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COMMENTARY

**Intertribal Agriculture Council  
Perspectives on the History and  
Current Status of American Indian  
Agriculture**

**GREGORY E. SMITMAN**

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As the American West has been glamorized in book and film, American Indians have frequently been portrayed as primitive hunter-gathers, living off wild meat. The dietary protein supplied by hunting activities was critically important to many Native cultures, but the perception that early Americans ate only meat, did not cultivate crops, had no domesticated livestock, had no weaving or spinning skills, and were nomadic is simply untrue.

Five hundred years ago the land we now call the United States of America was fully occupied by diverse peoples who are the ancestors of today's American Indians. These Americans

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were prosperous in their various cultures and supported established towns and villages through well-developed agriculture.

In today's global economy, Native Americans are credited by the United States Department of Agriculture with cultivating and perfecting food crops which provide more than 52 percent of all foods consumed by humans worldwide. Contrary to popular belief, these "modern" foods were not merely gathered, they were specifically bred and cultivated for widely varying purposes and climates. A few examples of these crops and their development may help elucidate the importance of this sometimes overlooked fact.

In Indian cultures, three crops were of primary importance—corn, squash, and beans. The Iroquois referred to these crops as the Three Sisters, and this term is still encountered today. These three crops can be examined as a starting point to understanding Native American agricultural development and practice.

Important in understanding the overall contribution of the early Americans to agriculture is knowing that their crops were purposely cultivated and selectively bred into many varieties and forms. Corn was fully developed into the various sweet and flour corns, dent and flint, blue corn, multicolored ceremonial corn, and even popcorn long before the first Europeans arrived in North America. In fact, corn had been cultivated to such an extent by American Indians that no wild variety has ever been found. Each of the several cultivated varieties of corn was also developed into specific eco-types that could flourish in the hot humid climates of the Southeast, the cold and short season climates of the Northeast, and the hot arid climate of the desert Southwest, a feat which modern geneticists are trying to imitate with other crops. Perhaps as important as the engineering for different climates is the fact that this single crop was cultivated to serve several dietary functions. Some varieties were specifically used as vegetables, eaten fresh. Other varieties were grown specifically to be dried for long-term storage and rehydrated later. Several varieties were created specifically as cereal grains, to be ground into flour for baking bread, cakes, and pies. At least one traditional variety is used as a primary ingredient in soup.

A similar history exists for beans, which modern society tends to forget is an American crop. Today, we hear of Anasazi beans or other historically cultivated beans and tend to think of these as the Indian bean. However, the majority of commer-

cially important beans originated with American Indians. Snap beans, kidney beans, lima beans, string beans, pinto beans, navy beans, black beans, and so forth were all bred and cultivated by American Indians and sent to the old world, where they replaced the Roman bean as the primary dietary bean. As is true for corn, these cultivars have no wild counterparts. This crop was also bred specifically to grow in the wildly variable climates of North America. Like corn, beans were used both as a fresh vegetable and dried for storage; were processed into meal, soups, and paste; and were mixed with other crops.

Some archeologists report that squash was the first crop cultivated in America, dating from more than 7,000 years ago. Like corn, the squash cultivated from members of the gourd family have no counterparts on other continents. All versions of squash, like pumpkin, hubbard, acorn, and the summer squashes—zucchini, crooked neck, butternut—are the product of selective breeding by American Indians. Also like corn and beans, specific cultivars were created to fit diverse climates and were bred to be stored for extended periods. While summer squash is eaten fresh, winter squash can be kept for months with minimal loss of food value, providing fresh vegetable nutrition in the late winter months when other cultures of the time suffered from severe malnutrition.

The joint planting of corn, squash, and beans in the traditional hill method provided numerous benefits. The corn provided shade, protection from the drying wind, and a trellis, while the beans provided the critical soil nitrogen source. The large-leafed squash provided a shade and mulch effect to reduce evaporation from the soil surface. Growing the three plants together maximized production per unit area; minimized the work involved in preparing the soil, fertilizing, and transporting water when irrigation was necessary; and effectively eliminated any soil losses through erosion.

From a dietary standpoint, corn is strong in starch and oils but weak in protein. Beans have little oil content but do have a strong protein component. Squash contributes carbohydrates, fiber, and a wealth of vitamins and minerals. Any one of these crops eaten by itself will result in dietary deficiencies, but eaten together they contribute to well-balanced nutrition.

In addition to the three sisters, there is a long list of crops cultivated and perfected by Native Americans, some of which now make up the bulk of the world diet and some of which have passed out of common use. To focus on American Indian

contributions, imagine Italian cuisine if the tomato had not been introduced to Europeans, or Mediterranean or Asian cuisine without the benefit of the various peppers. In the past two centuries, many tomato and pepper strains originated in America have been bred and adapted to special cultivation practices and dietary tastes, and have picked up international names like Roma tomatoes or Thai peppers. However, all the tomatoes and peppers in the world today are descendants of the many American Indian cultivars created well before first contact with Europeans. In addition to vegetable crops, similar illustrations can be based on grain crops, mast crops, root crops, fruits and berries, or even tapped tree sap for food and industrial uses.

Food wasn't the only purpose of Native American agriculture. Like today's agriculture, fiber was an important crop for Native Americans. The most common fiber crop was cotton, and archeological records and tribal traditions indicate that cotton was planted in diverse areas of the United States more than 4,000 years ago. Interestingly, Native cultures in North America refined the art of spinning and weaving cotton several millennium prior to European contact. The Museum at Woolaroc in Oklahoma features an example of Native American lace taken from a Mississippian culture burial mound. This fragment of lace, dated at 1,200 years old, rivals in craftsmanship and intricacy the more famous Irish Lace created several centuries later.

In addition to crop development, American Indians have well-documented histories in advancing agriculture techniques, for instance, the large-scale irrigation works of the Hottokum and Anasazi tribes in the desert Southwest. In the region of modern-day Phoenix, the Hottokum constructed canal works which rival the old-world irrigation projects in the Tigris and Euphrates valleys, extending 150 miles or more. Dikes, turnouts, and weirs were all incorporated into these earliest American irrigation works, dated by some estimates from the time of Christ. Remarkably, no one currently knows how the engineers of these works were able to lay out the canals, set the grades, or even move the vast quantities of soil and rock necessary, but the water-control system in modern Phoenix is built on these ancient American Indian marvels. American Indian irrigation was common along most river systems from California to the East Coast, and in other areas was conducted by carrying water in watertight baskets to irrigate crop hills and small plots.

Finally, school children still learn that one of the remarkable attributes of American Indian agriculture was the planting of a fish in the crop hill to serve as fertilizer. This practice helped fuel the green revolution several centuries later.

In short, the American Indians had a full and prosperous agriculture economy. Agriculture, not war or primitive hunter-gatherer societies, supported the well-established trade routes extending from the Ohio River valley into Central America, and from the irrigation projects of the Southwest into the Pacific Northwest.

When the American Indians welcomed large numbers of immigrants, beginning about four hundred years ago, one of the first contributions they made to their new neighbors was sharing their crops and, more importantly, sharing their skills in cultivating these crops. To dramatize television shows, movies, books, and other forms of entertainment, it is frequently portrayed that a warlike people occupied this land and that the colonists had to be ever vigilant to protect themselves from rampaging savages. But written history and colonist journals of that time do not support this portrayal. The early European histories of colonial America are ripe with examples of European colonies that credited their very survival to the agricultural skills of the American Indians. In Jamestown, Plymouth Rock, and the earliest Spanish expeditions, the survival of the colonists and expedition members was made possible only by the largesse of local American Indian communities.

Unfortunately, the two cultures were not completely compatible, and clashes soon marked much of their interaction. Numerous reasons can be given for the conflicts, but for purposes of this discussion, two reasons seem to override all others. First, the primary purpose of the colonies was to gather the valuable resources of North America and export them to their European sponsors. Important early exports included crops as well as timber, furs, feathers, game meat, and leather. The large-scale European harvesting and shipping of these resources must have been offensive to the American Indian people whose belief system required that they limit their harvest to subsistence levels and accumulate only enough to cover their needs in the winter months.

A second important point that is frequently overlooked in the development of the European-American Indian relationship is the fact that during the first three hundred years of exploration and colonization, the various European empires

were continuously at war with one another. England was at war with Spain fairly constantly. France was generally at war with England, but at times sided with England against Spain. Similarly, Spain sometimes sided with England against France, notably during the Napoleonic wars. And throughout the seventeenth and eighteenth and into the nineteenth centuries, these European wars translated into wars in the American colonies. Because the vast wealth of the European empires derived largely from the exported goods of their colonies and because most of the exportable goods in America were the natural resources of the tribes, raiding tribal storehouses for food, furs, leather, and other trade goods was a lucrative option for European combatants. To pursue this option and protect their own colonies, the Crowns of Europe made treaties with Native American tribes in their spheres of influence to bolster, or in some cases replace, their fighting forces in America. Tribes were willing to enter into treaties to gain protection from marauding armies of opposing European empires. These treaties took various forms but mostly had two purposes: to gain military allies and to forge exclusive trade alliances.

During these centuries of ongoing war, tribes who were closely aligned with one European empire would be sent to raid colonies or allies of the opposing European empire. The taking of scalps was not an American Indian tradition; rather it was required of American Indian warriors by their French commanders to prove their battle reports against the British allies. Deadly warfare involving American Indian warriors and European colonists contributed to the "savage" stories of the period on both sides, further dissipating the goodwill which the tribes had initially exhibited toward their new neighbors. Equally important, the treaties between tribes and the Europeans meant that tribes fought on different sides during the wars, and those who fought for the losers were not soon forgiven by the victors.

The wholesale exportation of natural resources and the period of war between the European Colonies, coupled with the influx of infectious diseases which took an enormous toll on many tribes, set in motion the large-scale migration of tribes. As tribes fled the disease and warfare of the colonies, a war of aggression was begun that impacted even tribes which had had no contact with the Europeans. One possible reason why the refugee tribes were successful in displacing the resident tribes is that, through their contacts with Europeans, they

had acquired iron implements of war which gave them a technological edge. So, although European colonies were largely limited to the coastlines and waterways, even inland tribes having no European contact felt the pressures and effects of European war, colonization, and disease, and began to be displaced from their traditional resource areas.

However, only a few real changes in American Indian agricultural practices occurred during the three centuries following first contact with Europeans. Just as Europeans exported and adopted American crops, tribes in close proximity to European colonies or missions adopted European crops and expanded their trade partners to include Europeans. By the late seventeenth century, southwestern tribes like the Hopi and Navajo had begun to tend flocks of Spanish sheep, weave wool blankets, and spin wool in addition to their traditional cultivation. Cattle herds were developed and maintained by Pima and Papago people in that region, following their introduction by Spanish explorers and missionaries. Similarly, records show that as early as 1717 the Creeks on the East Coast had adopted cattle as a cash crop and were maintaining a lucrative trade in cattle with the Spanish.

The real major change in American Indian agriculture began when the English Colonies determined to cut their ties with England, and subsequently to acquire the holdings of the other European powers. This change may be attributed to the difference between the purposes of the European colonies and the purpose of the new United States. The colonies had as their primary function the gathering and exporting of the wealth of the country. The newly formed United States had as its primary purpose the occupation and "settlement" of its territories.

Conflict emerged on a greater scale as European occupation of land superseded the previous desire of extracting wealth. American Indians, who had occupied the North American continent for many thousands of years, had had unlimited time to find and occupy the most productive land with the best climate, best water, easiest transportation routes, and the most readily available resources. Naturally these were the places where tribes had settled and built their towns and villages and cultivated their crops. Unfortunately, these lands were also the lands most coveted by the new Americans. The observable federal policy toward American Indians, which emerged early in United States history, has been one of seizing and occupying the most productive land. This overriding policy has been the



defining element in the relationship between the American Indians and the United States, and the major destructive force for American Indian agriculture.

The period of forced removal, treaty renegotiation, reservation reduction, and seizure of Native lands is well documented in American history and need not be repeated here. It must be noted, however, that from an agricultural viewpoint the wholesale relocation of tribes not only reduced the land base, but moved whole cultures away from the resources which were key to their survival. River Indians dependent on fisheries for protein and floodplains for crop production were moved to Plains reservations, which had neither resource. Similarly, established farming tribes were moved to arid lands without water. Critical hunting grounds were placed off-limits to the American Indians whose very survival depended upon the resources contained in those traditional homelands.

More importantly, five hundred years after first contact with Europeans, it is still difficult to overestimate the importance of agriculture to modern American Indian communities. According to Bureau of Indian Affairs (BIA) reports, farming and ranching serve as the primary sources of income and employment for American Indians on reservations. Currently, there remain 54.4 million acres of American Indian-owned land in the contiguous United States, of which more than 48 million acres are used for agricultural production. In 1984, the BIA reported that American Indian agricultural production was valued at almost two and half times the value of all oil and gas income and nine times the value of all forest products on American Indian lands. In 1989 the BIA reported to the USDA American Indian Task Force that there were 14,747 American Indian cattle ranchers, 136,027 sheep and goat ranchers, and 11,815 crop farmers, amounting to 162,589 American Indian families engaged in commercial agriculture. In these reports, the BIA also indicates that the agriculture sector is by far the largest single employer in and the greatest single contributor to reservation economies.

Reservation agriculture production parallels off-reservation agriculture in kind, if not in scale. The vast majority of Indian farmers and ranchers are small family farmers who earn the majority of their livelihood from agriculture. Primary crops include livestock and small grains, grown using the same techniques as is common throughout the country. Traditional crops are frequently limited to the small family plots which are now

called vegetable gardens, although traditional communal village gardens are still common in some areas, notably among the Pueblos of New Mexico. There are also large tribal enterprise farms operated as one means of gaining income to support governmental function. Examples of diversified tribal enterprises include the cattle, citrus, peppers, and other crops grown by the Seminole reservations in Florida; the cotton, citrus, alfalfa, olives, and nuts produced by the Pima Indians of Gila River Farms; and the wild rice and cranberry operations of the Chippewa bands of Minnesota and Wisconsin.

Unfortunately, and despite the economic and social importance of agriculture to reservation communities, Indian reservations are listed by demographers as the poorest segment of American society, with the lowest per-capita income and highest unemployment rates. The next question must be, why? It cannot be argued that modern Indian reservations are located in the most productive agriculture areas, but with 48 million acres in agriculture production why do these rural American Indian communities record such low economic activity levels? The answer lies in the continuing United States policy of displacing American Indians so that others can occupy and use their land. According to the BIA, in 1986 (the latest year for which data were available) more than 65 percent of Indian-owned farmland was leased, under federal policies for Indian "trust" lands, to non-Indians. A similar situation exists for grazing lands, although in that case the BIA reports that about two-thirds of the land is used by American Indians and the other third is leased to non-Indians. The result of long-standing federal policies and procedures is that most American Indians on reservations do not truly benefit from the land they own, either individually or communally. Rather, many are marginalized as "absentee" landlords who receive small lease payments rather than the value of production off their lands.

In 1987, American Indian agriculture was basically unheard of outside reservation boundaries. The U.S. Government Accounting Office reported several hundred thousand acres of Indian trust lands in danger of foreclosure by the Farmers Home Administration. American Indian farmers and ranchers were five times more likely to go bankrupt than the national average. American Indian producers were categorically excluded from all federal emergency aid programs and most USDA farm commodity or conservation programs. The BIA, with other priorities, had continuously deemphasized its agri-

culture and irrigation programs. In this bleak atmosphere the Intertribal Agriculture Council (IAC) was founded by eighty-seven tribes, and has undertaken the challenge of reversing these trends.

The mission of the IAC is to seek change in American Indian agriculture for the benefit of American Indian people by promoting the Indian use of Indian resources. In the years since its establishment, the IAC has undertaken numerous projects aimed at reversing the trends and fostering agriculture production as one means of attacking the chronically undeveloped economies of most Indian reservations. The first undertaking of the IAC was to identify the problems which affect American Indian agriculture. Using published reports on Indian reservation economic development, a series of consultants knowledgeable about various facets of Indian resources, and free-wheeling debate, the IAC members developed a consensus of the primary barriers to success in American Indian agriculture.

All the subsequently identified barriers could be lumped under the single heading "lack of stability" or listed as contributors to that overall problem. Stability in the reservation agriculture community is lacking due to land-tenure issues, poor access to services, no access to capital, and a deteriorating future. The identified lack of stability also creates problems in finding solutions. If a specific reservation had a stable agriculture community it would be possible to work within that group to improve opportunities for young people, coordinate efforts at change, and improve service delivery. However, on many reservations, this year's agriculture leaders may be next year's unemployed, and no firm foundation exists on which to build. A stable, long-term, and productive agriculture base would provide the internal sources of income and cash flow to begin to internalize a reservation economy as well as provide a focal point for eliminating barriers and providing hope and a future for the next generation.

Land tenure is listed as a critical problem because American Indian producers generally do not own and cannot acquire the land base which produces their commercial crops. Even where they do have outright ownership, the federal trust status of reservation land creates major burdens and involves the federal government in all normal land transactions. Therefore, unlike non-Indian agriculture producers, Indians have in effect no land equity as the financial foundation of their farms or ranches, and they are unable to build equity. The most common

scenario, wherein Indian farms or ranches are based on leasehold interests, is hampered by the five-year nonrenewable term of federal leases, lack of an equity position by the lessee, and the federal requirement that all leases be advertised on the open market to the highest bidder with a specific prohibition against offering a preference to American Indian residents of the reservation. American Indian farmers and ranchers must bid against all comers at five-year intervals to maintain possession of their farms, and generally cannot develop equity in these farms for use in collateral lending.

Another barrier is the isolation of American Indian farmers and ranchers from traditional sources of service and support. Indian tribes, producers, and society at large have viewed the BIA as the single source for Indian access to federal programs. In fact, until 1979, joint U.S. Department of Agriculture and Department of Interior policy specifically eliminated American Indian farmers and ranchers on reservations from federal farm programs. Despite many improvements since the 1990 farm bill required the Department of Agriculture to include American Indians in farm programs, even today the Agriculture Census refuses to count the individual farms on Indian reservations. Consequently, the data on Native American agriculture is fragmentary at best, and this article quotes heavily from somewhat dated BIA reports.

The BIA has the mission of protecting the Indian-owned lands from waste or abuse and of obtaining the highest possible lease income for landowners. This is primarily a regulatory function, and the BIA has no programs comparable to USDA conservation or farm programs. The result is that Indian farmers and ranchers have been excluded from mainstream agricultural programs since the inception of the Department of Agriculture. Indian use of Indian lands has decreased in favor of custodial leases to non-Indians who have little incentive to develop or protect the land they lease for short periods of time. Tribes are unable to exert legal authority over these non-Indians on the reservations, which allows a level of anarchy to enter the reservation land-use community.

Every report on Indian agriculture or American Indian economic development has also identified a lack of capital as a key barrier to reservation development. American Indian agriculture operations tend to be severely undercapitalized. This is due largely to the lack of equity in the land for use as collateral, and may reflect a hesitancy on the part of commercial

lenders to participate on reservations where they have little experience and a great deal of misinformation concerning jurisdictional issues.

The future generations of American Indian agriculture producers also face deteriorating conditions if changes are not made. As is true for American agriculture in general, American Indian producers tend to be middle-aged or older, with few new young farmers or ranchers entering the field. The problem is compounded by the same concentration felt everywhere in the agriculture community. As small operators retire or otherwise leave agriculture, their farmstead tends to be leased to non-Indians through advertisement, resulting in smaller units being consolidated into larger ones, further increasing the barriers to young people starting out.

As important as the five barriers listed are those which are not listed. Discussed and discarded were the old standards such as cultural differences and communication problems. This is because there is no meaningful "cultural" difference between an American Indian cattle rancher and a non-Indian cattle rancher which would in any way impede participation in the national agriculture economy.

The IAC has taken several actions to address the identified barriers. To break down the historic isolation, IAC turned to the Congress and the USDA. In the 1990 farm bill, reservation residents are specifically included for USDA programs. Twenty-eight reservations now have "cooperative extension agents" providing a liaison with the USDA and land grant universities, and conducting 4-H programs for reservation youth. Both the Natural Resource Conservation Service and the Farm Service Agency have placed offices on some reservations to begin to provide services. Just as important as service delivery is the education of the extension agents and USDA employees who will become the experts on American Indian agriculture needs and opportunities in the next few years. Additionally, the IAC has opened five regional offices specifically to assist American Indian producers and USDA service providers in opening lines of communication and tailoring programs to local needs.

To attack land tenure and stability issues, the IAC worked with Congress and the BIA to draft new statutory provisions for the leasing of reservation lands, which includes certain renewal and preference rights as well as empowering tribes to enforce land-use ordinances on all reservation lands. These provisions are contained in the American Indian Agriculture

Resources Management Act of 1993, which specifically repeals the former federal priority of leasing American Indian assets for short-term gain, rather than using these assets to build communities and internal economies. Full implementation of this act has not yet occurred, but it lays the foundation for a stable and productive reservation agriculture community.

The lack of access to credit remains a tough issue. During the past ten years the IAC has developed model tribal credit unions and worked with numerous financial institutions to inform them of reservation issues. More importantly, the IAC has put in place a series of Indian farm advocates who can help American Indian producers with the various cash-flow projections and application forms necessary to obtain adequate commercial credit. Efforts to find and cultivate alternative sources of agriculture credit continue as one primary purpose of the IAC.

In order to address the future and create an interest in continuing agriculture production into the coming generations, the IAC has worked to implement reservation 4-H programs through the cooperative extension service, has developed or participated in various youth resource camps, and has developed a scholarship program which helps support American Indian students seeking degrees in agriculture resource fields.

For thousands of years, American Indians have been leaders in the agriculture field. Their contributions to world diet and improved agriculture production techniques is unquestioned. Recent history has created some problems for this element of American society, but the tide is turning. Within the next decade or two we can foresee agriculture fulfilling its potential as a primary contributor to the economic and cultural rebirth of American Indian reservations.