

that supports Native environmental initiatives.¹⁰¹ In addition, BMWC received funding from the Confluence Project, the Christian Fund, and Navajo Nation Workforce Development, who will help recruit and pay for youth participants this year. BMWC recently applied for a grant through First Nations Development Institute to expand their community garden program and begin working with local churches, so they can serve as resource sites that provide fencing and gardening materials to the community. This year, BMWC plans to collaborate with other regional organizations that focus on improving food systems (Diné Inc., Diné College Land Grant Office, Dibé Be Íina) to organize gardening workshops that discuss the cultural and spiritual significance of farming.

Overcoming Challenges

Nutlouis notes that obtaining natural resources on the Navajo Nation makes it challenging to change and improve food systems. Although the Navajo Nation is over 27,000 square miles, the land is considered trust land that is managed by the tribe under the United States Department of the Interior's Bureau of Indian Affairs. Due to this system, it is difficult for farmers, particularly young farmers, to acquire permits, which will allow them to apply for federal resource assistance.¹⁰² The permit process can often be long and tedious, discouraging farmers from even applying in the first place. Besides land issues, farmers in the area must utilize watershed strategies and rely on natural aquifers, because they cannot invest in technical systems.¹⁰³ BMWC hopes to assist farmers in the Black Mesa area and make sure they are able to continue to provide food for their families and relatives. By continuing their community food assessment surveys and their community gardening program, BMWC hopes to develop strategies

¹⁰¹ Honor the Earth: 2012 Grantees, Honor the Earth, last modified 2013, <http://www.honorearth.org/news/honor-earth-2012-grantees>.

¹⁰² Robert Nutlouis. Interview. St. Michaels, Arizona, 2 January 2013

¹⁰³ Ibid.

that will strengthen the Black Mesa food systems, which will lead the Diné people to develop a stronger sense of ownership and self-determination.¹⁰⁴ For the future, BMWC hopes to see more development with meat and ranching on the Navajo Nation and a more independent food approval process. Nutlouis states that it would be ideal if the Navajo Nation created their own food system policies and regulations (separate from U.S. Department of Agriculture), that encouraged local production and markets, that way the tribe could regulate their own agriculture, instead of relying on the federal government.¹⁰⁵

3.2 Navajo Nation Department of Agriculture

The Navajo Nation Department of Agriculture (NNDA) began in the 1950s, under the Division of National Resources within the Executive Branch of the Navajo Nation.¹⁰⁶ Developed to sustain the land, people, water, and agricultural resources through conservation, protection and preservation, NNDA provides guidance and leadership to the Navajo farmers and livestock producers. NNDA's vision statement is to "provide guidance to the Diné people in the stewardship of Mother Earth by providing leadership, knowledge and technological assistance in the management and conservation of her resources, from the inheritance of generations to come."¹⁰⁷ In order to develop a viable rural economy on the Navajo Nation, NNDA focuses on family livestock ownership, commercial and subsistence farming enterprises, and range management to ensure that they function efficiently and safely. NNDA also provides educational outreach and technical assistance in the planning, design, implementation, and maintenance of agricultural conservation practices to Navajo ranchers, farmers, and community members. To

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

¹⁰⁶ This section is based on interviews with Navajo Nation Department of Agriculture Director, Leo Watchmen Jr. and Principle Planner Roxie June, 11 March 2013.

¹⁰⁷ Navajo Nation Department of Agriculture, Navajo Nation Department of Agriculture website, last modified 2007, <http://www.agriculture.navajo-nsn.gov/nnda.html>.

help Navajo owners maintain healthy livestock NNDA provides veterinary and herb health services across the Navajo Nation. NNDA supports the preservation of Diné cultural values and traditional agricultural knowledge through guidance and educational outreach.

Permits and Grazing

Under the Division of Natural Resources Navajo Nation Department of Agriculture, three committees help maintain grazing regulations and farm lands across the Navajo Nation. The Navajo Nation has approximately 15,000 grazing permits that legally allow people to ranch and graze livestock on Navajo Nation land. The District Grazing Committee (DGC) of NNDA, divided into 20 Grazing Districts with 78 Glazing Officials representing chapters in those districts, manages the Navajo Nations inventory of livestock to ensure the sustainability of natural resources and environmental health.¹⁰⁸ Additional duties of the Grazing Committee are to 1) preserve Navajo Nation forage, land and resources, 2) protect Navajo permittees from the encroachment of non-Navajo individuals and business, 3) educate Navajo permittees on effective livestock practices and 4) maintain the Land Management Districts and Navajo Grazing Regulations.¹⁰⁹ The DGC also work with local producers to pursue grants from USDA and other sources for conservation projects, range management, and overall improvements in livestock production. The Navajo Nation Eastern Navajo Land Board (ENLD) oversees 2.3 million acres of grazing land in the eastern portion of the Navajo Nation. Some of these lands include the allotted lands provided by grazing leases from the U.S. Department of Interior Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM).¹¹⁰ The ENLD, composed of 20 elected members, carrying out the administration and responsibilities of certain land use, fee agreements,

¹⁰⁸ Navajo Nation Department of Agriculture (2012) Navajo Nation Department of Agriculture—Division of Natural Resources Overall Report Submitted to Deswood Tome, Office of the President/Vice-President, The Navajo Nation. Retrieved by Roxie June, 28 March 2013.

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

and livestock grazing between the Navajo Nation, the BIA, and BLM under a Tri-Party Agreement. The third elected body of NNDA is the Navajo Nation Farm Board (NNFB), with 13 board members who supervise approximately 3,500 Farm Permits on the Navajo Nation.¹¹¹

There are an unknown number of farms on the Navajo Nation that do not obtain permits, and they cannot obtain federal funding. The Farm Boards purpose is to 1) ensure proper protection of the local farmland and irrigation water systems, 2) promote coordination with the Navajo Nation, private entities, and state and federal agencies to maintain proper operation of the local Navajo farms, and 3) to promote the use of farmland through education and training.

Working with USDA

Another main responsibility of NNDA is collaborating with the United States Department of Agriculture (USDA). NNDA seeks funding from USDA Natural Resources Conservation Service (NRCS), USDA Environmental Quality Incentives Program (EQIP), and USDA Animal and Plant Health Inspection Service to help conduct projects like the National Veterinary Stockpile (NVS), fence installation projects, and land conservation projects. NNDA encourages Navajo farmers and livestock producers to apply for funding through USDA grants. Further, NNDA attends USDA Farm Bill¹¹² work sessions to advocate for changes that benefit the Navajo.¹¹³ NNDA continues to lobby for a Navajo farm status, in order to create added funding opportunities and that would allow the Navajo Nation to hire an Area Director. This director would have the authority to make funding decisions for the Navajo Nation. NNDA Principle Planner, Roxie June states that the USDA Farm Bill is not designed for the Navajo Nation or Native American reservations. She expressed that it is difficult understand how the Farm Bill

¹¹¹ Ibid.

¹¹² The Farm Bill is a comprehensive omnibus federal legislation, reauthorized approximately every five years by the United States Congress, regarding multiple agricultural, food and nutrition programs and policies.

¹¹³ Ibid.

applies to NNDA and other Navajo tribal entities.¹¹⁴ “We all need to sit down and go over the Farm Bill word per word to understand it, but we have so many other responsibilities as well,” June shares.¹¹⁵ Although June believes that the USDA regulations and guidelines are strict and difficult to enforce at times, she thinks they are necessary to keep people healthy. “It makes me feel safe and it’s part of the business and part of the process—I do not think it should go away, we just need to teach the farmers to better document their crops.”¹¹⁶

Home and Community Garden Program

Although the NNDA’s focus is on grazing and farm permits and veterinary services, they recently made a commitment to expand their services through their home and community garden program called “Planting Seeds for Healthier Communities.” NNDA is partnering with National Wildlife Federation’s Tribal Lands Conservation program and the Cooperative Extension Program for the Navajo Nation to implement home gardens at 15 homes, nurture five families to serve as mentors to other community members, plan and manage a minimum of five farmer’s markets/harvest festivals, and establish a partnership and a school garden within one school in five Navajo agencies on the Navajo Nation.¹¹⁷ In late 2012, NNDA received a \$17,000 grant through the Confluence Fund, an organization that supports innovative conservation projects, to enable NNDA to begin their home and school garden initiative. Through this initiative, NNDA will provide educational outreach to Navajo families through hands-on training workshops on how to combine traditional and “modern” agricultural practices to address the challenges of the Southwest climate: low soil fertility; scarce rain alternating with heavy summer monsoon rains;

¹¹⁴ Roxie June, Interview, Window Rock, AZ, 11 March 2013.

¹¹⁵ Ibid.

¹¹⁶ Ibid.

¹¹⁷ Ibid.

high winds; and short growing seasons due to unexpected early or late frosts.¹¹⁸ The overall goal of “Planting Seeds for Healthier Communities,” is to support Navajo families and their efforts to improve their health by restoring their land.

Through home and community gardening, NNDA hopes to connect lessons on nutritional education, environmental health, and traditional Navajo values, to encourage families and youth to learn and engage in agriculture. Throughout this year (2013) a series of free home gardening workshops will be offered in five Navajo communities: Window Rock, AZ; Chinle, AZ; Kayenta, AZ; Shiprock, NM; Tuba City, AZ; and Crownpoint, NM. These communities represent the largest communities on the Navajo Nation. These workshops, offered to family members of all ages, will teach participants how to create and maintain small home gardens that will be able to sustain drought conditions. After each workshop, the participants will be able to take home a container of seeds that they will be able to plant in their yards. In addition, the hands-on workshops will cover the following topics: garden design, care and maintenance, seed selection and saving, traditional and modern planting and harvesting techniques, nutritional values and healthy preparation of the harvest, economic benefits of home gardens, and budgeting. Partnering with local Indian Health Services (IHS) public health departments and personnel from Diné College and Navajo Technical College, NNDA will also provide workshops on farming, harvesting, preparing, and preserving traditional and non-traditional crops. These home gardens will allow families to spend less at the grocery stores and they can sell their surplus produce at community farmer’s markets. All the workshops will be advertised in the local newspapers, on the local radio stations, and through social media.

School Gardening

¹¹⁸ Roxie June, Interview, Window Rock, AZ, 11 March 2013.

NNDA plans to contact school administrators and faculty members to determine what schools in the five Navajo agencies are capable of starting a school garden. Working with the school administrators, NNDA will identify where the garden will be located, what the available resources are (land, water, number of student involvement, time, and maintenance consideration), who will be the project leader, funding, and how the garden program will fit within the school's curriculum (e.g., will the gardening program be a class or an afterschool program, etc.). NNDA will also be working with Boys & Girls Clubs and other after-school programs to extend their youth involvement outside of schools. The school garden project will also expand the educational component of the "Planting Seeds for Healthier Communities" project. June mentions that one of their goals is to be able to serve the foods that are grown in the school gardens in the schools' cafeteria.¹¹⁹ "We hope to work with Farm to Table programs in California to help us with this process in the future," June states.¹²⁰ The five schools participating in the school garden program include: St. Michael's Indian School, Hilltop Christian School, Window Rock Elementary School (all in the Window Rock, AZ area); Tonalea Special Education School (Tonalea, AZ); and Tuba City Boarding School (Tuba City, AZ).

Seeking Help

To help facilitate the "Planting Seeds for Healthier Communities" project, NNDA is working with other departments inside and outside the Navajo Nation, as well as seeking additional funding. NNDA is partnering with Carole Palmer, National Wildlife Federation's (NWF) Tribal Lands Education Coordinator, who will assist in the organization of the home and community gardening workshops. The National Wildlife Federation's (NWF) Tribal Lands Conservation Program partners with tribal nations to protect wildlife, advance land stewardship,

¹¹⁹ Ibid.

¹²⁰ Ibid.

safeguard water resources, provide environmental education, and combat climate change.¹²¹ NNDA recently submitted a proposal to AmeriCorps Mentor Site Survey, in hopes to obtain a member that will assist with the home, community, and school gardening program. AmeriCorps is a program that provides about 75,000 opportunities for adults of all ages and backgrounds to serve through a network of partnerships with local and national nonprofit groups. AmeriCorp members serve full or part time over a 10- to 12- month period, and they receive an AmeriCorps Education Award of up to \$4,725 for college or graduate school or to pay back student loans.¹²² Since NNDA has limited staff, the AmeriCorp member will be one of the main personnel working on the project. NNDA will solicit seeds and supplies from organizations such as Native Seeds/SEARCH, the Home Depot, Ace Hardware, and Walmart. Additional funding resources are being researched so NNDA can broaden their project to other agencies on the Navajo Nation. NNDA hopes that this pilot program will be successful so they can continue to offer workshops and gardening assistance to the Navajo people.

3.3 Sunrise School for Ecological Living

Director Joe Pacal began the Sunrise School for Ecological Living in Fort Defiance, Arizona in 2007 to provide Native American youth with hands-on environmental educational opportunities.¹²³ Pacal, a non-Native who has been living on the Navajo Nation for about 12 years, realized the need of agriculture and gardening education in the communities surrounding Fort Defiance, Arizona, the central part of the Navajo Nation, and decided to establish the Sunrise School. When a large greenhouse and building space opened up at Good Shepherd Mission, an Episcopal mission located in Fort Defiance, Arizona and founded in 1889, Pacal's

¹²¹ National Wildlife Federation: Tribal Lands Conservation Program, National Wildlife Federation Website, <http://www.nwf.org/What-We-Do/Protect-Habitat/Tribal-Lands.aspx>.

¹²² AmeriCorps, Corporation for National & Community Service, <http://www.americorps.gov/Default.asp>.

¹²³ This section is based on an interview with Sunrise School for Ecological Living Director Joe Pacal, 4 January 2013.

Sunrise School became a reality. The goal of the Sunrise School is to help Native American youth “gain the skills and knowledge needed to live in a manner consistent with the cultural values of self-reliance, ecological balance and peaceful co-existence.”¹²⁴

Ecological Living

By focusing on youth, the Sunrise School strives to teach kids about gardening techniques in the hope of encouraging children to live healthier lifestyles and reduce their chances of developing type-two diabetes. With an emphasis on incorporating traditional Navajo agricultural knowledge, Sunrise School provides gardening programs, landscaping assistance, and educational curricula to local schools, an “at-risk” teenager psychiatric treatment program called the Adolescent Care Unit at the Tséhootsof Medical Center, the Navajo Nation Head Start Program, the Navajo Nation Office of Youth Development, the local Native American Boys and Girls Club, and the local Boy and Girl Scouts. Each of these organizations is responsible for maintaining a garden space on the Sunrise campus. Students learn about organic gardening, soil science, landscape design, tree and plant propagation, and land-restoration through experience, as they make huge compost piles, plant, weed, and harvest the gardens at the Sunrise School.¹²⁵ Sunrise School and the Navajo Nation Master Gardeners also invite adults from the community to learn about vegetable gardening and composting through their free workshops. Sunrise School also works with the Good Shepherd Mission Youth Group, who hosts volunteers from around the country, to educate non-Navajos about permaculture and traditional Navajo agriculture.

The Sunrise School campus features a large greenhouse, several garden sites, and several fruit trees, to provide a wide range of agriculture knowledge and food variety to students and the community. The 32’x56’ greenhouse was originally built in the early 1980s, but due to

¹²⁴ Sunrise School for Ecological Living, Sunrise School, <http://www.sunriseschool.org/>.

¹²⁵ Ibid.

abandonment and the lack of upkeep, the greenhouse had fallen into disrepair by 2007. Pacal and several volunteers renovated the greenhouse with financial support from churches outside the Navajo Nation. By March 2009, the greenhouse became operational and now grows a variety of fruits and vegetables year-round. Outside the greenhouse, Sunrise have about six separate 20'x50' garden areas that are managed by Pacal and students of Sunrise's partner organizations. Surrounding the garden sites are about 50 domesticated apple, peach, plum, and cherry trees. Sunrise School obtains all their seeds from Native Seeds/SEARCH and a similar organization in California called Seeds for Change. Sunrise School grows a variety of fruits and vegetables typically grown in the Southwest, but their greenhouse allows them to grow a great variety of produce. All the fruits and vegetables grown at Sunrise include: tomatoes, peppers, spinach, a variety of lettuce and leafy greens, beets, cauliflower, cucumbers, variety of melons, strawberries, raspberries, grapes, bananas, figs, potatoes, pumpkins, carrots, dates, peas, cabbage, broccoli, pomegranate, zucchini, green beans, onions, variety of herbs, and celery. Native foods include: winter and summer squash, variety of common beans, golden currant, banana yucca, sumac, wolfberry, and corn (Navajo blue corn and Hopi pink varieties). Sunrise School also makes an effort to plant a variety of native and cultivated trees and shrubs to restore the local landscape; they have planted hundreds since their start in 2007.

The Sunrise School's garden and landscaping program aims to create vocational opportunities for students to participate in ecologically sustainable projects that help promote a harmonious relationship between people and nature. The intention of the garden program is to involve students in food production for their families, landscape design and land restoration services, production and sale of cut flower arrangements and indoor plants, the production of food for sale at the local farmer's market, and the propagation of native plants for landscaping

and food. The Sunrise School provides these activities to not only teach students about gardening, landscaping, and nutrition, but to encourage kids to live more active lifestyles and to enjoy the outdoors. Instead of going home to play video games or watch television after school, the Sunrise School provides afterschool gardening programs for the youth to enjoy. To goal of the program is to motivate the students to create garden and landscaping projects away from the Sunrise School and at their homes, while convincing their families to participate and live healthier lifestyles. The students participating in the gardening program taste and experience vegetables that they normally do not eat. Pacal and his Sunrise staff (two others, including his daughter Maluhia Pacal) hope to convince students that healthy foods are tasty and that they can be grown in their community.

Preserving Culture through Food

Pacal believes that many of the problems that exist on the Navajo Nation, like cultural preservation efforts, unemployment, obesity, and diet-related diseases, can be solved through small-scale, home-oriented food production. As the Navajo Nation tries to preserve Navajo culture, most of the emphasis is on the language, philosophy of the beauty way, and spirituality, however, food is often neglected.¹²⁶ “The Navajo must preserve their food culture because it is a major part of their culture—it is how they connect with Mother Earth as she provides for them,” Pacal states.¹²⁷ With an unemployment rate of 48.5 percent, Pacal believes that people on the Navajo Nation should garden (as they seek employment) and contribute to their families in that manner.¹²⁸ Pacal also believes that it is easier for Native Americans in general to return and revive their traditional food systems because “they have not lost it as long as the Europeans

¹²⁶ Joe Pacal. Interview. Fort Defiance, Arizona, 4 January 2013.

¹²⁷ Ibid.

¹²⁸ Ibid.

have.”¹²⁹ In addition, he thinks that the Navajo Nation should not look to other cultures, especially overseas, to find successful agricultural techniques. (Note: Pacal is referring to the Navajo Nation President’s recent controversial visit to Israel, where he learned about their methods in agri-tech, tourism, and capital infrastructure.) “Hydroponics and aquaponics are the big talk around here—it is great technology in some instances but we should keep growing from the Earth soil and maintain our connection to the Earth—the Natives are experts of this country—they were here first,” Pacal argues.

Funding Support

Sunrise School receives funding from small foundations on the East coast and from private donations, but it is not enough for them to fully sustain themselves. To help make more profit, they hope to grow more produce to sell this year and they hope to begin building a commercial kitchen in a vacant building near their greenhouse. This kitchen will allow the Sunrise School to become a training center as they cook and prepare meals with the foods that they harvest, while teaching people in the community how to do this. The kitchen will also allow them to increase their value added agriculture by preserving foods through canning and drying, so they can store foods in the winter and sell them for a higher profit. Most of Sunrise’s harvest is given to the contributing students, but the remaining harvest is sold at the nearest certified market in the area, the Gallup Flea Market in Gallup, New Mexico. In New Mexico, the Women, Children, and Infant (WIC) food program provides food vouchers for women to spend on fresh produce from farmer’s markets.¹³⁰ Half of Sunrise School’s sales come from these vouchers, which Pacal supports as a good program “that should be established in Arizona.”¹³¹ Besides just

¹²⁹ Ibid.

¹³⁰ Ibid.

¹³¹ Ibid.

growing fruits and vegetables, Sunrise School wants to start raising a small herd of sheep and goats, to provide another possible food source. Since sheep are a huge part of Navajo culture (sheep wool is used to make traditional rugs and dresses), the Sunrise School could utilize the sheep as another profit source.

Moving Forward

Although Sunrise School deals with limitations, Pacal hopes to expand Sunrise's services in the next few years. Pacal receives help from two other staff members, his daughter, Maluhia, and plant expert, Paul Guernsey. With only three staff total, Sunrise School is understaffed, but without more funding, they cannot hire more people to work. Last year, they were not able to fully harvest their carrots and beets because they did not have enough people to help them.¹³² "It is difficult to get local people interested in this kind of work, unless they are getting paid to do it."¹³³ Even though students assist Sunrise with harvesting, they are only able to help after school and at times that is not enough. Pacal hopes to work with school administrators to incorporate agriculture, ecology, nutrition, and soil chemistry into their curriculum, so the student can learn hands-on at the Sunrise School. In the past years, the Sunrise School has been offering their programs at no charge to schools, but if they were to receive funding, they could expand their program and provide more services. He also hopes to form a partnership with Tséhootsoí Medical Center's Public Health & Nutrition department to encourage gardening and exercising as diabetes prevention. Other future plans for Sunrise School include looking into solar energy and expanding their work outside the surrounding community to help other Navajos from other parts of the Navajo Nation.

¹³² Ibid.

¹³³ Ibid.

3.4 STAR (Service to All Relations) School

The STAR (Service to All Relations) School, a charter elementary school located 30 miles east of Flagstaff, Arizona and four miles outside the southwestern corner of the Navajo Nation, is the first completely solar-powered, off-the-grid school in the United States.¹³⁴ Serving students from pre-school through 8th grade, the STAR School offers 130 Native American students a unique education that uses traditional Navajo values and philosophy as a foundation in every aspect of the children's learning. With their limited class sizes, they are able to provide individual attention to each student, ensuring that they succeed as a whole. Winner of the U.S. Department of Education's inaugural Green Ribbon Schools Award in 2012, an award that recognizes and honors schools that exemplify effective environmental efforts, this school prepares students to be leaders of sustainability.¹³⁵ In addition to learning all about solar energy, students of all ages maintain and utilize the school's various gardens and greenhouses, using traditional Navajo practices. The STAR School's vision is to serve all relations¹³⁶ while developing the character, skills, self-awareness and attitudes of their community members, as they live in balance in the world.¹³⁷ STAR School aims to deliver a superior education to young Navajo children and strives to be a successful model despite being near "a community with few jobs, no public utilities, high drop-out rates, and a history of conflict between government institutions and the people they are supposed to serve."¹³⁸

Service To All Relations

¹³⁴ This section is based on an interview with STAR School CEO/Director Dr. Mark Sorensen, STAR School, AZ, 10 January 2013.

¹³⁵ U.S. Department of Education Green Ribbon Schools, U.S. Department of Education, last modified February 20, 2013, <http://www2.ed.gov/programs/green-ribbon-schools/index.html>.

¹³⁶ A common, shared term among Native Americans referring "relations" to mean "all my relatives" or "we are all related."

¹³⁷ STAR School: Service to All Relations, last modified 2010, <http://www.starschool.org>

¹³⁸ Ibid.

Founder and director, Dr. Mark Sorensen, a non-Native who's been living on the Navajo Nation for over 30 years, founded the school in 2001, with the intention to develop a school that not only teaches students about Navajo culture, but also uses Navajo traditions and philosophy as a basis in every component of their institution. Dr. Sorensen was fed up with the approaches at schools that lacked responsiveness to sustainable cultural values and a vision for strong academic success, so he and his wife decided to make their own charter school that addressed these needs, called the STAR School. Participating in an Arizona Department of Education-funded program called "Learn and Serve," which is designed to implement service learning in schools, the STAR School works with adult volunteers, particularly Navajo elders, who share "life stories, historical accounts, traditional knowledge and more" with the students.¹³⁹ The Learn and Serve program supports the multicultural student body and allows students to learn from and connect with their community members, enabling them to carry on Navajo traditions through generations. STAR stands for "Service To All Relations," which presents the school's commitment to serve their community, relatives, and all humans (all relations) by being responsible beings that respect all that is around them. The STAR school teaches and practices four fundamental core values, referred to as "The Four R's," which are: Respect, Relationships, Responsibility, and Reasoning.¹⁴⁰ The Four R's stems from the Navajo word K'é, which means to be in good relations, with everything in your life, including your family, community, clan, tribe, and with the land, water, air, and Earth.¹⁴¹ Through K'é, Navajos believe they are interrelated with the plants, the land, Mother Earth and Father Sky, and all living creatures.¹⁴² To be in good relations with the Earth, the STAR School reduces their carbon footprint by obtaining energy from about

¹³⁹ Ibid.

¹⁴⁰ Ibid.

¹⁴¹ Navajo tradition, personal cite

¹⁴² Mark Sorensen. Interview. 10 January 2013.

100 solar panels and two wind generators.¹⁴³ In addition, the school also has a commitment to encouraging food sovereignty for their students and surrounding community members.

Recognizing that one of the largest problems on the Navajo Nation is the lack of access to healthy foods, Dr. Sorensen decided that his school had to influence the younger generations to make change. He is doing this by incorporating an extensive school garden and greenhouse program that is farmed, using traditional Navajo methods, mostly by the students. By involving students in the food growing process, the goal of the STAR School is to not only convince students that gardening is fun, but also to make them realize that growing healthy food is possible, even in a dry climate with limited water.¹⁴⁴ With the use of greenhouses and innovative rainwater irrigation, the STAR School is able to grow food and bring that food into their cafeteria for lunch meals.¹⁴⁵ The STAR School also receives in-season produce from local farmers and they are able to utilize one of their two cafeteria kitchens to wash the produce from their harvest and from the local farms, to ensure that they meet U.S. Department of Agriculture's regulations.¹⁴⁶ The school makes a strong effort to frequently include traditional Navajo foods, including corn, blue corn, beans, and squash, in the student's lunch menu. Last year, the school's students and staff hosted the 2012 Festival of Da'nest'aah (Harvest), that featured traditional Navajo stories, teachings, and a feast, to honor their local Navajo farmers and cultural teachers who provide the school with food and cultural education.¹⁴⁷ The school recently received the Native Agriculture and Food Systems Initiative (NAFSI) grant, a grant that helps Native communities strengthen their local food systems and build food security, from the First Nations

¹⁴³ STAR School: Service to All Relations, last modified 2010, <http://www.starschool.org>.

¹⁴⁴ Mark Sorensen. Interview. STAR School, 10 January 2013.

¹⁴⁵ Ibid.

¹⁴⁶ Ibid.

¹⁴⁷ Ibid.

Development Institute, that has helped the school develop their food projects and host this event.¹⁴⁸

Sovereignty through Service

Dr. Sorensen believes that having the ability and knowledge to grow food is a part of a system he describes as “Sovereignty through Service.” Throughout the Navajo Nation, there is a tremendous dependency on food coming from other places, and this is particularly obvious in schools. School food on the Navajo Nation comes from large companies in Phoenix and Albuquerque that prepare food, freeze it, and disperse it in large amounts to school kitchens, where the cafeteria staff heat it up in large warming faculties.¹⁴⁹ To combat this system, the STAR School embraces the vision of sovereignty by producing their own food and obtaining food from local farms. Dr. Sorensen believes that “when the Navajo Nation says ‘we are a sovereign nation,’ they are only as sovereign as the United States government will allow them to be,” meaning that if the Navajo Nation has to obtain sovereignty from another entity, it is not true sovereignty.¹⁵⁰ To him, true sovereignty is growing food for one another and for the community, so the Navajo people can be responsible for their own future, and not have to rely on other organizations or the U.S. government.¹⁵¹ The STAR School is a successful example of “Sovereignty through Service,” because it is able to sustainably provide for its students, while teaching them to be responsible beings, now and into the future.

Work with Urban & Environmental Policy Institute

The STAR School recently started working with the Farm to Preschool Program at the Urban & Environmental Policy Institute (UEPI), Occidental College. The Farm to Preschool

¹⁴⁸ First Nations Development Institute, Native Agriculture and Food Systems Initiative, <http://www.firstnations.org/program-nativeamericanfoodsandhealth>.

¹⁴⁹ Mark Sorensen, Interview. STAR School, 10 January 2013.

¹⁵⁰ Ibid.

¹⁵¹ Ibid.

program, started in 2009, is designed to influence early childhood eating habits by encouraging schools to purchase farm-fresh, locally grown fruits and vegetables as part of the school menu. In addition, the program provides “age- and culturally-appropriate nutrition curricula for preschoolers and their parents, to influence life-long eating patterns and improve the overall health and well-being of young children and families.”¹⁵² After the success of the initial program in Los Angeles and San Diego counties in California the program received funding from the Kresge Foundation to expand the program throughout the West and Southwestern United States. In the summer of 2012, Rosa Romero, the Farm to Preschool Program Manager, began visiting the STAR School every month to meet with the preschool staff to develop an 8 month culturally and regionally appropriate garden and nutrition curriculum to be piloted at the beginning of the next academic year in August 2013.

The school is currently partnering with the local North Leupp Family Farms, a Diné owned and operated farm located in Leupp, Arizona, about 20 miles from the school, to supply about 10 to 20 percent of the schools fresh fruits and vegetables with a goal of increasing the percentage to 40-50% in the next few years. Through encouragement from the Farm to Preschool program, the STAR School and Leupp Family Farms is currently building raised garden beds and cold frame gardens on the schools’ campus grounds. The goal of this pilot program is to prove that increasing fresh food access through the local purchasing from local farmers and the establishment of school gardens coupled with an integrated nutrition and agricultural education will influence healthy eating habits and foster a relationship to local and traditional foods.¹⁵³ The STAR School plans to expand Farm to Preschool components to all grades at the school over the

¹⁵² Farm to Preschool, Urban & Environmental Policy Institute, Occidental College, last modified 2013, <http://www.uepi.oxy.edu/our-projects/farm-to-preschool/>

¹⁵³ Rosa Romero. Interview. 26 March 2013.

next few years. The Farm to Preschool program is actively seeking funding to expand the program throughout the Navajo Nation in Northern Arizona and New Mexico.

Making Healthy Tasty

The school recognizes that it is not enough to simply produce and serve organic foods to their students and expect them to ignore or change their already existing preferences, so Dr. Sorensen and his staff constantly research creative recipes and exciting preparations to inspire the kids. Since the surrounding area is a food desert with limited access to healthy fruits and vegetables, students and their families are not exposed to a diverse variety of healthy produce. In order to visit a supermarket that carries a sufficient selection of healthy foods, families in the area have to drive anywhere from 45 minutes to an hour and half to go grocery shopping in Flagstaff, AZ. If families cannot drive to Flagstaff, the only other food source is a gas station. Therefore, the STAR School strives to introduce and provide various foods to the students, so they can influence the kid's eating habits and preferences. Additionally, the goal is for students to enjoy the food and go home and convince their relatives to eat healthier as well. With a home economics class, the kids have the opportunity to learn how to prepare these "new" healthy foods into tasty meals that they can duplicate. They are also experimenting with traditional Navajo recipes to find ways to make foods that are normally mild and bland, more flavorful and healthy.¹⁵⁴

Supportive Board

Through grants and supportive school board officers the STAR School is able to accomplish innovative, or what some would call "controversial," ideas and goals. Since the STAR School is a chapter school, they do not receive money for buildings or transportation. In

¹⁵⁴ Mark Sorensen. Interview. STAR School, 10 January 2013.

addition, they do not receive funding from the Navajo Nation. Therefore, they have to act like entrepreneurs and seek other sources of funding, like their recently received Native Agriculture and Food Systems Initiative (NAFSI) grant. Funding for grants is essential for the school to develop and maintain their sustainable and cultural standards. Instead of the community electing school board members, the STAR School appoints their school board members to form their governing board, allowing them to avoid political disputes and pick individuals that work well together.¹⁵⁵ Each charter school in Arizona has a sponsoring entity, such as the State Board of Education, the State Board for Charter Schools, or a school district, but the school's governing board makes the main school decisions.¹⁵⁶ Dr. Sorensen credits most of the school's success on the fact that the school board is appointed, because "we are able to make tough decisions and find ways to make our dreams a reality."¹⁵⁷ The STAR School's ability to function only on solar energy and to incorporate traditional Navajo philosophy into all aspects of the school would be difficult initiatives to institute at public schools, but with STAR School's charter status, they are able to accomplish their goals.

Expanding Service

Despite a few limitations that the STAR School faces, they hope to expand their facilities and continue to serve as a successful model of sustainable education. While the United States Department of Agriculture supports farm to school efforts, many safety requirements must be met, especially when schools obtain food for their students from any local farmers, ranchers, fishermen, manufacturers, and distributors. To ensure that food is safely produced and to prevent

¹⁵⁵ Ibid.

¹⁵⁶ Arizona Department of Education, Arizona Department of Education: Charter Schools, last modified 2012, <http://www.azed.gov/charter-schools/faqs/>.

¹⁵⁷ Ibid.

potential foodborne illnesses, school food service professionals and farmers must familiarize themselves with USDA's Good Agricultural Practices (GAP) and Good Handling Practices (GHP).¹⁵⁸ One of USDA's regulations requires farm produce to be properly washed and sanitized using specific facilities, but the farm produce cannot be washed in the same sink as the food that has already been checked.¹⁵⁹ Therefore, the school must utilize one of their cafeteria kitchens for washing farm produce only. This is just an example of strict regulations that the STAR School has had to address. Dr. Sorensen points out that other schools in the area do not have the option to obtain local farm produce due to this reason, because most school kitchens are only built to "heat-up" foods and not to prepare them from scratch.¹⁶⁰ One of the projects the STAR School is working on with their Native Agriculture and Food Systems Initiative (NAFSI) grant is to develop a manual that will help other rural schools, on and off the Navajo Nation, implement a farm to school program. Dr. Sorensen hopes this manual will reduce the fear and intimidation that schools feel about obtaining locally produced foods and feeding it to their children. He states that, "people are excited about the STAR School and want to see it work in other parts of the Navajo Nation, but they have to climb the mountain just like we did and they can do it."¹⁶¹ The school recently purchased land across the highway from their current location with plans to build larger greenhouses, and possibly develop a hydroponic growing system.¹⁶² By producing more food, the school can continue to develop their farm to school program and provide more foods for the community. In the future, the STAR School hopes to develop part of their old cafeteria into an internet café that will serve traditional meals prepared using their locally grown food. This

¹⁵⁸ Farm To School: Implementing Farm to School Activities, United States Department of Agriculture Food and Nutrition Service, last modified January 25, 2013, <http://www.fns.usda.gov/cnd/f2s/implementing/safety.htm>.

¹⁵⁹ Mark Sorensen. Interview. STAR School, 10 January 2013.

¹⁶⁰ *Ibid.*

¹⁶¹ *Ibid.*

¹⁶² *Ibid.*

way, they can continue their goal of “Sovereignty through Service” by providing Internet access to the community and a place to obtain a healthy meal. The STAR School aims to inspire not only other schools develop a sustainable garden and farm to school program, but to also make Navajo people realize that they have to take on responsibility to change their food system themselves.

Chapter 4

Case Study Analysis

Food Sovereignty Assessment

Black Mesa Water Coalition (BMWC), Navajo Nation Department of Agriculture (NNDA), Sunrise School for Ecological Living, and the STAR School all manage food sovereignty projects that aim to restore traditional Diné culture and improve the health and well being of the Diné people. All of the programs encourage their participants to garden and farm using traditional Diné agricultural techniques to revitalize Diné culture and improve food access on the Navajo Nation. BMWC’s Food Sovereignty Project, near the Black Mesa region of Arizona, works with community members and youth to grow traditional foods using Native seeds and they seek guidance from elders. NNDA is currently providing community garden workshops across the Navajo Nation to teach community members and youth to garden in their backyards, using a mix of traditional and modern methods, and they are working to set up school gardening projects at five schools on the Navajo Nation. The Sunrise School for Ecological Living in Fort Defiance, Arizona invites nearby student organizations and schools to their facilities to learn hands-on how to care for a garden and utilize a greenhouse to grow a large variety of foods, including traditional Diné foods. Near Flagstaff, Arizona, the STAR School incorporates Diné philosophy into every part of their school through “Sovereignty through

Service” and runs a successful farm to school program. All of the programs share a similar goal: to restore traditional Diné food systems to revitalize culture and promote healthier communities. By encouraging Navajo people to garden and consume local, healthier, traditional foods, instead of relying on commodity foods, these programs can improve the well-being of the Navajo Nation.

Focusing on Youth

Each of the four organizations focus heavily on youth development and participation, ensuring that traditional agriculture techniques and food systems are not lost to the younger generations. Black Mesa Water Coalition recruits about 10 youth to participate in hands-on training in permaculture, traditional Diné farming techniques, and native plant and tree landscaping. The Navajo Nation Department of Agriculture’s community and school gardening project plans to teach youth, from the five identified communities and schools, about how to develop gardens in their yards and at their school by combining traditional and modern gardening techniques. The Sunrise School for Ecological Living works with nearby youth organizations and schools to provide afterschool and summer gardening programs that teach students how to care for a garden that they can potentially recreate with their families at home. The STAR School teaches students from grades pre-school to 8th grade to maintain the school’s gardens and greenhouse and incorporates traditional Diné philosophy into every part of the students’ daily learning. These programs are encouraging young generations to not only learn about their heritage and the traditional lifestyles of their ancestors, but they are also actively learning how to replicate this lifestyle through hands-on learning. The youth may even influence their parents and relatives to improve their eating habits and lifestyles. By impacting the eating habits and lifestyles of young children while they develop their preferences, these programs can

help shape children into healthy community members that can positively change their future and the future of the Navajo Nation.

Incorporating Culture

Although the four organizations share the similar goal of improving food systems using traditional Diné methods, some organizations incorporate culture more effectively. During harvest, BMWC invites elders and community members to their program site to teach workshops on how to prepare traditional meals and learn about the medicinal advantages of traditional foods. NNDA plans to partner with other organizations that have cultural expertise to help lead their gardening workshops. Sunrise School relies on the expertise of their non-Native staff (who are knowledgeable to an extent about cultural methods and teaching) to teach youth about agriculture, landscaping, and food preparation; they do not invite traditional Navajo farmers or community members to teach. Additionally, BMWC and the Sunrise School grow traditional foods using Native seeds from Native Seeds/SEARCH, while NNDA mentioned that they plan to solicit seeds from this organization. However, the STAR School models the most inclusive cultural program of the four organizations, because Diné philosophy is the foundation of everything that they do. The Star School teaches Navajo culture and history in the classroom and in the gardens where they grow, harvest, and prepare traditional foods. The Diné philosophy of K'é, meaning to be in good relations, inspires the STAR School's to be committed to sustainability by running completely on solar and wind energy. In addition, the STAR School frequently invites community members and elders to be apart of the students' learning experience by sharing their cultural knowledge and lessons. Last fall, the STAR School hosted a traditional harvesting festival, which is a cultural event that is rarely celebrated in contemporary

times. The STAR School demonstrates a passion to maintain Navajo culture and traditional lifestyles.

Challenges and Barriers

The four organizations experience similar challenges and barriers that create restrictions for their food sovereignty programs. All the organizations seek grant funding from other organizations and foundations like the First Nations Development Institute's Native Agriculture and Food Systems Initiative, the Confluence Fund, and Honor the Earth. These foundations support Native American sustainability initiatives and they seek their funding from private donors. Indigenous or Native American food sovereignty advocates argue that food sovereignty projects should be completely self-reliant, so if a program received grant funding from a foundation that receives money from the federal government, then the program would not completely qualify as "sovereign." However, these grant foundations support tribes and their efforts to be self-sustaining. In fact, two of the foundations, the First Nations Develop Institute and Honor the Earth, are Native-led. The organizations seek support from foundations that promote the betterment of Native Americans, which therefore supports the organizations' food sovereignty programs. At the same time, the organizations would significantly benefit from more financial support, but seeking appropriate contributions is difficult. On the other hand, the STAR School is an exception to federal funding in this case because they need federal funding to operate as a charter school.

Both BMWC and NNDA work with Navajo farmers to help them obtain permits from the federal government, which would make them eligible to receive federal funding for farming, ranching, and grazing from USDA. The land permits are administered through the federal government, since Native American reservations are under the U.S. Department of the Interior's

Bureau of Indian Affairs, but the process is long and tedious, so many farmers choose not to bother with it. BMWC and NNDA try to assist farmers with the process and make it less of a burden on the farmer. Although farmers benefit from federal funding, the funding takes away the farmer's independence and makes them rely on the federal government for support. BMWC and NNDA instead should help farmer's seek alternative funding sources for their ranching and farming materials. That way, the farmers can improve their fields, while maintaining the food sovereignty movement.

Besides funding, another common barrier that the organizations face is working with federal government or Navajo Nation entities. BMWC, NNDA, and the STAR School all expressed difficulties that they have with United States Department of Agriculture's (USDA) food regulations and policies. BMWC stated that because of USDA's strict meat regulations, it is difficult for Navajo farmers to raise cattle and livestock that they can butcher and sell to local companies. BMWC Nutlouis mentioned that because of USDA regulations of meat, Navajo ranchers have to go through several "chains" just to sell their meat.¹⁶³ Navajo ranchers have to take their cattle to an off-reservation auction and sell it to a buyer who will take it to a larger auction where it will be bought by a meat processing company. The meat processing company will then distribute the meat products to various supermarkets or food companies. BMWC wishes that they could "bypass this middleman" process, so that Navajo farmers can sell their meat to local Navajo Nation companies. On a larger scale, NNDA stated that as a tribe, it is difficult to understand how the federal Farm Bill works and they wish they received more guidance from USDA. The STAR School also mentioned how USDA regulations complicate their farm to school program, because they have to provide additional kitchen facilities in order

¹⁶³ Robert Nutlouis. Interview. St. Michaels, Arizona, 2 January 2013.

to wash, sanitize, and prepare their local grown produce. The STAR School Director, Dr. Sorensen believes that USDA should encourage farm to school programs more, with mini grants and more support on how to meet regulations. It is interesting to note that besides NNDA, the organizations seem to be separate from the Navajo Nation government, in terms of seeking support or funding. This could be because of a lack of involvement from the Navajo Nation government or maybe the organizations do not see a need to work with the Navajo Nation government.

Effectiveness

Even though the four organizations share similar goals and operate similar programs, it is difficult to compare their effectiveness because of their individual histories and varied scopes. Black Mesa Water Coalition's food sovereignty project is only in its second year of operation, while the Sunrise School is on going into their sixth year and the STAR School is in its twelfth year. In addition, NNDA just started their community and school gardening program at the beginning of this year (2013), so it is difficult to compare it to the programs that have had a couple years to develop. The main mission and purpose of the organizations vary as well. BMWC is a grassroots organization focused on environmental justice work. NNDA is a department under the Navajo Nation government. Sunrise School is similar to afterschool program or youth center, while STAR School is an actual charter school. Furthermore, the four organizations' scopes differ because they all focus on separate communities within the Navajo Nation. BMWC focuses only on the Black Mesa region in the Western agency of the Navajo Nation. NNDA is trying to reach out to all five Navajo Nation agencies. Sunrise School only works with the Ft. Defiance and Window Rock, Arizona communities, and the STAR School serves students from the Western agency on the Navajo Nation.