Science Societies

Doing research on U.S. tribal lands: Strengthening nation-to-nation collaborations

By Amanda J. Ashworth

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Native Youth in Food and Agriculture Leadership Summit held at the Quapaw Nation in 2019. Hosted by the Indigenous Food and Agriculture Initiative, University of Arkansas, this event is focused on developing skills that will give attendees an opportunity to do a deep

dive in a particular area of food and agricultural production or policy. Photo by Amanda Ashworth, USDA-ARS.

Amanda J. Ashworth

A unique set of obstacles face Native American agricultural producers. The first is infrastructure. Tribal nations do not have the tax base for building necessary infrastructure to harness the potential of their food systems. Secondly, tribal lands have an intermixed land ownership and designation status, which as you can imagine, can create resource management and production challenges. Tribal communities have also long been excluded from government programs including conservation programming and farm bill funding; however, this has increasingly improved since the 1990s as Congress began recognizing the unique legal status of tribes, which is reflected in the 2018 farm bill having a historic number of references to tribes in the law (Johnson et al., **2018**). Climate change is also greatly impacting tribal farmers, particularly those in the southwestern U.S., as they are experiencing extreme and persistent drought, which is exacerbating poverty and food insecurity (Fuentes et al., **2021**). This is illustrated by an overall 37% poverty rate for tribal families compared with 15% nationally. On the Navajo

Reservation alone, about 40% of homes have no electricity, and about one-third of people lack running water (compared with 1% of U.S. households; Ferguson et al., **2011**). And during the pandemic, Native Americans were roughly twice as likely to die from COVID-19, and all of this has led to increased health, food, and resource scarcity on U.S. tribal lands.

These challenges, however, offer tremendous opportunities for researchers to collaborate with tribal producers, tribal colleges, and First Nation students to improve agricultural resiliency and close yield gaps on tribal lands. Here are a few items to keep in mind before initiating collaborations with tribal nations.

Tribal Nations Are Autonomous Nations

Federally recognized tribes are sovereign nations. That means any research on and with tribes must undergo prior tribal government approvals. This can mean individual property owners as well as tribal council approvals. Jennifer Carter, computational biologist and member of the Lumbee Tribe of North Carolina, suggests the following: “Don't develop a research project and bring it to the tribes. Include them in the process beforehand. Let them have a voice and a place at the table where the decisions are going to be made about the research that is taking place on their lands.”

Tribal Governments Own Their Data

Any data generated during a given research project on U.S. tribal lands is owned by the tribe and should be shared and approved prior to publication and use.

To strengthen food security, the U.S. Congress included tribal colleges and universities as part of the land grant system in 1994 with the passing of the Equity in Education, Land Grant Status Act of 1994. Congress requires a memorandum of agreement with these schools to ensure their equitable access to services and resources.

Tribal Lands Have Religious and Spiritual Significance

Tribal governments are the standing authority on Indian reservations. Researchers should show respect and obey the laws and government of the host community and be aware of traditional ecological knowledge and potential religious customs of the land in which they are working.

Refrain from removing anything off tribal lands, including plants that could be used for ceremonies or medicinal use or food or cultural artifacts. You could be in violation of tribal as well as federal laws.

Dr. Michael Kotutwa Johnson, a member of the Hopi Tribe and Assistant Specialist at the University of Arizona, has two additional suggestions to researchers interested in collaborating with tribes: (1) it takes an extraordinary amount of time to get required research approvals such as a council resolution (varies from tribe-to-tribe); and (2) proper technical assistance will need to be provided to tribes (tribes do not often have “shovel-ready projects”). To overcome these two challenges, he suggests making contact early on during the research-planning phase and including people at the top like tribal chairman. Based on these two barriers, Dr. Johnson says, “When working with tribes, establishing a relationship first is the key, followed by patience. Do not be in a rush.”

As we reflect on Native American Heritage Month in November, there are many collaborative opportunities and research needs on U.S. tribal nations that can be filled by Society members. However, mutually beneficial research, conditions and use of data, privacy issues, and government approvals should be taken into consideration.

This column is brought to you by the Early Career Members Committee (ECMC), which serves members beginning their careers—new professionals and graduate students in agronomy, crop, soil, and environmental sciences. The ECMC consists of members from each of the three Societies who serve three-year terms. Learn more at **www.crops.org/membership/early-career**.

Native American and Alaska Native Scientists and Allies Specialty Group

A new specialty group has been formed within the Societies—Native American and Alaska Native Scientists and Allies (NAANSA). The group is for students and professionals in academia, agriculture, and extension, specifically Indigenous individuals and allies. Anyone interested in participating can join NAANSA at by visiting **www.agronomy.org/my-account/specialty-and-working-groups** or emailing Jessica Davis at jessica.davis@colostate.edu.

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Fuentes, B., Ashworth, A.J., Ngunjiri, M., & Owens, P.R. (2021). Mapping soil properties to advance the state of spatial soil information for greater food security on US Tribal Lands. *Frontiers in Soil Science*, **1**, 95386. **https://doi.org/10.3389/fsoil.2021.695386**

Johnson, M.K., Lien, A.M., Sherman, N.R., & López-Hoffman, L. (2018). Barriers to PES programs in Indigenous communities: A lesson in land tenure insecurity from the Hopi Indian reservation. *Ecosystem Services*, **32**, 62–69.

https://doi.org/10.1016/j.ecoser.2018.05.009

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