their Navajo homes, they brought these new dietary preferences back with them, often elevating the value of the new foods over Diné foods. Diné foods were characterized as “dirty” and “backwards”.<sup>28</sup> Traditional crops, animals, and plants were still utilized in this era, but the trend towards their decline is clear.

#### Food Distribution and Health of the People

“In 1989, a study by the Government Accountability Office reported that the prevalence of obesity, diabetes, heart disease, and hypertension was ‘likely to continue’ unless federal food packages distributed to Native Americans are improved. Commodity foods often form the basis of many people’s diets...With their unusual ingredients and additives, processed commodity foods introduced a whole new diet to Native communities, a diet that their bodies were not necessarily meant to manage. It is ‘widely recognized that the replacement of indigenous foods with a diet composed primarily of modern refined foods is the centerpiece of the (diabetes) problem.’”

– Winona LaDuke & Sarah Alexander,  
Food Is Medicine: Recovering  
Traditional Foods to Heal the People

Box 4.4

<sup>25</sup> Kopp, “Crosscultural Contacts,” 10.

<sup>26</sup> Ibid, 12.

<sup>27</sup> Jean Keller, “When Native Foods Were Left Behind,” *News From Native California*, 15, no. 3, Spring 2002.

<sup>28</sup> Kopp, “Crosscultural Contacts,” 9-10.

## Grocery Stores and Nutritional Studies

In 1968 the first grocery store opened on the Navajo Nation in Window Rock, Arizona.<sup>29</sup> Through the late 1970's and 1980's, the Arizona grocery chain Bashas' opened grocery stores in several more locations on the Navajo Nation. The impact of these grocery stores and the decline of Diné foods were documented in nutritional research. By the 1980's, soda and sweetened drinks, store bought bread, and milk were commonplace in the Navajo Diet, while fry-bread and tortillas, potatoes, mutton, and coffee continued as staples.<sup>30</sup> Although many Navajo families still farmed (corn, squash, and melon reported as the most cultivated crops), gardens were generally small and "no longer appeared to be a major source of food for many families."<sup>31</sup> According to another study, "many of the traditional foods were rarely if ever consumed."<sup>32</sup>

Analysis of the Navajo Health and Nutrition Survey conducted in early 1990's revealed similar findings; however, few participants in this study mentioned blue corn mush, and squash and melons were absent from the discussed foods. Fruits and vegetables were reportedly consumed less than once per day.<sup>33</sup> The most recent surveys on Navajo Diet demonstrate the continued dominance of fried potatoes, fry-bread and tortillas, sugary drinks, and processed meats in the Navajo Diet, however mutton is consumed significantly less than processed meats and no longer serves as a major contributor to daily caloric intake.<sup>34</sup>

*The general trend through-out this narrative is the decline of indigenous Diné foods and the increase of non-native and highly processed, high calorie foods in the Dine Diet. This decline has been so substantial that in the contemporary Navajo Diet, the only "traditional" foods consumed on a daily basis are tortillas and/or fry-bread, which only became part of the Diné Diet with the forced removal to Fort Sumner. Even sheep, the symbol of Navajo culture for the past century are facing considerable decline in the Navajo Diet in the 21<sup>st</sup> century. In addition to dietary changes, the shift in Diné life and society also include the breakdown of self-sufficiency, Diné knowledge, family and community, and detachment from land. These changes did not occur by chance, but were fostered by a series of American interventions and policies (the process of colonization); namely forced removal, the livestock reduction, boarding schools, relocation, and food distribution programs, along with the change from subsistence lifestyles to wage based society and integration into American capitalism.*

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<sup>29</sup> Ibid,13

<sup>30</sup> Wendy S. Wolfe and Diva Sanjur, "Contemporary Diet and Body Weight Of Navajo Women Receiving Food Assistance: An Ethnographic and Nutritional Investigation," *Journal of the American Dietetic Association*, 88, no. 7 (July 1988): 824.

<sup>31</sup> Ibid.

<sup>32</sup> Wendy S. Wolfe, Charles W. Weber and Kaherine Dahozy Arviso, "Use and Nutrient Composition of Traditional Navajo Foods," *Ecology of Food and Nutrition*, 17, no. 4 (1985): 343.

<sup>33</sup> Carol Ballew, et al. "Intake of Nutrients and Food Sources of Nutrients Among the Navajo: Findings from the Navajo Health and Nutrition Study," *Journal of Nutrition*, 127, no. 10 (1997), 2085S-2093s.

<sup>34</sup> Sangita Sharma, et. all "Dietary Intake and Development of a Quantitative FFQ for a Nutritional Intervention to Reduce the Risk of Chronic Disease in the Navajo Nation," *Public Health Nutrition*, 13, no. 3 (2009).

The legacy of colonization and American policies has led to the decline of traditional Diné foods, traditional food knowledge, and a self-sufficient food system, but also has left the Navajo Nation and the Diné people with a nutritionally insufficient diet and very low-access to healthy foods within their communities. This has resulted in epidemic levels of nutritionally-related illness as well as a poorly functioning food economy that does little to uplift the Navajo Nation. This section serves to contextualize the food access issues identified by the Community Food Assessment within broader health, food access, food security and economic issues on the Navajo Nation.

### Health and Nutritionally-Related Illness on the Navajo Nation

Currently the Navajo Nation faces a health crisis due to extremely high rates of nutritionally-related illness, including obesity, diabetes, heart-disease, hyper-tension, and cancers. Regarding diabetes, in particular, the Navajo Health and Nutrition Survey conducted in 1990, found that 22.9% of the Navajo population had diabetes.<sup>35</sup> Since then, diabetes rates have continued to increase, particularly among the younger population. Indian Health Service now estimates that 1 in 3 Navajos are either diagnosed with type-2 diabetes or are pre-diabetic. This equates to nearly 100,000 Navajos or approximately 33% of the Navajo population. As the incidence of diabetes is more heavily concentrated within the boundaries of Navajo Nation, the rate of diabetes may be closer to 50% for the population on the Navajo Nation; IHS health care workers have anecdotally stated that they are diagnosing diabetes for 1 in 2 patients in some regions. Diné people also face rates of diabetes much higher than the general American population, as the diabetes rate for the United States is estimated at 8.3% as of 2011.<sup>36</sup> The rise of these nutritionally-related illnesses, however, is a historically recent phenomenon for the Diné people. In 1937, a survey of 6,000 hospitalizations in Ganado, AZ found only one case of diabetes.<sup>37</sup>

Understanding the underlying causes of nutritionally-related illness is complex, and researchers have identified a multitude of factors that increase a person's likelihood of facing health issues linked to diet. In previous decades, researchers looked predominately at biological factors when studying obesity and diabetes among Native populations, without contextualizing the history of colonization, food access, and socioeconomic conditions that directly correlate with the onset of nutritionally-related illness. As obesity and diabetes rates have risen in recent years for the general American population, studies focusing solely on biological factors have declined, and more researchers have started to analyze how environmental, economic, and social factors are the strongest indicators for nutritionally-related illness.

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<sup>35</sup> Julie C. Will, et al. "Diabetes mellitus among Navajo Indians: findings from the Navajo Health and Nutrition Survey," *Journal of Nutrition* 127, no. 10 (1997): 2108S.

<sup>36</sup> Centers for Disease Control and Prevention, *National Diabetes Fact Sheet*, 2011.

<sup>37</sup> Will, "Diabetes mellitus among Navajo Indians," 2106S

## The Navajo Nation Food Desert

A “Food Desert” is an area, either urban or rural, without access to affordable fresh and healthy foods. While food deserts are devoid of accessible healthy food, unhealthy, heavily processed foods are often readily available.<sup>38</sup> Food deserts are most often found in low-income communities of color in the United States, including Native American reservations, and are linked with high rates of nutritionally-related illness. For rural communities, the USDA has defined rural food desert as regions with low-income populations, the closest supermarket is further than twenty miles away and people have limited vehicle access.

*Data from the United States Department of Agriculture identifies nearly all of the Navajo Nation’s 27,000 square miles as a food desert.*

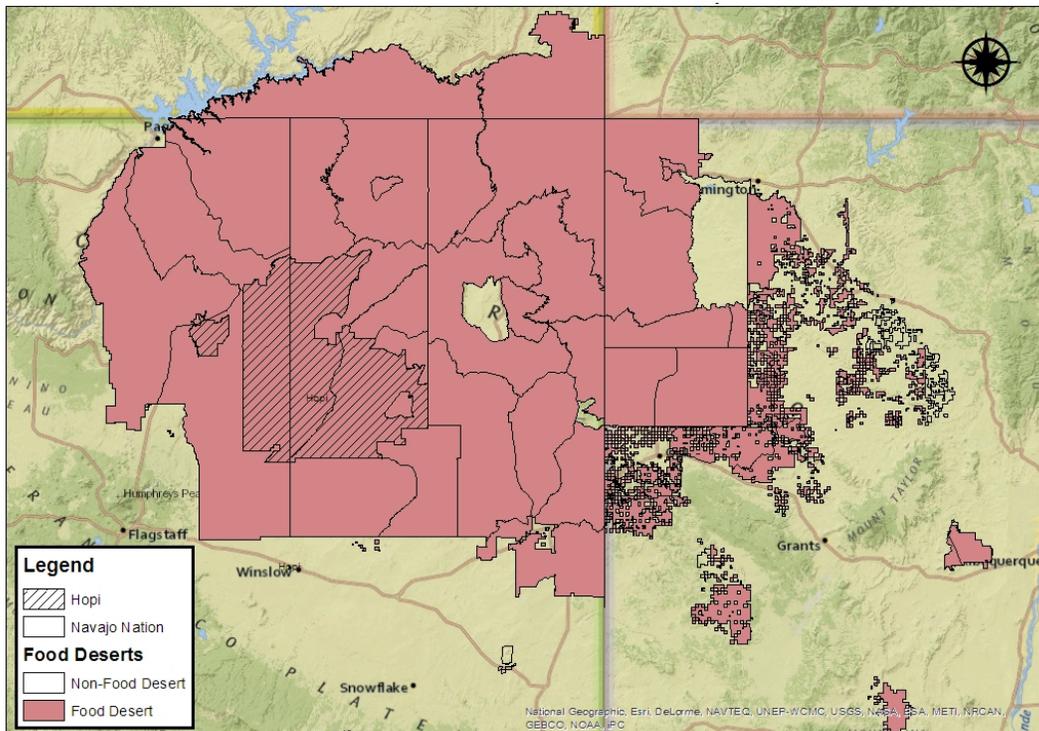


Figure 5.1 USDA Determined Food Deserts on the Navajo Nation. Data Source: ESRI Tiger Line, USDA Food Access Research Atlas. Author: Mariah Tso

## Profile of Retail Food Availability on the Navajo Nation

<sup>38</sup> Researchers have suggested that the term “Food Swamp” may be a more accurate, as many communities have an abundance of processed, high caloric, energy dense foods.

On the Navajo Nation, there are very few full service grocery stores – ten (10) for the entire Navajo Nation. Most grocery stores are located in the higher population centers on the Navajo Nation in the communities of Window Rock, Chinle, Shiprock, Kayenta, Crownpoint, Tuba City, with several other grocery stores in the more remote communities of Navajo, Pinon, and Dilkon. The largest grocery retailer is the Arizona-based grocery chain, Bashas', which operates 7 stores on the Navajo Nation and brands them as "Bashas' Diné Markets". The other grocery retailers on the Navajo Nation are City Market (Shiprock), Lowe's (Window Rock), and Navajo Pine Market (Navajo). Only one full service grocery store was located within DPI's Community Food Assessment research region- Bashas' in Chinle.

While fresh fruits and vegetables and other healthy food items are available at these grocery stores, data collected from DPI's Community Food Assessment and an evaluation conducted by the Diné Community Advocacy Alliance (DCAA) suggests that the fresh and healthy food offerings are available in limited quantities, inadequate, and far outweighed by unhealthy, highly processed food, and high calorie options. A DCAA survey of Bashas' in Kayenta demonstrated that approximately eighty percent (80%) of the store's offerings qualified as "junk food" and "sweetened beverages" by DCAA definitions.

In the more highly concentrated population centers of Window Rock, Chinle, Shiprock, Kayenta, and Tuba City, "fast-food" retailers such as McDonald's, Burger King, etc., can be found. Studies on food access and nutrition have found that regions with a high availability of fast-food often result in poor diet, due to the low nutritional content of the food and the low prices offered at these locations.<sup>39</sup>

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*"They need a lot more fresh stuff, fresh fruits, and more a varieties. ...instead of [it] being hidden in back of the store. It needs to be up front to help the community. You go to any gas station and first thing you see is rows and racks of candy, chips, sodas... that's the first thing you see right when you go in. Towards the back, that's where you see little tiny small section of fruit items."*

*-Community Food Assessment Interview*

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For the more rural communities on the Navajo Nation that do not have grocery stores, food retail locations are limited to gas stations and convenience stores or non-existent. Food purchase options at gas stations and convenience stores are predominantly high calorie, heavily processed food items. This includes "junk food", such as soda and other sweetened beverages, chips, and candy. These locations also have an absence of fresh and healthy food choices.

*From assessing the food retail locations on the Navajo Nation, it is clear that access to fresh and healthy food options on the Navajo Nation is very limited and often times, completely unavailable, particularly in very rural communities. Highly processed and high calorie foods are readily and abundantly available at food retail locations, which are directly linked with poor health.*

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<sup>39</sup> Michele Ver Ploeg, et al., "Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences." USDA Report to Congress (2009): 52.

## Income, Food Insecurity, and Food Access

Income level and socioeconomic status are directly tied to food security. Many studies have demonstrated the linkages between income and socioeconomic status and food insecurity and poor health.<sup>40</sup> When a person or family has adequate financial resources, they are food secure; there is little to no concern of whether they will have the money to buy the right food or enough food to eat. Conversely, when a person or household has limited income, they face food insecurity- uncertainty about having enough or the right kind of food to eat. In the worst scenarios, people that have limited or no income become food insufficient. They do not have adequate access to food, and face hunger and malnutrition from not getting enough to eat. Figures 1.2 and 1.3 illustrate the 2010 Census Data on income and poverty on the Navajo Nation.

*As this Census Data illustrates, the Navajo Nation is characterized by exceptionally high rates of unemployment and poverty, a large percentage of the Navajo Nation's population is food insecure and is at risk for hunger and malnutrition.*

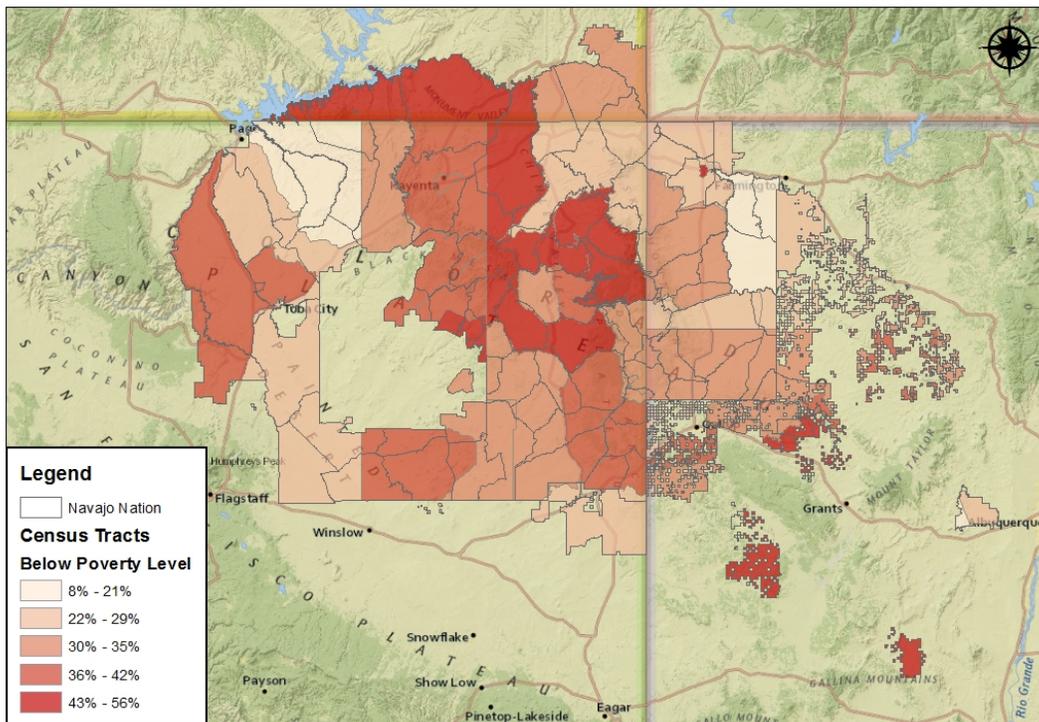


Figure 5.2 American Indian Households Whose Income in the Past 12 Months is Below the Poverty Level. Data Source: 2010 Census, ESRI Tigerline. Author: Mariah Tso

<sup>40</sup> Lauren M. Dinour, Dara Bergen, Ming-Chin Yeh. "The Food Insecurity-Obesity Paradox," *Journal of the American Dietetic Association* 107, no. 11 (2007): 1957

## Access to a Vehicle

In direct relation to the low socio-economic status of many households on the Navajo Nation, reliable access to a vehicle is an issue for many Diné people. For people living significant distances from grocery stores or with physical disabilities that limit mobility, the lack of reliable access to a vehicle equates with uncertainty of access to food, or food insecurity.

*As most of the Navajo Nation's land base is more than 20 miles away from a grocery store (USDA marker of an extreme rural food desert), lack of vehicle access has particularly significant implications for the Navajo Nation food desert.*

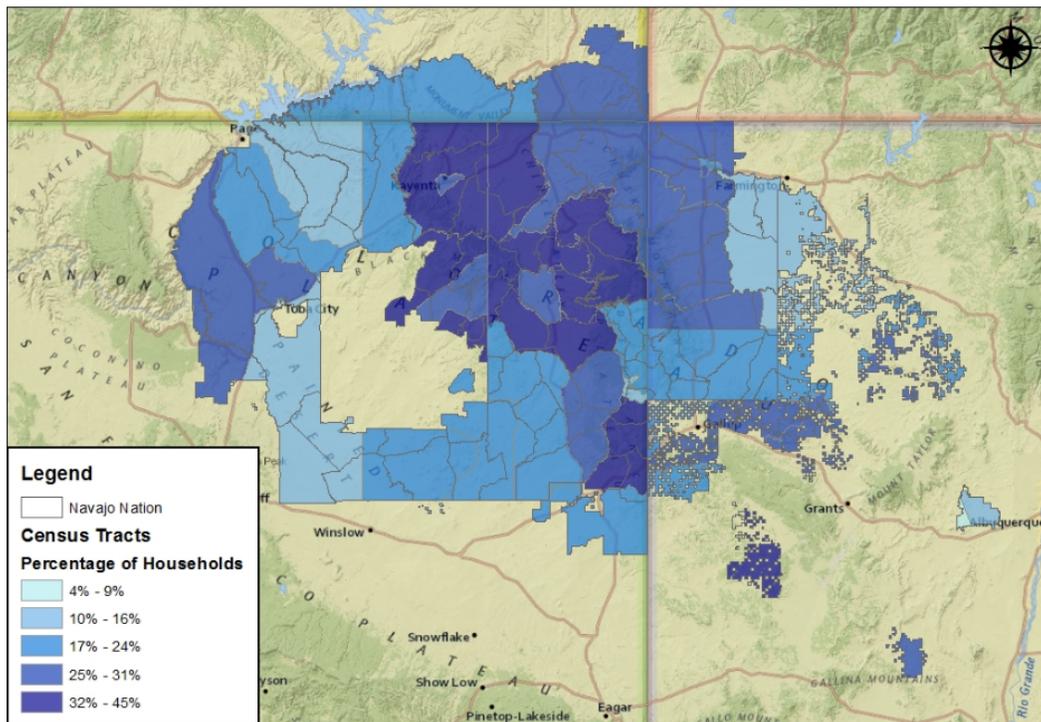


Figure 5.3 American Indian Households with Annual Income and Benefits Less than \$10,000. Data Source: 2010 US Census, ESRI Tigerline. Author: Mariah Tso.

## Socioeconomic Status and Food Quality

In addition to the question of whether or not a person or household is able to afford enough food to eat, is the question of what is the quality of the food people are able to afford. In the United States, fresh and healthy food options are generally much more expensive than highly processed, high calorie foods, largely due to US subsidies to farmers and agribusiness than result in surpluses of commodity crops which are processed into “junk foods” and fast foods. As a result, there is also a direct link between the quality of food that people are consuming and their income level and socioeconomic status.

Researchers explain the impacts of socioeconomic status, food insecurity, food choice, and health:

“The low cost of energy denser foods may promote overconsumption of energy, leading to weight gain [and the onset of nutritionally-related illnesses]. To maintain adequate energy intake, people who must limit food costs will select lower quality diets, consisting of high energy, inexpensive foods. The frequency of fruit and vegetable consumption, on the other hand, declines significantly as food insecurity status worsens. Food insecurity may also lead to various psychological and behavioral changes, such as a preoccupation with food, stress, depression, and physical limitations in adults, all of which can lead to an increased risk for obesity [and other nutritionally-related illnesses].”<sup>41</sup>

*In short, Diné people with limited or no income are limited in their food choices, and since healthy, fresh foods are of greater cost, people with limited financial resources often have no other option than to purchase low-cost, heavily processed, high calorie foods which lead to the onset of nutritionally-related illnesses. A significant portion of the population on the Navajo Nation, and in several Diné communities’ nutritionally-related illness effect the majority of people.*

## Race and Ethnicity

As previously mentioned, food deserts in the United States are most often found in low-income communities of color, demonstrating the legacy of historically racist and economically marginalizing policies in the United States.<sup>42</sup> Therefore, ethnicity and race are also strong indicators of the likelihood of nutritionally-related illness; Native American communities, like other communities of color, face disproportionately higher rates of nutritionally-related illness than the general population in the United States.

These trends extend globally; Indigenous populations who have been subjected to processes of colonization similar to the experience of Native Americans, and other marginalized ethnic groups, are also disproportionately affected by diet-related illness. Researchers are now referring to nutritionally-related illnesses as “Western Illnesses,” for these illnesses are only found in indigenous populations that have become incorporated and acculturated into Western societies through processes of colonization. Prior to colonization, these illnesses were virtually nonexistent among indigenous people.<sup>43</sup> What’s more, nutritionally-related illnesses are increasing on a global level at unprecedented levels, particularly among economically disadvantaged peoples. This is due in large part to “large-scale societal and nutritional changes having to do with economic growth, modernization, and globalization of food markets.”<sup>44</sup>

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<sup>41</sup> Ibid.

<sup>42</sup> Such policies experience by Navajo people are detailed in chapter 3 of this report.

<sup>43</sup> Michael P. Milburn, “Indigenous Nutrition: Using Traditional Food Knowledge to Solve Contemporary Health Problems” *American Indian Quarterly* 28, no. 3 &4 (2004): 413.

<sup>44</sup> Lindsay McLauren, “Socioeconomic Status and Obesity,” *Epidemiologic Reviews* 29, no. 1 (2007).

## Discussion on Choice

Perspectives and public discussion on health often center on notions of personal choice and control. A commonly held view is that if a person is overweight or is afflicted with other diet-related health issues, they did not exercise the restraint or personal judgment that would have kept them from succumbing to these ailments. An overview of the impacts of food access, income, and vehicle access on nutritionally-related illnesses however, illustrates that there are larger socioeconomic and systematic factors that influence health. The limitations presented by these factors have an overwhelming impact on personal choice. While personal choice is still a factor in diet, the lack of access of healthy foods in a food desert, particularly for those with low or no income and without vehicle access, results in extremely limited choice for food purchases.

Personal choice and responsibility does need to play a significant role in addressing the Navajo Nation's diet-related health crisis, as Diné people will need to be pro-active to find ways to change their diet and that of their families and communities where systematic and socioeconomic factors are extremely limiting. Rather than wait for socioeconomic factors to change or for food retailers to offer healthier options, Diné people can begin the process to create access to healthier food options on the Navajo Nation and, more broadly, to regain control over our food by rebuilding a self-sufficient food system rooted in traditional food and agriculture.

*For the majority of Navajo Nation residents, limited income and the unavailability of healthy food makes it very difficult to make healthy food choices. Therefore to address the health crisis of nutritionally-related illness on the Navajo Nation, healthy food choices must be made available on the Navajo Nation. This can best be accomplished by empowering Diné people to engage in the revitalization of traditional food and agriculture, thereby pro-actively creating a healthy food system for the Navajo Nation.*

## Navajo Nation Food Economy

Throughout the majority of the Navajo Nation, people must travel to the border towns to access healthy options. Of the income that is generated on the Navajo Nation, the Navajo Nation Division Economic Development (NNDED) estimates that between sixty-four to seventy percent (64-70%) of Navajo money is spent in off-reservation communities.<sup>45</sup> This includes money spent on food purchases, which make up a significant portion of money spent in border towns. Most communities on the Navajo Nation do not offer formal food retail venues outside of gas stations. Data from the Community Assessment reveals that although there are several communities on the Navajo Nation that contain grocery stores, many Navajo people chose to spend their money in border towns off of the Navajo Nation due to lower prices, higher quality, and greater options despite long driving distances.

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<sup>45</sup> "2009-2010 Comprehensive Economic Development Strategy, The Navajo Nation," Navajo Nation Division of Economic Development (2009).

## Formal Food Retail Employment

Of the jobs that are available in the food industry on the Navajo Nation, many are found in fast food franchises, such as McDonalds and Burger King. These jobs are characterized as minimum wage, part-time jobs with no benefits. The jobs make it very difficult to earn living wages to support oneself or a family. Workers often have to rely on Federal Food Assistance, such as SNAP/EBT, to fill the gap of the insufficient income in feeding themselves and their families. Furthermore, due to limited employment options on the Navajo Nation, workers often travel very long distances for these jobs. These trends in fast food jobs extend nationally, and recently fast food workers have engaged in mass demonstrations and strikes to improve work conditions through out the United States.

*The current food industry jobs on the Navajo Nation do very little to provide economic stability and address food insecurity. Therefore, there is great need for the development of a self-sufficient food economy for the Navajo Nation that adequately provides for its peoples' livelihoods.*

## Unemployment and the Informal Food Economy

The Navajo Nation is characterized by exceptionally high rates of unemployment and poverty. NNDED estimates unemployment at fifty percent (50%). The reason for this high unemployment rate is the lack of formal employment opportunities on the Navajo Nation. In order to keep the unemployment rate from growing, over 3,500 jobs must be created each year on the Navajo Nation, however, the number of actual jobs created on the Navajo Nation falls far below this and the unemployment rate continues to increase year after year. From 2001 to 2007 alone, the unemployment rate on the Nation increased over eight percent, from forty-two percent (42%) to over fifty percent (50%). These numbers however do not include people who have not looked for work in the previous four months. If these people are counted, the actual unemployment rate rises to an estimated seventy percent (70%).<sup>46</sup>

Understanding the Navajo Nation economy in terms of formal employment numbers, however, is an oversimplification of the economic realities. As also noted by the NNDED, there is a substantial informal economy that operates on the Navajo Nation; Navajo people are finding ways to overcome the barriers of unemployment in order to support themselves. According to NNDED estimates, Navajos generate an estimated \$40.5 million in the “informal” economy from their unregistered microenterprises and home-based business. While official unemployment rates paint a desolate picture, the on-the-ground realities demonstrate the business sense, innovation and creativity that individuals and families call upon to support themselves in dire economic circumstances.

A substantial portion of this informal economy revolves around food in particular and includes Food Stands, Food Trucks, and mobile vendors of burritos and other prepared foods. While specific numbers do not currently exist to measure their presence, these informal food economies exist in nearly every community on the Navajo Nation. This demonstrates that many Diné people

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<sup>46</sup> Ibid, 22.

are already actively creating a Navajo Nation food economy outside limitations of a formal economy.

Currently, the food sold in this informal food economy is largely unhealthy and is a reflection of the food items available for purchase on the Navajo Nation. However, if Diné people reconnected with healthy traditional foods, food production and collection, the significant impact of the current informal food economy suggests that Diné people would engage in the generation of a healthy food economy for the Navajo Nation.

*Rather than continue to look to outside sources off of the Navajo Nation, Diné Policy Institute recommends that the best way to address the current lack of access to fresh, healthy and affordable foods, and the associated health issues, is to restore the local food infrastructure. The restoration of a local Diné food system will also address economic issues by providing increased economic opportunities and stability for growers, ranchers, hunters, wild food collectors, and food vendors..*

## VI. IMPLICATIONS AND RECOMMENDATIONS

Diné Policy Institute has identified the following areas of consideration and recommendations for the Navajo Nation to move towards principles of Diné Food Sovereignty and to rebuild a self-sufficient food system for the Navajo Nation. These considerations and recommendations are the outcomes of the Navajo Nation Food System research project informed by a Community Food Assessment, Advisory Circle of Diné knowledge holders, meetings with regional Chapter Officials, Farm Boards and Committees, feed back received at public educational conferences, case-studies, as well as historical academic research and literature reviews.

### Implications of the Diné Food Sovereignty Initiative Research

The Community Food Assessment and Navajo Nation Food System research project revealed an extreme lack of access to healthy foods on the Navajo Nation. USDA data confirmed and identified the Navajo Nation as a food desert. The physical lack of access to healthy food is further exacerbated by high rates of poverty, unemployment, and low vehicle access for the population of the Navajo Nation. The majority of the food that is available on the Navajo Nation is characterized as unhealthy, highly processed, and high caloric food. This lack of access to healthy foods combined with the convenience of unhealthy foods directly contributes to the epidemic of nutritionally-related illness that the Navajo Nation is currently facing. *If this health crisis is to be effectively addressed, access to healthy foods on the Navajo Nation must be made available.*

The Community Food Assessment also illustrates that many people respond to the lack of access to food on the Navajo Nation by going to border towns to purchase groceries, if they have the ability to do so. Study participants cited high prices and poor quality of food on the Navajo Nation as additional motivating factors in their decision to travel off the Navajo Nation to purchase food. *Therefore, the food desert status of the Navajo Nation also contributes to leakage of Navajo Nation dollars to border towns, and undermines the development of a more self-sufficient economy for the Navajo Nation.*

While there is current lack of access to healthy foods and extremely high rates of nutritionally-related illness on the Navajo Nation, research from the Diné Food Sovereignty Initiative also revealed that this was not always the case. A historical analysis of Diné Diet and food system, in conjunction with interviews from the Community Food Assessment, Grower Focus Groups, and the Advisory Circle, revealed that the indigenous and self-sufficient Diné food system began to break down after American encroachment. Gradually, as the production and consumption of indigenous foods declined on the Navajo Nation, consumption of unhealthy and highly processed foods increased and Diné people became dependent on food assistance programming. *This transition in Diné Diet and food system was fostered by practices and policies of the American colonization of Diné people and lands. The decline of traditional food and a self-sufficient food system also coincided with the decline of Diné lifeways, relationship with the land, families, language, and culture as the Navajo Nation transitioned to a wage-based economy.*

In developing strategies to increase access to healthy foods and address economic issues with the current food system- traditional foods and food knowledge need to be at the forefront. DPI's research strongly suggests that a return to indigenous foods will not only significantly improve

the health of Diné people, but will also create pathways to a more self-sufficient food system and economy for the Navajo Nation. From DPI's research, it is clear that there is a very strong interest in revitalizing traditional foods and traditional food knowledge among Diné food consumers, farmers, elders, and knowledge holders.

*Therefore, the recommendations that Diné Policy Institute has developed are focused on revitalizing traditional foods and traditional food knowledge through the reestablishment of a self-sufficient food system for the Diné people.*

### **Important Considerations in the Development of Food System Recommendations**

- Restoration of *Hózhó* - these recommendations acknowledge the relationship between food and food systems with our holistic wellbeing, *Hózhó*. Any work with food and food systems should help to restore *Hózhó* for Diné people and to heal the negative impacts of colonization and historical trauma. This can be accomplished by not only improving the nutritional content of food on the Navajo Nation, but also incorporating the positive impacts of food system restoration with mental, spiritual, and community well-being.
- Sovereignty – these recommendations assert Diné Sovereignty, of not only the Navajo Nation government but of the people, Diné lifeways, and knowledge so that the Navajo Nation can move to rebuild a self-sufficient food system where federal and state jurisdiction are detrimental to this process, and to reestablish a food system that meets the needs of the Diné people in ways appropriate to them.
- *K'é* – As Diné teachings have informed us, *K'é* (relationships and interconnectedness) is fundamental to our existence and to our food system. Incorporating *K'é* into these recommendations ensures that our work to rebuild a self-sufficient food system is healthy for not only us, but the plants, animals, water, and soil that comprise our food system. Furthermore, actively utilizing concepts of *K'é* helps to rebuild Diné families and communities, along with the intergenerational transfer and maintenance of traditional Diné knowledge, which DPI's research demonstrates have broken down along with our food system.
- Rebuilding capacity of Navajo growers, livestock owners, and food gatherers – as agriculture, livestock, and food collection has drastically declined for Diné people to the point where the Navajo Nation no longer produces enough food to feed the population, food system work should have a primary focus on activities to not only improve the capacity of current Diné food producers, but also actively encourage more Diné people to participate in food production.
- Economic capacity (profit) cannot be the central focus of food system work. The current economic model, which focuses primarily on profit, has resulted in a food system that produces unhealthy food and negatively impacts plants, insects, animals, water, and soil not only for the Navajo Nation but also on a national and global scale. While economic considerations will play a role in food system activities, the primary focus instead should be how Diné people can feed their community in a healthy self-sufficient manner.

- Consideration of environmental sustainability and ecological conservation – the Navajo Nation has a very arid and dry climate, and effects of climate change have led to further drought and soil erosion in recent decades; food production must conserve water and be beneficial to building healthy soil. Conventional, large scale agricultural production and irrigation methods use unsustainability amounts of water and further deplete soil; incorporating indigenous Diné and permaculture methods into food system production will both conserve water and build soil quality, to ensure the ability to produce food in the future.
- Working within the context of your environment, indigenous foods – As Diné people, we were provided with everything we need for a healthy life and food system within the boundaries of our four sacred mountains. Utilizing our indigenous foods allows us to not only restore a truly self-sufficient food system in our homeland, but will help us mitigate the effects of climate change in the coming years, and continue to inform our identity as Diné people.
- Utilization of Community based knowledge – Knowledge that may not otherwise be considered, such as family knowledge, elder knowledge, and traditional knowledge that is often overlooked in formal programming and policy solutions, but is integral to restoration of a self-sufficient Diné food system.

## Food Sovereignty

The ability to feed your own people and communities is a basic tenant of sovereign governance. Therefore Political Sovereignty and Self-Determination for the Diné people and Navajo Nation is not possible without Diné Food Sovereignty. Prior to American efforts of colonization, Diné people operated in a food system that was not only integral to our culture, but one in which Diné people actively produced and collected the food needed to feed their communities. This meant that Diné people did not depend on outside governments and systems for food. Not only did the people ensure that quality and nutritious food was provided, but they did so without operating under the authority or governance of these outside entities.

There is self-sufficiency in food production. If the Navajo Nation were to stop largely depending on outside entities for food, this would not only result in better health for the Navajo people, but would dramatically reduce the need for dependence on state and federal programs, such as EBT, Food Distribution, and even Indian Health Services.

When the people that are producing, collecting, and consuming food are directly involved in the decision making processes regarding the food system, the food system will be more appropriate and beneficial to them. Developing our own policies, and not simply replicating others, based on our own unique circumstances, environment, history, and culture truly asserts sovereignty for the Navajo Nation.

## Diné Food Sovereignty

Asserting Diné Food Sovereignty is fundamental to rebuilding a healthy and self-sufficient Food System for the Diné people. Diné Food Sovereignty is the right of Diné people to define their own policies and strategies for sustainable production, distribution, and consumption of food, with respect to Diné culture, philosophy, and values, and is considered to be a precondition for food security on the Navajo Nation. Diné Food Sovereignty ensures the ability to establish our own culturally appropriate and sustainable systems of managing natural resources including lands, territories, waters, seeds, livestock and biodiversity. Diné Food Sovereignty empowers Diné people by putting the Diné people, cooks, farmers, ranchers, hunters and wild food collectors at the center of decision-making on policies, strategies, and natural resource management.

Our indigenous foods are a gift from the *Diyin Dine'é* and these these foods provided the sustenance and well-being of Diné people within *Diné Bikéyah*. In this respect, the right to food is sacred, and cannot be constrained by colonial laws, policies, institutions, and economic systems; Diné Food Sovereignty works to restore *Hózhó* and promote Diné self-sufficiency and is fundamentally achieved by upholding our sacred responsibility to nurture healthy interdependent relationships with the land, plants, and animals, that provide us with our food.

## VII. STRATEGIES AND RECOMMENDATIONS

*These recommendations are intended to inform decision-making on multiple levels, including Navajo Nation wide legislation to be implemented by the Navajo Nation Council, program recommendations for the Navajo Nation Divisions and Departments, Chapter House resolutions and programming, as well as those decisions made at the individual and family levels.*

### Public Education and Outreach

Of course, any strategy to increase the access and availability of healthy traditional foods on the Navajo Nation will not go very far unless more Diné people begin to engage with food system awareness and food production, either through gardening and farming, raising livestock, hunting, or wild food collection. The erosion of Diné food knowledge and lack of traditional knowledge being transferred between generations were cited as a major barrier to food production and the decline of agriculture on the Navajo Nation in the Community Food Assessment. To address this, research participants, including Consumers, Growers, and Chapter Officials, identified Public Education and Outreach as one of the most important strategies to begin to revitalize a Diné Food System. Knowledge is power and education centered on food knowledge and production can directly empower Diné people to regain control over the food in their communities by playing an active role in rebuilding a self-sufficient food system for the Navajo Nation.

Public Education and Outreach can be implemented at multiple levels, such as:

- Existing Navajo Nation Divisions and Departments' Programming
- Indian Health Services Education Programming
- Chapter-Based Initiatives
- Navajo Non-profit Work
- Education within the Family and Community

Traditional Diné food knowledge should be at the forefront of public health, food system and food production education. The Community Food Assessment demonstrated that an overwhelming majority of people are interested in revitalizing traditional foods, however, many people lack access to educational resources and information on traditional foods; specifically, ninety percent (90%) of the Consumer Survey respondents indicated that they wanted information about traditional foods in their communities. However, forty-six percent (46%) responded that they did not have any access to information and education on traditional foods.

In order to offer education on traditional Diné food knowledge, Diné food knowledge holders (people who are often viewed outside the mainstream definition of “expert,” and are therefore often overlooked in formal programming efforts) must be at the forefront of educational initiatives and curriculum design. This includes elders, farmers, ranchers, hunters, wild food collectors, and cooks. These Diné experts are essential to rebuilding a self-sufficient food system for the Navajo Nation, because they hold knowledge that cannot be learned from mainstream educational institutions and knowledge that enables Diné people to feed ourselves from the land

and resources within the boundaries of our four sacred mountains. What's more, every community on the Navajo Nation has local food experts whose knowledge should be respected and utilized – working with local Diné food experts will also help to rebuild *K'é*, family, and community connections.

Public Education and Outreach to revitalize a healthy and traditionally based self-sufficient food system for the Navajo Nation will take many forms. These are some examples of what educational efforts should include:

- Navajo Nation Food System and Food Desert Awareness
- Genetically Modified Organism (GMO)/Genetically Engineered (GE) and Pesticide Education
- Water Harvesting
- Planting
- Gardening
- Seed Collection and Storage
- Range Land Management
- Wild Food Collection
- Cooking
- Seasonal Food Storage, such as drying and canning
- Butchering
- Traditional Teachings and Stories on Food



Elder Ida Yazzie demonstrates how to make Chiiłchin at the 2012 Tsaile Farmers' Market

## **Working with Existing Entities to Increase Healthy, Traditionally Based Foods and Foods From Navajo Producers**

**Commitment of Navajo Nation Programs to purchasing healthy and traditionally based foods, divesting from purchasing unhealthy food** - This recommendation holds that Navajo Nation Government, including programs, departments, divisions, Chapters, and all other entities make a financial commitment to purchasing healthy foods and traditional-based foods, and where possible, to purchase these foods from Diné food producers. This policy would increase access to healthier and traditional food for people employed in the Navajo Nation government and those serviced by Navajo Nation Government programming on the Navajo Nation, as well as directly contribute to rebuilding a Diné food economy by channeling Navajo Nation dollars spent on food purchases to Diné producers. Along with this financial commitment, the Navajo Nation should also consider policies to restrict the purchase of unnecessary, heavily processed, high caloric foods with Navajo Nation government funds where healthier alternatives exist. At least one other Native American Nation has done this; the Lummi Nation in Washington State passed a policy to restrict tribal government dollars from being spent on soda.

To use Navajo Nation dollars to purchase foods from Diné producers, a process for purchasing from individual producers as well as Diné collective organizations including Community Supported Agricultural Associations (CSA's) and Cooperatives by the Navajo Nation will need to be established, and food safety standards will need to be addressed. This process should be inclusive enough to allow for a wide range of purchases, from vendors at flea markets to farmers' markets. Several options to address food safety concerns will be discussed in the following sections.

**Requirements for Navajo Nation Hotels and Casinos** - The Navajo Nation has spent millions of dollars in recent years to build casinos and hotels to generate revenue for the Navajo Nation. Outside of the direct revenue generation, casinos and hotels can contribute directly to the Navajo Nation economy by committing to provide healthy traditional food offerings and to purchase foods from Navajo food producers when possible.

**Contract Agreements with Stores on Navajo Nation, Guidelines for Grocery and Convenience Stores on the Navajo Nation** - For non-Navajo businesses selling food to operate on the Navajo Nation a contract agreement must be signed with the Navajo Nation. Through these contract agreements, the Navajo Nation can enact requirements for businesses to carry healthy traditional food offerings from Navajo producers, which will not only help to rebuild a Diné food economy, but also give Navajo Nation consumers access to these foods in existing food retail locations. Furthermore, the Navajo Nation should also work with existing businesses, such as Bashas' Diné markets, gas stations, and convenience stores to develop strategies and guidelines to increase healthy food offerings as well as to provide food related health education, as studies have shown that stocking shelves with healthier options and promoting healthier foods leads to an increase of healthy food consumption in food deserts.<sup>47</sup> Data from the Community Food Assessment demonstrates that healthy foods, specifically fresh foods, natural and organic

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<sup>47</sup> Ver Ploeg, et al., "Access to Affordable and Nutritious Food," 53.

foods and traditional foods are what people want but do not have access to in their community. Furthermore, the data demonstrates that local community growers are willing to fill the void of organically, naturally produced foods, as well as traditional foods.

**Farm to Institutions on the Navajo Nation** – Creating pathways for Farm to Institution on the Navajo Nation will have tremendous impact not only in supporting Diné food producers, but for the significant portion of the Navajo Nation population that utilizes Schools, Elder Facilities and Senior Centers, Hospitals, Jails, and other food-serving institutions on the Navajo Nation. These institutions are major access points for food on the Navajo Nation, particularly schools and elder care facilities and senior centers. During a Community Food Assessment interview, an educator discussed the importance of school food programs as for many food-insecure children, school breakfast and lunch may be the only opportunities they have to eat. The free lunches provided at Navajo Nation Senior Centers were also identified as major point of access in the Consumer Survey.

Farm to Institution, particularly Farm to School, strategies are being implemented throughout the United States, including by many Native American communities. Typically, schools, elder care facilities, hospitals, and jails purchase the food they serve from large food service providers such as Sysco, Aramark, etc. Farm to Institution strategies allow these institutions to purchase from local farms and local food producers either in addition to food from the large food service providers, or as a complete alternative. This both provides for both direct contribution to the local food economy and increased access to healthy and traditional foods.

Farm to School and Farm to Institution strategies can also provide opportunities for the children and adults served by these institutions to further engage with healthy and traditional food by growing food themselves in gardens adjacent to schools, elder facilities, hospitals, and jails. These gardens produce healthy food to be served in these institutions, but also provide additional benefits. There have been several studies that look at community gardening as a form of activity that can increase the holistic wellness of the mind, body, and spirit.<sup>48</sup>

*“Some farm to school programs also choose to incorporate an educational curriculum that corresponds with certain traditional foods and the season. This way, Native children can become more familiar with Indigenous traditional foods on their lunch trays, but students can also learn how to grow them, harvest them, and talk about them in relation to their own communities. The educational component of an Indigenous farm to school program is the water that really grows the seed of understanding. When children learn how to appreciate their food, they can eat better, be healthier, and pass on those age-old traditions.”*

- From “Indigenous Farm to School,” a report by Kaisa Jackson and the White Earth Land Recovery Project, 2012.

Box 7.1

<sup>48</sup> Mary Stein, “Community Garden for Health Promotion and Disease Prevention,” *International Journal for Human Caring* 12, no. 3 (2008): 47-52.

Just outside of the Navajo Nation, the STAR School, near Leupp, AZ, has piloted a Farm to School project to work with farmers from the Navajo and Hopi Nations. In the past year, the project was able to purchase foods from the North Luepp Family Farms on the Navajo Nation. A report was recently released by the project to detail how Navajo Nation growers and schools can institute farm to school programs. In this report, there are several important findings about the considerations and regulations that will have to be addressed if farm to school programs are to be developed by Navajo Nation schools and farmers:

- “The benefits of serving local foods in schools are many, but buying local foods typically costs more than buying produce from a food wholesaler. There can also be significant additional costs for the staff time, supplies, equipment and infrastructure needed to build and support your program.”
- “Independent charter schools, tribal schools and Bureau of Indian Education (BIE) schools are able to buy fresh produce directly. In fact, BIE schools are encouraged to do so by the BIE Health and Wellness Policy. Purchasing policies for state schools can be complex. Districts typically purchase through formal bids on an annual purchasing contract, although districts and possibly individual schools have the option to buy seasonally from local growers under an informal three-bid procurement process.”
- “If the FDA [US Food and Drug Administration] Food Code has been adopted by a tribal government, as it has been by Navajo Nation, all food establishments including schools are required to buy only from an approved source and follow defined best practices in handling food within their facility.”
- “There are a variety of certification programs for farms to become an approved source. The most common is the USDA Good Handling Practices/Good Agricultural Practices Certification (GHP/GAP)... Even though it is the most basic, some requirements of GHP/GAP still may pose a challenge to small growers in this region [on the Navajo Nation].”
- In order to serve food from school gardens, those gardens must also meet certification requirements.
  - From the report “Healthy Foods for Navajo Schools: Discoveries from the First Year of a Navajo Farm-to-School Program,” by Shawn Newell, May 2013

***These findings highlight the need for the Navajo Nation to provide financial assistance to Diné food producers and Farm to Institution projects on the Navajo Nation to help offset the initial increased costs of implementing these projects. These findings also illustrate that there are more systemic barriers to developing Farm to Institution programs on the Navajo Nation in the form of food safety regulations. Strategies to address these barriers are discussed in the next section.***

## Establishing Sovereign Food Safety Standards for The Navajo Nation

Establishing Navajo Nation Food Safety Standards that incorporate traditionally grown and collected foods, as well as foods that are prepared in traditional methods and do not require costly infrastructure.

Federally implemented food safety standards and regulations are immense and complex. Regulation of food safety is overseen by several federal agencies (the United States Department of Agriculture, the Food and Drug Administration, and the Department of Homeland Security), individual States, and, on reservations, Indian Health Services. From interviews with Native American small scale producers in case studies, Farm-to-School programs, and other food system actors, it is apparent that these standards are complicated to understand and difficult for small scale producers to meet. With the passage of the Food Safety Modernization Act in 2011, regulations are expected to increase in complexity and oversight. Since the Navajo Nation has simply adopted federal regulations, rather than develop its own standards, Diné producers are also hindered by the barriers posed by current food safety standards.

For Diné farmers, community, and school gardens to be able to provide food for Farm to School programs, they must be certified. To meet certification standards, farms and gardens are not allowed to use many sustainable and traditional farming techniques, such as composting, integration of animals, and rain water catchment.<sup>49</sup> For ranchers to be able to sell their meat commercially, animals must be processed in a USDA certified facility, however, these facilities are far from the Navajo Nation and are unfeasible for a majority of Diné ranchers to access. Wild plants and foods are considered unsafe unless those selling these foods have high cost insurance. Certified food safety infrastructure is extremely costly to build and therefore out of reach of Diné people. Essentially, food safety standards are near impossible to meet for the majority Diné food producers, particularly if they use traditional agricultural practices and traditional food preparation methods, are in the rural regions of the Navajo Nation without running water, or have limited financial resources.

What this effectively means is that traditional knowledge and food preparation is being regulated out of our food system and is viewed as unsafe. For example, a sheep butchered by Diné elders using traditional techniques or pinons collected by families are considered unsafe, are not allowed to be served in schools under current regulations. This threatens the ability of Diné people to be able to feed our communities with traditional foods and our ability to restore a Diné food economy and system. Current food safety standards also threaten the cultural knowledge that fed Diné people safely prior to American efforts of colonization. Diné food knowledge is indigenous food safety, and should be protected and maintained.

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<sup>49</sup> Shawn Newell, *Healthy Foods for Navajo Schools: Discoveries from the First Year of a Navajo Farm-to-School Program*, (Flagstaff, AZ: Native American Development Associates, 2013).

The current approach of food safety directly undermines the premise of Diné Food Sovereignty and, therefore, must be addressed if the Navajo Nation is to revitalize traditional foods and rebuild a self-sufficient food system. This can be accomplished through the establishment of sovereign Navajo Nation food safety standards.

To ensure that traditional foods and the knowledge of how to plant, harvest, collect, hunt,

*“Not many Indigenous communities have their own food regulations and policies. Because of this, the regulations set forth by the federal government are adopted by default in Indigenous communities. Tribal sovereignty could be exercised and tribal food policies could be created in order to change this. For now, the federal government holds the regulations for food policies in Native communities... Sovereignty can be exercised and positive changes can and should be made in our own communities.”*

*- From “Indigenous Farm to School,” a report by Kaisa Jackson and the White Earth Land Recovery Project, 2012.*

butcher, process and store those foods can be revitalized, Navajo Nation food safety standards must not focus on conventional perspectives of food safety alone. To accomplish this, food safety protocols should be developed with indigenous knowledge holders and traditional food safety experts at the community level. This knowledge was in practice long before the advent of refrigeration, stainless steel, and running water, and if it is accessible, can enable many Diné people to become food producers, even in rural communities without electricity and running water, or where they have limited financial resources.

If the Navajo Nation does establish its own unique and culturally appropriate food safety standards, these standards will take precedence over federal and state regulation on the Navajo Nation. Essentially, federal and state food safety authorities will have no jurisdiction on food produced and sold within the Navajo Nation. It has been further theorized that if other Native Nations establish their own sovereign food safety standards, tribes can engage in food trade and commerce without going through federal regulations.

### **Certified Processing Facilities and Tribal Industry**

Of course, if Diné food producers want to sell foods off of the Navajo Nation and access non-Native markets in the United States, state and federal food safety standards will need to be met. As previously mentioned, food safety infrastructure is very costly and is not feasible for most Diné food producers to build. There are examples, however, of innovative ways communities and collective based-organizations have strategized to meet federal food safety regulation. Two prominent examples of this are Taos County Economic Development Corporation’s (TCEDC) Mobile Montanza (a certified mobile livestock slaughter unit) and community certified kitchen. TCEDC established these facilities to give access to USDA certified facilities for small scale, local ranchers, cooks, and bakers so that they would be able to sell their products commercially. These facilities are available for use for an affordable fee by community members. The Mobile Montanza is now being used by some Diné livestock owners.

The Navajo Nation can support Diné producers through the establishment of several USDA certified food processing and storage facilities across the Navajo Nation, such as small scale slaughtering facilities, mobile slaughtering units, community kitchens, and food storage. This would allow Diné producers to access these facilities and markets off of the Navajo Nation.

In Northern New Mexico, Taos County Economic Development Corporation (TCEDC) is finding innovative ways to address challenges related to food processing facilities and regulations. Their “Mobile Livestock Slaughter Unit” and Taos Food Center represent ways that communities can work together to provide resources to support local food production:

TCEDC’s “Mobile Livestock Slaughter Unit” (MLSU) seeks to assist small limited-resource, underserved Hispanic, Native American and female ranchers and farmers with tools and services that enable them to increase income, create jobs and businesses, and promote healthy people in a healthy community. The MLSU is expected to open up new markets for Northern New Mexico ranchers. Not only will the unit dramatically cut costs for producers of cattle, lamb, bison and other livestock, but the refrigerated truck is expected to encourage ranchers to take advantage of “healthy market niches at stores and restaurants”. The unit housed in a semi-tractor trailer, is driven to the producer’s location and can process up to 10 beef, 80 lambs and 8 buffalo on site. Animals are killed outside the unit, in a humane manner, and then trolleyed inside to be skinned, cleaned and hung for aging. TCEDC’s Hang & Age and Cut & Wrap facility is available for local ranchers and livestock growers to provide niche markets with locally grown meats. The MLSU is a USDA-inspected mobile slaughterhouse providing the opportunity for resale of meat.

*“Our local ranchers and livestock growers are raising ranch fed, healthy meat and then having to sell it on the hoof for pennies. We want to give them a chance to hang onto their lifestyles, land, and water while making a decent living. Our project will add another community asset to specifically assist in adding jobs and businesses in an economic sector for which there is a strong and emerging market.”*

Food is at the heart of the cultures and people of Northern New Mexico. The Taos Food Center is at the heart of TCEDC's activities in supporting the people, cultures, and food of Northern New Mexico. The Taos Food Center is a 5,000 sq. ft. commercial kitchen that has the equipment, services, and support needed to get local food businesses started! Over 40 local food businesses currently work out of the Taos Food Center, making everything from fresh traditional salsas to delicious organic scones. Equipment available in the facility includes: dry storage, a large walk-in cooler, walk-in freezer space, convection ovens, fryers, steam kettles, a vacuum sealer, two commercial fruit presses, a flash-pasteurizer for juice, and a semi-automatic canning line that includes a filler and capper. Support services for the food businesses include specialized training, product development, pH testing, regulatory assistance with NMED and FDA requirements, business development and cooperative marketing assistance. Over 85 community members have graduated from TCEDC's specialty foods course, "The Food Sector Opportunity" program. This course offers participants the basics of the history and culture of food in Northern New Mexico, food safety, packaging, labeling, government food regulations, and specialty foods product development and marketing.

- From Taos County Economic Development Corporation Website

Box 7.2

## Creating New Access Points for Healthy and Traditional Foods

In addition to offering healthy and Diné foods through existing food retail locations and food access points, the Navajo Nation can further move to increase access to healthy traditional foods and rebuild a Diné food economy by creating new access points for both consumer and food producers.

### Mobile Grocery Stores



MoGro selling fresh produce in Cochiti Pueblo.  
Photo from MoGro website.

Mobile grocery stores are one strategy communities are using to bring immediate access to fresh and healthy foods for people living in food deserts. Mobile grocery stores are refrigerated, temperature controlled trucks, which bring affordable fresh produce and healthy foods into communities. One mobile grocery store operating regionally is the Northern New Mexico based MoGro, which is now serving several Pueblo communities including Jemez, Cochiti, Santa Domingo, San Felipe, and Laguna. The effectiveness of mobile grocery stores for Native communities could be further expanded by offering locally produced and

traditional foods. The Navajo Nation could work to contract with an existing food retailer or mobile grocery store to get these services on the Navajo Nation, or it could develop its own. Furthermore, farmer and community-based cooperatives could also establish a mobile grocery store.

### Farmers' Markets

Farmers' Markets have been making their way onto the Navajo Nation in recent years – in 2013 alone, successful farmers' markets were held in Shiprock, Ramah, Tsaile, and Tuba City. Data from the Community Food Assessment illustrates Diné peoples' interest in farmers' markets; ninety-one (91%) of participants in the Consumer Survey indicated that they would be interested in shopping at a regional farmers' market. In the Community Grower Focus Groups, Tsaile growers said they were inspired to plant after seeing the success of the Tsaile farmers' market in 2012.



Local farmers sell their produce at the Tsaile Farmers' Market in 2012

Farmers' markets not only create a space for people to access healthy and traditional foods and for food producers to sell their products, but also provide opportunities for communities to

connect and socialize. Research participants elaborated in interviews that they would be more likely to visit a farmers' market if it featured social activities, such as music, art, and cooking demonstrations for all generations. For a farmers' market on the Navajo Nation to be successful, it must have mechanisms in place to enable the use of EBT and WIC, given that such a high percentage of the population of the Navajo Nation depends on food assistance programs. The Navajo Nation Food Distribution program can also work to develop vouchers that its program recipients can use at Farmers' Markets rather than simply providing USDA commodity food.

### Community Supported Agriculture

Another strategy that farmers, communities, and the Navajo Nation can use to create access to local and traditional foods is through the development of Community Supported Agriculture (CSA). In CSAs, people buy "shares" from a local farmer or farmers during the growing season, and during harvest, the farmers will distribute boxes of the fresh and locally grown produce weekly to those that purchased a share. One regional example of a CSA is the Work in Beauty CSA based out of Gallup, NM, which offers Spring, Early Summer, Summer, and Fall shares through season extension methods, as well as gardening workshops.

### Addressing the Threat of Genetically Modified Organisms and Genetic Engineering to Diné Agriculture

Genetically Modified Organisms (GMO) and Genetic Engineering (GE) are technologies that have been widely introduced into agriculture in the United States and globally over the past few decades. The biotech and chemical industry that produces GMO and GE crops and animals asserts that these technologies improve the productivity of agriculture and are the solution to feeding the growing population of the world. Many critics of these technologies, however, point to suspected health effects, current lack of testing and regulation, genetic patenting (ownership of life), and long-term unsustainability as serious issues that should prompt increased regulation, labeling, or even banning of GMO/GE seeds and foods. From the Community Food Assessment, farmers and knowledge holders raised concerns over GMO seeds and crops from Diné perspectives.

The processes of GMO and GE take genes from one living being and inserts it into the DNA (the genetic component of life) of another living being of a completely different species. A well-known example of GMO/GE are tomatoes that had genes from an arctic flounder (a fish) inserted into their DNA to make them resistant to the cold, a interspecies genetic crossing that would never occur in nature. The reason most crops are genetically modified and engineered is to make them resistance to toxic chemicals including herbicides and

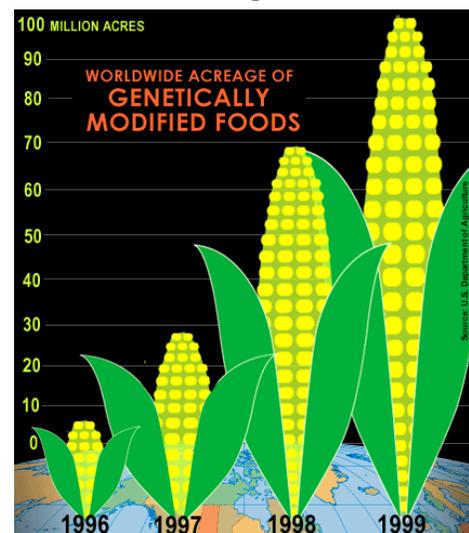


Figure 7.1 Acreage of Genetically Modified Foods Worldwide

pesticides (chemicals that kill plants and insects). One of the crops most impacted by GMO/GE processes is corn; in 2013, close to ninety percent (90%) of the corn grown in the United States was genetically modified.<sup>50</sup>

Since the early 1990's, Genetically Modified Organisms and Genetically Engineered foods have been on the market for human consumption in the United States. The Grocery Manufacturers Association found that ingredients from GMO/GE crops are found in over seventy percent (70%) of the foods at grocery stores, particularly in processed foods. While these foods are currently



Mice fed GMO Corn and Exposed to Herbicides in a 2 year Study

corn and exposed to the Roundup herbicide, both produced by the corporation Monsanto, developed large tumors on their bodies, kidney and liver failure, and ultimately died.<sup>52</sup>

approved by the Federal Food and Drug Administration (FDA) as safe for human consumption, many people have raised concerns about the health effects of GMO/GE foods, including allergies, liver and intestine damage, infertility and sterility, infant mortality, and death.<sup>51</sup> There are very few long-term studies (over 90 days) that have been conducted on the health effects of GMO/GE.

However, of the few studies that have been done, the results are alarming. A recent two year study found that mice who were fed GMO

beyond health issues, GMO/GE seeds and foods are causing concern due to the patent and ownership laws in the United States. When a corporation, such as Monsanto, genetically modifies or engineers an organism (living being), under United States patent law, that corporation then owns the DNA. As DNA passes from generation to generation, this means that any offspring of an organism that carries the patented DNA also belongs to the corporation. What this means for both American and global agriculture, is that farmers are being sued by biotech corporations for patent violation when the farmers fields are contaminated by GMO seed. Because farmers cannot afford the legal fees in court battles with billion dollar corporations, farmers are forced to stop growing and destroy their seeds in settlements. Farmers that do plant GMO crops are required to buy seeds from the biotech corporations every year and prohibited from seed saving. As GMO/GE seeds are now dominating agriculture worldwide, the future of seed saving and heritage/traditional crops are under threat. As of 2007, biotech corporations controlled close to seventy percent (70%) of seeds globally.<sup>53</sup>

<sup>50</sup> "Recent Trends in GE Adoption," *U.S. Department of Agriculture Economic Research Service*, last modified July 9, 2013, [http://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us/recent-trends-in-ge-adoption.aspx#.UoBmaBm\\_bIY](http://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us/recent-trends-in-ge-adoption.aspx#.UoBmaBm_bIY)

<sup>51</sup> Jeffrey Smith, "Spilling the Beans: Unintended GMO Health Risks," *Organic Consumers Association*, March 2008, [http://www.organicconsumers.org/articles/article\\_11361.cfm](http://www.organicconsumers.org/articles/article_11361.cfm)

<sup>52</sup> Gilles-Eric S eralini, et al., "Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize," *Food and Chemical Toxicology* 50, no. 11 (2012).

<sup>53</sup> "The World's top 10 Seed Companies: Who Owns Nature?," *GM Watch*, <http://www.gmwatch.org/gm-firms/10558-the-worlds-top-ten-seed-companies-who-owns-nature> and *Who Owns Nature? Corporate Power and the Final Frontier in the Commodification of Life*, (ETC Group, 2008). Downloaded at:

## **GMO/GE on the Navajo Nation**

GMO/GE seeds are currently being used on the Navajo Nation by the Navajo Agriculture Products Industry (NAPI), located near the chapters of Hogback, Upper Fruitland, and Shiprock including GMO corn purchased from Monsanto. As the region remains a major agricultural hub for many Diné farmers, the risk of GMO contamination of Diné crops, particularly corn, is high. Furthermore, NAPI's production of alfalfa also utilizes GMO seed, which many Diné livestock owners purchase under the "Navajo Pride" brand, so GMO/GE feed is entering the Navajo Nation food system through NAPI products.

*In terms of Diné cultural perspectives, Diné knowledge holders, elders, and farmers have criticized the practice of GMO/GE by biotech industries throughout Diné Policy Institute's research and Food Sovereignty Initiative, stating that these practices are in direct violation of our teachings; of the Diné Fundamental Laws and our relationship and duty with plants and animals, particularly with our relationship with corn, our most sacred plant, and have stated that GMO/GE threatens the Diné way of life. As GMOs/GE pose such a large threat to Diné famers, Diné seeds, and Diné lifeways, and go against our most basic teachings, it is vital that the Navajo Nation and Diné people address both the presence of GMO/GE food and seeds on the Navajo Nation as well the potential future risks of GMO/GE to Diné Agriculture.*

## **Ban on GMO/GE Seeds and Pesticides on the Navajo Nation**

The technologies and legalities of genetic modification and genetic engineering are in direct contradiction to Diné Food Sovereignty. The corporate ownership and control of seeds threaten the future of Diné agriculture; Diné people must control their seeds and agricultural practices in order to rebuild a self-sufficient food system that provides healthy foods for Diné people and also ensures the continuation of Diné agriculture and lifeways. Therefore, it is strongly recommended that Diné people, Farm Boards and Committees, Chapters, and the Navajo Nation move to ban GMO/GE seeds on the Navajo Nation. As

*“Changing food properties, which people are doing now, that is definitely not in the realm of [our] duty. We say it is placed here for us therefore we are not to change it in any way. Also our people don't know much about GMO concept... What I know is that NAPI has GMO corn... Monsanto came up with a different kind of corn and patented the kernels. If the pollen fertilized another corn in the area, this company can sue the individual. If this is not what we want then we need to do a resolution to stop it from happening. As a rule, we cannot fool around with altering any natural plant... I feel that we should have a law about this idea. We should say no to this idea.”*

- Roy Kady, Diné Food Sovereignty  
Advisory Circle, July 2012

[http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/707/01/etc\\_won\\_report\\_final\\_color.pdf](http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/707/01/etc_won_report_final_color.pdf)

GMO/GE seeds are already being used on the Navajo Nation by the Navajo Agricultural Products Industry (NAPI), this will require NAPI to change agricultural practices and policies, and end the purchase and production of GMO/GE crops.

Recent State legislations have outlawed the banning of GMO/GE seeds in many counties; counties and states in the United States where people have the authority to ban GMO/GE seeds are becoming increasingly rare. Therefore, the Navajo Nation and the Diné people have a unique opportunity to enact what many cannot through an assertion of Diné Sovereignty.

### **Native Seed Protections**

In addition to banning GMO/GE seeds, the Navajo Nation and Diné people should also consider enacting legal protections for our Diné seeds, to hold biotech corporations accountable for contamination of Diné seeds if this does occur. This is particularly urgent as legislation and court decisions at the state and federal level are making it increasingly difficult to hold biotech companies responsible for the contamination of heritage, heirloom, and non-GMO/GE seeds. One example of this is the “Monsanto Protection Act,” a piece of federal legislation.

### **Seed Banks and Seed Libraries**

Diné people can begin to protect Diné seeds and provide access to heritage, non GMO/GE seeds through the creation of community Seed Banks and Seed Libraries. Seed banks store seeds, while seed libraries allow people to take seeds to grow, provided that they give some seeds back from what they grow after harvest. Diné seed banks and libraries would also provide access to seeds for growers, addressing a concern of famers in the Community Food Assessment – that they didn’t have access to Native seeds. Seed Banks can include state of the art technology, such as that used by Native Seed Search in Tucson, AZ. However, this is not necessary; Diné and other Native people historically stored seeds in clay jars, recent excavations of such seed preservation methods in the Midwest have produced seeds that were able to grow after 800 years. The seed bank in Tesuque Pueblo in New Mexico stores seeds in jars in a dark and cool in-ground cellar.

### **Education**

GMO/GE ingredients are in the majority of foods that Diné people are eating and GMO/GE seeds are on the Navajo Nation, however, most Diné people are unaware of the existence of these practices. Therefore public education and outreach on genetic modification and genetic engineering for both Diné people and Navajo Nation leadership is needed.



Tsaile Public School Students Learn to Identify Native Seeds with the help of Native Seed/SEARCH, a seed bank for native seeds of the Southwest in Tucson, AZ.

## Land Use Policy Reform

In the Community Food Assessment, Diné farmers and Chapter Officials identified issues with the current land use permit system, lack of access to land, land disputes, and the processes to settle those disputes and transfer permits as major barriers to farming and food production. Analysis of the Diné Food History revealed that the regulation of Diné agricultural lands by the federal government was established with the Treaty of 1868. The current land-use permit system was established in the 1930's in the aftermath of the Livestock Reduction to increase federal regulation and control over Diné livestock and agricultural practices. To this day, the BIA continues to regulate land-use through the issuing of permits and leases for any use of land on the Navajo Nation (Home-site leases, Grazing Permits, Farm Permits, Business-site leases), giving the BIA and federal government ultimate control of Diné lands.

This BIA-implemented land-leasing, along with its lengthy bureaucratic processes at the federal and Navajo Nation level, has effectively slowed and complicated the acquisition and transfer of agricultural land in communities on the Navajo Nation, resulting in large percentages of farmland out of production. The Community Food Assessment found in some communities, as many as ninety percent (90%) of the agricultural land use permits are out of production.

*To address these issues, and to revitalize agriculture on the Navajo Nation, land use policy reform for the Navajo Nation is critical.*

## Control of Land

Diné Food Sovereignty asserts that it is the right of farmers, ranchers, hunters, and wild food collectors to control the lands on which they depend. This aspect of Food Sovereignty has been echoed repeatedly in international forums. In May 2012, for example, the United Nations Permanent Forum on Indigenous Issues released a statement asserting that Indigenous peoples' right to food depends on their control of resources, lands, and territories they inhabit.<sup>54</sup> Regaining control over resources, lands, and territories is vital to ensuring healthy traditional food production that benefits people, plants, animals, water, and soil on the Navajo Nation, and is a primary step to addressing the issues caused by harmful policies of colonization. The Community Food Assessment demonstrated that Diné growers and chapter officials feel that having increased control of land use, at the local level, would make better sense for their communities and allow them to come to appropriate solutions around land use issues.

*To fully enact Diné Food Sovereignty in the revitalization of traditional foods and the rebuilding of a self-sufficient food system, and, more broadly, Diné Sovereignty, the Navajo Nation must assert that control of lands on the Navajo Nation, including agricultural lands, belongs to the Diné people, and not the Bureau of Indian Affairs or any other entity of the United States federal government. Furthermore, to ensure that farmers, ranchers, hunters, and wild food collectors have authority over lands vital to food production, decision-making processes on land use and*

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<sup>54</sup> "Indigenous Peoples' Right to Food Crucially Dependent on Control of Resources in Land, Territories They Inhabit, Permanent Forum Told," *United Nations Permanent Forum on Indigenous Issues*, May 14, 2012, <http://www.un.org/News/Press/docs/2012/hr5092.doc.htm>

*regulation should happen at a community-based level, rather than at a centralized government level on the Navajo Nation.*

### **Land Dispute Resolution**

The frequent land disputes described in the Community Food Assessment, as well anecdotally through out the Navajo Nation, which are the catalyst for lengthy bureaucratic and court processes that keep land permits out of production demonstrate not only issues with the current permitting process, but also the greater breakdown of *K'é*, family, and community described in the Community Food Assessment and Diné Food History.

*In order to revitalize agricultural lands, it is essential not only to address control and access to land, but also to work to restore *K'é* in communities. To resolve land disputes and work to heal communities and families, the Diné peace making process should be considered as this process is consensus-based and works to restore *Hózhó* for the benefit of all involved when conflict arises. Ultimately, people, families, and communities will need to learn how to work together over shared resources, as cooperation is essential to food production and rebuilding our food system.*

### **Land Management**

Themes of detachment from agriculture and the land use practices that provide for agricultural regions arose in the Community Food Assessment. Specifically, examples were given of people establishing home sites and moving into flood plane lands, which were historically used for flood plane agriculture in several communities during Grower Focus Group meetings. Furthermore, Community Land Use Planning Committee members have attested that the current emphasis in Chapter Community Land Use Plans is placed on establishing economic development and NHA housing zones, which undermine agricultural land use.<sup>55</sup>

As Diné people have become detached from their lands due to the movement to wage-based economies and lifestyle shifts, land on the Navajo Nation deteriorates, mostly visibly through soil erosion, desertification, and the increase of sand dunes. Currently, the Navajo Nation has enacted controversial horse roundups and other livestock reductions to address concerns over soil erosion, largely based on the same tactics and carrying capacity measurements used by the federal government in the livestock reduction of the 1930's. As detailed in the Diné Food History, many researchers have suggested, however, that the livestock reeducation actually did little to stop soil erosion. Furthermore, the carrying capacity measurements currently used by the BIA and Bureau of Land Management do not consider land as part of greater ecosystems and are limited in their understanding of the symbiotic relationships between humans, plants, animals, water, and soil. Even mainstream scientists have stated that the process of desertification is still not fully understood.

In response to failures of livestock reduction in addressing soil erosion concerns globally, scientists have begun to research on alternative methods of holistic land management, which

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<sup>55</sup> Summary from Focus Groups, (Regional Food Policy Planning Conference, Tsaile, AZ, August 2, 2012).

incorporates people, animals, plants, water, and soil into solutions to revitalize land, rather than simply remove them. Holistic Management, “involves using [a] decision-making framework that ensures all... significant management decisions are simultaneously economically, socially and

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*Holistic Management, “involves using [a] decision-making framework that ensures all... significant management decisions are simultaneously economically, socially and environmentally sound both short and long term,” and works within natural functions and processes.*

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environmentally sound both short and long term,” and works within natural functions and processes.<sup>56</sup>In terms of range land management, holistic management prevents overgrazing by combining livestock in communal herds that are rotated (requiring cooperation and shared utilization of land), timed in accordance with rainfall and water availability, and engaging in water catchment to maximize the amount of water absorbed into the soil. In these practices, animals and people are viewed as part of the solution instead of entities that simply exploit the land.

*The Navajo Nation should develop land management plans that take into account alternative approaches, such as holistic management, that mutually benefit people living on lands, livestock, wildlife, soil, and water resources, rather than marginalize livestock owners and animals. These plans should be developed at the community level, with input from farmers, livestock owners and people residing on the land incorporated into the plans. Furthermore, to gain a better understanding of desertification and soil erosion, the Navajo Nation should also consider other contributing factors in addition to livestock, such as broader patterns of climate change and the impacts of vehicles on soil as part of land management plans.*

## **Water Harvesting and Conservation**

Water is absolutely vital to food production. Lack of access to water has been identified as another major barrier to revitalizing agriculture on the Navajo Nation. Prolonged drought conditions and climate change also further exacerbate the need to secure water sources for food production. The Navajo Nation is currently engaged in lengthy court battles to secure water rights for the Diné people, however, with recent legal delays it appears unlikely that the many people that live without running water on the Navajo Nation will gain access to it in the foreseeable future. While the water situation appears very bleak for Diné people and agriculture, some Diné agriculturalists are finding innovative and traditional based methods to deal with limited water access.

*Rather than simply resign that water for food production is out of reach or rely solely on court processes, Diné people can begin to revitalize agriculture through water catchment, harvesting and conservation techniques, such as brush damns, spillways, and rainwater collection. To collect and use the water that falls on our lands is an active assertion of our water rights. As Diné people were historically dry-land farmers, this also includes a revitalization of traditional*

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<sup>56</sup> Allen Savory, “Response To Request For Information On The “Science” And “Methodology” Underpinning Holistic Management And Holistic Planned Grazing,” *Savory Institute*, Updated March 6, 2013, [http://www.savoryinstitute.com/media/42448/Science-Methodology-Holistic-Mgt\\_Update\\_March.pdf](http://www.savoryinstitute.com/media/42448/Science-Methodology-Holistic-Mgt_Update_March.pdf)

*agricultural practices. Most of these methods can be implemented at low cost and with few tools, but do require people, cooperation, and collective labor.*



Black Mesa Water Coalition's (BMWC) Community Food Security Project in Pinon, AZ.  
Monsoon rain is collected and slowed through brush dams and tiered fields.

Photo credit: Roberto Nutlouis

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*“Brush dams were used by our ancestors to control water to irrigate their fields. Such simple technology can do so much for the land to produce healthy foods.”*

*– Roberto Nutlouis, BMWC Green Economy Coordinator and Director of the Community Food Security Project*

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## Conclusion

Through an assertion of sovereignty on the part of the Navajo Nation, and through community-based policies and programs, the Navajo Nation can begin to rebuild a self-sufficient food system that will directly improve nutrition and health on the Navajo Nation. In light of federal budget cuts to food assistance programs, the need for the Navajo Nation to move toward self-sufficient programs, services, and ultimately a self-sufficient food system, is very apparent.

Furthermore, the threats to Diné wellness and lifeways described in this report are only growing. Rates of nutritionally-related illness are projected to increase at alarming rates. In addition, legal developments increasingly threaten Diné peoples' rights to maintaining agricultural and food practices. Therefore immediate action to address these issues is critical to ensuring for the well-being of the Diné People.

As a most fundamental element of life, food provides a way to strengthen Diné peoples' connections to each other, all living things and Mother Earth, and fosters sovereignty for the Navajo Nation in a way that maintains the values, principles, lifeways and language that make us Diné. In this regard revitalizing traditional foods and rebuilding a self-sufficient food system will ensure for the resilience (Sih hasin) of the Diné people for generations to come.

This report is a starting point. The research, information and recommendations provided in the report are intended to serve as resources to open up conversations on our food system and to identify new avenues for solutions that are appropriate for the Diné people. Additional research needs to be conducted to expand our understanding of our food system and the strategies and solutions needed to address the many issues we currently face regarding food. It is the hope of Diné Policy Institute that Diné people and Navajo Nation policy makers use this report to move forward to realizing Diné food sovereignty and rebuilding a self-sufficient Diné food system.

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