

INSTITUTIONS AND AMERICAN INDIAN FARMERS -- INDIAN LAND  
TENURE AND FARMING BEFORE THE DAWES ACT<sup>1</sup>

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**ABSTRACT:** The failure of American Indians to become farmers in the twentieth century despite allotment and other federal policies designed to encourage farming is often blamed on the incompatibility of Indian institutions, including land tenure, with the requirements of settled farming. This paper tests this hypothesis by examining the nature of Indian land tenure and the division of labor between men and women in farming before and after the dates that Indians were placed on reservations.

Traditional Indian land tenures reflected the relative prices and environment in which they lived. For example, eastern agricultural tribes recognized a person's use right for land which was tilled but no one had a claim to land which was not cultivated. In the Southwest, where good land was scarce, agricultural tribes recognized rights to land even when it was not cultivated. Farming was usually done by women, with men specializing in hunting. Once tribes were placed on reservations, individual use rights to land were recognized even among nomadic tribes which had not done so previously. Census data for 1900 show that this system of land tenure allowed a number of Indians to make progress as small scale subsistence farmers prior to the implementation of the Dawes Act and that men did learn to farm. While Indians were beginning to farm prior to allotment, as I discuss in other work, Indian farming was actually discouraged by federal policies nominally designed to encourage farming and these partly account for the failure of Indian farmers after 1900.

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The official policy of the federal government throughout much of the nineteenth and early twentieth centuries was to promote farming by Indians. Whereas for some this was simply a rationale to justify the taking of Indian lands, transforming Indians into self-sufficient farmers was a sincere goal to some important thinkers and policy makers. This position was expressed by President Thomas Jefferson as early as 1803 and prevailed at least until the Meriam Report of 1928.<sup>2</sup> Policy makers generally saw agriculture as the best means to allow Indians to become self-supporting given their reduced land base.

Both in the 1880s and today, scholars and policy makers were concerned that it would be difficult for Indians to become farmers. Two concerns centered on the possibility that Indian institutions would hinder the success of Indian farmers. The first arose from the belief, shared by most reformers in the 1880s, that Indian tribes did not recognize individual rights to land. Instead, the reformers believed that Indians held land in the form of what economists today call a common, and as long as it was the reformers were convinced that Indians would neither succeed as farmers nor assimilate into white society. Senator Dawes expressed this belief when he concluded about the Five Civilized Tribes that "Till this people will consent to give up their lands, and divide them among their citizens so that each can own the land he cultivates, they will not make much progress." (Cited in Otis, pp. 10-11.)

The second concern, often expressed by modern scholars, is that it would have been nearly impossible for Indian institutions to change rapidly enough for Indians to successfully learn to farm in the time frame specified by policy makers. Indeed the consensus of modern scholars is that efforts to teach Indians to farm were fundamentally in error because Indians simply lacked the necessary cultural background

2. See "An Opinion of Thomas Jefferson," reprinted in Spicer, p. 227 and the Meriam Report, p. 488-500.

to become farmers. Thus Hurt, in the most recent comprehensive survey of Indian farming concludes that ". . . government policy designed to fashion the Indians into subsistence farmers required too great a cultural change for most of them. even under the best of circumstances." (Hurt, p. 233) Hurt also stresses the economic constraints faced by Indians including the poor quality of farm lands available to many tribes and the low return to subsistence farming practiced by Indians. But Indian culture is presented as an important and slow to change factor which made it difficult for Indians to become farmers. Similarly a recent paper in the Journal of Economic History finds that efforts to promote farming ". . . flew in the face of almost all . . . Indian values." (Novak, p. 641) More broadly, Indians are sometimes cited as an example of a people who have low per capita incomes in part because their cultural attitudes conflict with "the demands of a highly technocratic, rationalistic society." (Kaufman, p. 26)

Further, government policy was to make Indian men into farmers. This was the norm of the household division of labor in Anglo-American society. But in most tribes outside the Southwest, agriculture was women's work. Josephy, for example, concludes that one of the reasons for demoralization among plains Indians was that "The hunters and warriors, stripped of their dignity and self-respect, were given few *manly* diversions, and many of them, *losing the respect of the women and children*, sank into an indolence that withered their souls and turned them, ultimately, to alcohol as an escape and violence for an outlet for their hurts." (Josephy, p. 350) (emphasis added) Similarly, Novak concludes that "Sex roles were also strictly defined. . . in general men hunted and women farmed." (p. 641)

The argument developed in the following is that these concerns are incorrect in two important ways. The generalization that Indians lacked any form of private property rights is wrong and based on a misreading of Indian institutions. Indeed, indigenous institutions were approximately optimal solutions to the economic problems

faced by each tribe. Second, these institutions could be and were modified when the circumstances faced by Indians -- relative prices -- changed.

Two larger issues motivate this investigation of Indian institutions. First, if institutions matter and constrained Indian efforts to use their available resources, we need a clear understanding of which institutions mattered and how they mattered if we are to understand the interaction of culture and material economic success. The second issue, which is related to the first, is whether institutions changed in a roughly efficient manner in response to dramatic changes in opportunities.

This essay extends my previous work (1981a,b) to examine how pre-reservation Indian land tenure and other arrangements influenced the success or failure of Indian farming before allotment under the Dawes Act. Two main questions are examined: (1) what was the nature of Indian agricultural traditions, especially land tenure, but also the household division of labor, before allotment; (2) were Indian institutions sufficiently flexible to allow any tribes who were not already farmers to succeed in the late nineteenth century as subsistence farmers?

### **Indian Land Tenure Before the Formation of Reservations.**

Reformers in the 1880s did not believe that Indians had the necessary institutional background for settled agriculture or that Indians were capable of establishing the "proper" set of institutions themselves, reformers in the nineteenth century tried to push Indians to become farmers and at the same time assimilate American values by imposing a modified version of Anglo-American property right on them through the Dawes Act of 1887. The result was a heavily restricted and inefficient form of property rights.<sup>3</sup> These policies rested on a misreading by the

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3. See Carlson, 1981, a, b, for a discussion of the Dawes Act and its impact.

reformers of the nature of existing institutions devised by Indians to limit access to resources and organize their use. In fact neither the reformers or their critics in the 1880s and 1890s had a clear understanding of how Indian land tenure worked before allotment. According to D.S. Otis "Friends and enemies of allotment ... both were prone to use the word "communism" in a loose sense in describing Indian enterprise. It was in the main an inaccurate term." (Otis, p. 11.)

Today relatively few Indians make their living as farmers and the years following allotment saw a decline in the land base available to Indians. The failure of Indian farmers in the twentieth century is compelling evidence to many that Indian institutions were a major barrier to Indian farming. But the failure of Indian farming after the Dawes Act does not necessarily mean that Indians could not have become farmers under a different set of circumstances. Since they did not understand the richness of Indian institutions for controlling access to and use of resources, the reformers who were the guiding force behind the passage of the Dawes Act of 1887 simply did not allow Indians to make use of institutions that might have worked on reservations.

### **Property Rights and Indian Farming**

The modern theory of property rights provides a useful starting point for examining Indian land tenure. (See for example, Demsetz, Anderson and Hill, and Libecap). An implication of this approach is that the relative costs and benefits of different types of institutions depend upon relative prices. For example, consider possible land tenure systems as a continuum: ranging from free access to all comers; through limiting access to members of a group but excluding all others, to having centralized control over the use of the asset, to defining and enforcing individual rights to use the asset.

The costs and benefits from each arrangement differ. Allowing free access is the cheapest to enforce, but provides little incentive to use a resource wisely, while defining and enforcing individual rights to land can be expensive, but also gives individuals incentives to conserve scarce resources.<sup>4</sup> The conclusion of the property rights approach is that different forms of land tenure are efficient given different relative scarcities and, if institutions are to remain economically efficient, they must change as conditions change. There is no guarantee, of course, that a society will choose an efficient set of rules or that it will change its rules in an efficient manner to reflect changes in relative prices. This is an empirical question.<sup>5</sup>

### **The Household Division of Labor and Other Institutions**

In addition to land tenure, another important set of institutions to consider is the division of labor within the family. Recent research in the theory of the household has emphasized that an efficient allocation of labor within a family also depends on relative costs and benefits. (See Killingsworth and Heckman, Gronau, Ehrenberg and Smith, ch. 7)

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4. Demsetz first explicitly developed the theory that property rights depend upon relative prices and illustrated the point by citing the evolution of rights to hunting territories among the Mantagnes Indians of the Labrador Peninsula. Demsetz' argument stresses the advantages of individual property rights, where enforcement costs are not too large. This argument has great force for land used in agriculture where there are few advantages to team production. Posner argues that collective institutions among preliterate societies may have other functions, such as risk reduction. Bailey in a recent paper concludes that there are "a striking set of regularities in aboriginal rights structures..." (p. 4) Sometimes he finds individual rights and sometimes a common rights, depending on the type of property and the nature of the activity. He concludes that in general these rights were "approximately optimal." Agricultural land was typically held by individuals, however, as the Demsetz model predicts.

5. North concludes that a tribal society will have a particularly hard time changing institutions in response to a change in relative prices, since change may be seen a threat to group survival. Since Indians faced many externally imposed institutional changes, North's case may not apply to Indians in the late nineteenth century, but his argument does show why institutions may not change even in the face of large changes in relative prices. See North, p. 123.

For most tribes outside the southwest, tilling the soil and gathering plants was largely the province of women. Women tended the fields and looked after the children while men wandered more widely to hunt and were responsible for military activities. This may well have been an efficient division of labor in economies in which both hunting and planting or hunting and gathering were important sources of food. In some tribes women of the same kinship group lived together and a man joined his wife's kinship group upon marriage. In some cases farming was conducted by women in the same kinship group as a collective endeavor.

Since agriculture was usually regarded as women's work, it is possible that a man's identity and role in the family could have been threatened by his tilling the soil. For example, David Lewis (p. 145) reports that Northern Utes men resisted early efforts to make them try farming since ". . . digging in the earth was the subsistence province of women."

A common feature of the reservations to which Indians were confined beginning in the 1850s was that there was too little land for Indians to be self supporting using traditional techniques. In particular, activities which were the province of men, such as hunting, were greatly restricted. Thus it would make sense for Indians to readjust their allocation of labor to have men do more farming or ranching. But if Indian men were to become farmers, the division of labor within the family and all of the related attitudes and relationships -- which may have been logical at one time -- would also have to change. Whether or not Indians made such adjustments is another empirical question.

### **Land Tenure and the Household Division of Labor Before Allotment**

To assess Indian institutions and their suitability to farming, it is important to understand the nature of Indian institutions both before and after the creation of

reservations and to examine closely how Indians fared as farmers at different times. Although there was a wide variety of these institutions, land tenure arrangements can usefully be categorized into a few types. According to Linton ". . . the linkage between ecologies and basic economies in North America is close enough to make a description of land tenure by culture areas fairly valid." (p. 44) This is what we would expect where tribes adopted institutions suited to their environment.

### **Eastern Agricultural Peoples**

One of the most important groups in a study of Indian farming before allotment are eastern agricultural tribes. These include tribes that lived in what is today the northeastern and southeastern U.S. as well as tribes scattered up the Missouri River Valley. Tribes in these areas that practiced farming had some elements of land tenure and agriculture in common. By and large farming was done by women. Land generally belonged to the tribe, with a usufructory right being held by the individual family or kinship group.

Because of external military threats, the Iroquois who practiced settled agriculture lived in central villages. Fields were farmed by lineage groups of women who resided in the same long house under the direction of the oldest woman, the lineage head. Shirking was constrained by the fact that work was done by women who were related to one another and who lived together so that social sanctions could be brought to bear on those who did not do their share (Linton, pp. 49-50).

When there was no outside military threat, "there was a strong tendency for lineages and even families to leave the village center and live isolated with their fields about them" (Linton, p. 50) When this occurred, individual families had a recognized right to the land that they worked and a claim to nearby lands that they expected to cultivate in the future.



Another important eastern group were the so called "Five Civilized Tribes" (Cherokee, Choctaw, Creek, Seminole, and Chickasaw) most of whose members were forcibly moved to Oklahoma from the Southeast in the 1830s. The largest of these tribes was the Cherokee. At the time of their removal the Cherokee had substantial contact and intermarriage with Europeans. A small group were planters with extensive commercial holdings and slaves, while a large number had a more traditional orientation and generally had small subsistence farms of roughly five to seven acres cultivated by women, while men engaged in animal husbandry and hunting. (See Champagne) Using quantitative materials, however, Wishart finds that a significant number of Cherokee who could be classified as "yeoman" -- that is farmers who produced more than a minimum subsistence level. (Wishart, 26-28)

### **Indian Property Rights in the Southwest**

The harsh, arid environment led tribes of the Southwest to create an impressive variety of sophisticated institutional arrangements. The Pueblo and Hopi peoples lived in settled villages with sophisticated irrigation technologies requiring relatively centralized decision making. The Apache and Navajos, on the other hand, were raiders and herders and who had no need for a system of centralized decision making.

For those engaged in settled agriculture, ownership of the land itself rested with the tribe or the clan, but the use of the land and its improvements was recognized as belonging to the individual or the family. Centralized control of resources or direction of communal labor by tribal leaders existed for the provision or maintenance of public goods such as an irrigation system. Among the Pimas, bringing a new tract of land under cultivation required the labor of all men in the affected villages to build the irrigation system and related improvements. James Officer reports that "The actual work of building the canals was a cooperative endeavor directed by the village

headman. They later also made work assignments with respect to canal maintenance." (Officer, p. 58)

Following the construction of the canal, the village headman, with the aid of an advisory council of community leaders, assigned farm plots to those who had participated in the work. Those farm plots became the inalienable property of the assignee and his heirs "[i]n the era before allotment . . . [a] person had the right to loan the land in case he was not using it himself, but sale and trade of the land were generally unknown." (Officer, p. 58)

Other tribes needed less centralized direction in clearing land. For example, "Among the Yuman farmers of the lower Gila and Colorado Rivers, clearing land was an individual, rather than a community enterprise." (Officer, p. 58) Land held by individuals was obtained by inheritance or acquired by clearing new land after obtaining permission from neighbors, or land that was already being cultivated could be acquired in trade.

Among the Pueblos, land also was used by individuals but it belonged to the tribe. There were obligations to provide labor in order to support religious leaders and to participate in community labor to help the needy. The Pueblos always recognized individual ownership of the animals, which grazed on village lands, although the number of animals an individual could graze was limited by the tribe, which solved the commons problem.

Among the Hopis farming was carried on by individuals or families on land that belonged to the clan of the wife. Land that did not belong to a clan could be farmed by anyone but without right to will or sell the land. Interestingly, the introduction of peach trees by the Spanish led to a modification in this system because the trees

required a longer term investment. The person who planted and cared for orchards could sell or will the trees.

Among the Navajo, farmlands were regarded as individual property originally acquired by clearing the land and planting crops. If an individual ceased to cultivate his or her land, others could clear the land and claim possession. After losing military superiority in the 1850s, the Navajo turned to raising stock. Animals were owned by individuals, although care was part of the general family duties. Within a family caring for sheep and goats was seen as a family responsibility whereas cattle were the responsibility of the individual.

Before the reservation era, native peoples in the Southwest developed a variety of land tenure arrangements consistent with the relative scarcity of resources and the costs of enforcing property rights. Contrary to the view that land was held in common, most farm land was held by individuals. There were commons as well. Rangeland was abundant and difficult to enclose and was treated as a common, but improved farm land was scarce and therefore individually owned it even when allowed to lie fallow. Centralized management of group activities -- which meant monitoring individuals who might shirk, were common only for the construction and maintenance of public goods such as irrigation systems. Most economic activities, however, were conducted by individuals or families with individual rights to land and animals that were recognized by the tribe.

### **Plains Tribes**

By the eighteenth century, Plains tribes had an economic system based on using horses, introduced by the Spanish, to hunt bison. Before the eighteenth century, the western plains tribes had been hunter gatherers whereas eastern plains tribes had lived in villages and practiced mixed hunting and farming. Most bands of the Sioux nation

pushed west by the Chippewa completely adopted the life-style of a plains tribe and ceased to plant crops. The Santee Sioux in Minnesota and the Dakotas, however, continued to live in settled villages. The adaptation of the plains culture in the early eighteenth century illustrates how rapidly and successfully agricultural tribes could adjust culture and institutions to new conditions.

### **Tribes of the Rocky Mountain Plateau**

The tribes who lived in the plateau region of the Rocky Mountain states usually did not plant crops and migrated in search of a variety of food sources. nor did they recognize individual land tenure. These tribes had recognized land ownership of territory, but did not recognize individual land tenure. "Towards the south, where food became increasingly scarce, even band lines seem to have broken down and people lived in isolated families. . . Apparently existence was so precarious that all resources had to be shared by all." (Linton, p. 48)

One such tribe, the Northern Utes, illustrates the nature of economic activity among these nomadic peoples. Traditional Ute society had been highly individualistic, although persons were expected to share food with family and kinship units. The traditional Northern Ute economy was based on migration from one food source to another, depending upon the season of the year. The area in which they lived was arid and subject to droughts, so such a diversified migratory agriculture certainly appears to have made sense. Within the family, women had responsibility for gathering and processing plant foods and men had responsibility for hunting.

### **Tribes of California**

The Indians of California, like those of the Rock Mountains depended upon wild plants, especially acorns, for much of their diet. The land was more abundant and the population was much denser than in the Rocky Mountain plateau region and people

lived in settled villages, rather than following the practice of moving in search of food. Villages controlled well-defined territories, but because they did not plant crops, these tribes did not recognize individual rights to land. Because acorns were a valuable food source, a woman could, however, claim an individual oak tree and pass this right on to her daughter (Linton, p. 48).

### **Tribes of the Pacific Northwest**

The primary economic activity of the Indians of the northwest was fishing. Villages were recognized as owning territory, with the village sometimes laying claim to offshore fishing grounds. Favorable points along the rivers for catching salmon and steel head trout were particularly valuable. According to Higgs, "Indian regulation of the fishery, though varying from tribe to tribe, rested on the enforcement of clearly understood property rights. In some cases these rights resided in the tribe as a whole; in other cases in families or individuals; sometimes in a mixture of the two." (Higgs, p. 60). Since a certain number of fish had to be allowed to return to spawn, tribes developed rules to prevent over fishing of the valuable salmon. Planting and hunting were less important among these tribes, and rights to land were not well developed. Berries were an important food source, however, and berry patches could be claimed by a family. Also, a woman who discovered a patch of sweet clover or skunk cabbage and defended it against deer had an exclusive right to its yield (Linton, p. 47).

The evidence about Indian land tenure before tribes were confined to reservations is consistent with the hypothesis that Indian institutions were efficient. Hurt reaches a similar conclusion for agricultural Indian tribes "The Indian concept of land tenure enabled various villages to make the best possible use of the land in order to meet their own specific needs. Each people also developed a rational system for transferring land after the death of the owner" (p. 75). In other words, these property rights adjusted to the time and place specific relative prices of each tribe. Tribes

without settled agriculture did not develop individual rights to land, again because these were consistent with resource endowments and technologies.

Thus there is agreement that Indian institutions seem in retrospect to have been rich and well suited to solving a variety of economic problems. Looked at this way the view that Indians could not become farmers due to the nature of their institutions rests on the conclusion that these institutions, well suited to their original environment, could not change fast enough to adjust to settled European style agriculture. All tribes certainly faced a dramatic challenge once they were confined to reservations. The largest changes, of course, were required by those nomadic tribes which lacked a tradition of private property rights in land and whose life-style was predicated on constant movement. But even tribes such as the Cherokee which had long agricultural traditions faced challenges. With the expansion of European settlement, hunting, which had been the primary activity of men in many tribes was no longer a reliable food source, for example. And even agricultural tribes had not grown food for sale in the market.

But tribes which had been nomadic hunters and gathers needed to make the biggest changes if they were to become farmers. Such tribes often lacked a tradition of private ownership of land and in many tribes, including agricultural tribes, farming was the exclusive domain of women, which may have discouraged men from learning to farm.

### **Indian Land Tenure on Reservation Before Allotment**

The policy of placing Indian tribes on reservations beginning in the 1850s meant that Indians had strong incentives to change their systems of land tenure. In a large number of cases, tribes, aided or pushed by Indian agents, came up with similar solutions. On the closed reservations, the system that Indians usually adopted was one

of use rights. Typically, the agent and members of a tribe recognized an individual's title to animals and, where farming was practiced, a family's claim to the land it worked. More land could be added to the holding by bringing the land under cultivation. On reservations where cattle ranching was the preferred activity, cattle were individually owned with grazing land open to each individual. Such a system of use rights is consistent with common sense, a sense of fairness, and the common Indian practice of treating economic activity as individual endeavor. A remarkable and too little appreciated aspect of pre-allotment land tenure is how similar it was to that which existed among agricultural tribes before being confined to reservations.

The Yankton Reservation in South Dakota provides a useful case study of how Indian property rights evolved before allotment among one plains tribe. The Yankton Reservation was established by treaty with the Yankton Dakota (Sioux) Indians in the late 1850s. After the bison vanished from the prairies to the west of the agency in the 1860s, the agent increased efforts to promote Indian farming. The first step was the creation of an agency farm, supervised by the agent and hired white farmers. The second step saw the growth of farming by individual Indians in addition to the agency farm. By the time of allotment in 1891, the agency farm had been abandoned. As early as 1878 farming was conducted by "each man to himself on his own plot of ground." (Bureau of Indian Affairs, 1878, p. 47) These plots ranged from 5 to 15 acres each. The agent's report for 1888 indicate that individual claims had been recognized for as long as 20 years. (Bureau of Indian Affairs, 1888, p. 20.)

A similar pattern of ownership rights appears to have evolved on a number of other reservations. For example, Santee Sioux living on the Sisseton, Santee, and Devil's Lake Reservations in the Northern Plains, the Yakima in Washington, and the Flathead in Montana, all had recognized individual property rights in land before allotment.

The Santee Sioux had experience with settled life in villages and farming following the practice of Eastern agricultural tribes that we have already discussed, but the Yakima and Flathead did not. Such a system of use rights is consistent with common sense and Indian traditions of treating economic activity as individual endeavors.

On reservations where cattle ranching was the preferred activity, cattle were individually owned with grazing land open to each individual. Individual ownership of livestock was the traditional practice of among plains tribes. Indeed, on the Blackfeet Reservation in eastern Montana the tradition of individual ownership was so well established that Indians resisted government efforts to establish common herd in the years from 1910 to 1920. According to John C. Ewers, ". . . the fullbloods, who had always considered livestock in terms of individual possessions, showed little interest in the tribal herd. They acted as if it belonged to someone else."(Ewers, p. 318)

Of course, some objected to being farmers or taking land individually. Much of this resistance occurred when the government sought to either force Indians to become farmers or, later, when it sought to force them to accept allotments. Indians did not necessarily accept the government's assessment that learning to farm was in their best interests. On the arid reservations of the west where neither Indians nor whites had ever farmed successfully, it is not surprising that many Indians were skeptical about learning farming.

Further, teaching Indians to farm was often part of an assault by federal agents and others on Indians traditions and beliefs. Certainly, the agents saw farming as part of a larger program to assimilate Indians into white society. Thus, some have concluded that if Indians refused to farm it was because they were determined to preserve their traditional culture. This was undoubtedly true in some cases, but Indians



did not have to accept the government's view that learning to farm meant separating themselves from their traditional culture and beliefs. Sometimes, from an Indian perspective, learning to farm freed Indians from dependence upon government rations and allowed them to resist unwanted pressures to conform to what the agents wanted.<sup>6</sup>

### **Indian Farming in the Late Nineteenth and Early Twentieth Centuries: Statistical Evidence**

The discussion of Indian land tenure thus far has shown that reformers in the 1880s were wrong and that forms of property rights necessary for farming by individuals, especially small scale subsistence farming of the type advocated by the federal government, already existed among American Indians before allotment. But the empirical question is whether or not very many Indians used these property rights to actually become farmers.

It is often claimed that only the Cherokee or members of the other Five Civilized Tribes were willing to farm, but that farming was not really a viable option for other tribes. For example, Douglas Hurt concludes that "only the most agricultural tribes, such as the Cherokee, showed much aptitude and success in farming once removed west of the Mississippi River. The tribes that had no agricultural traditions,

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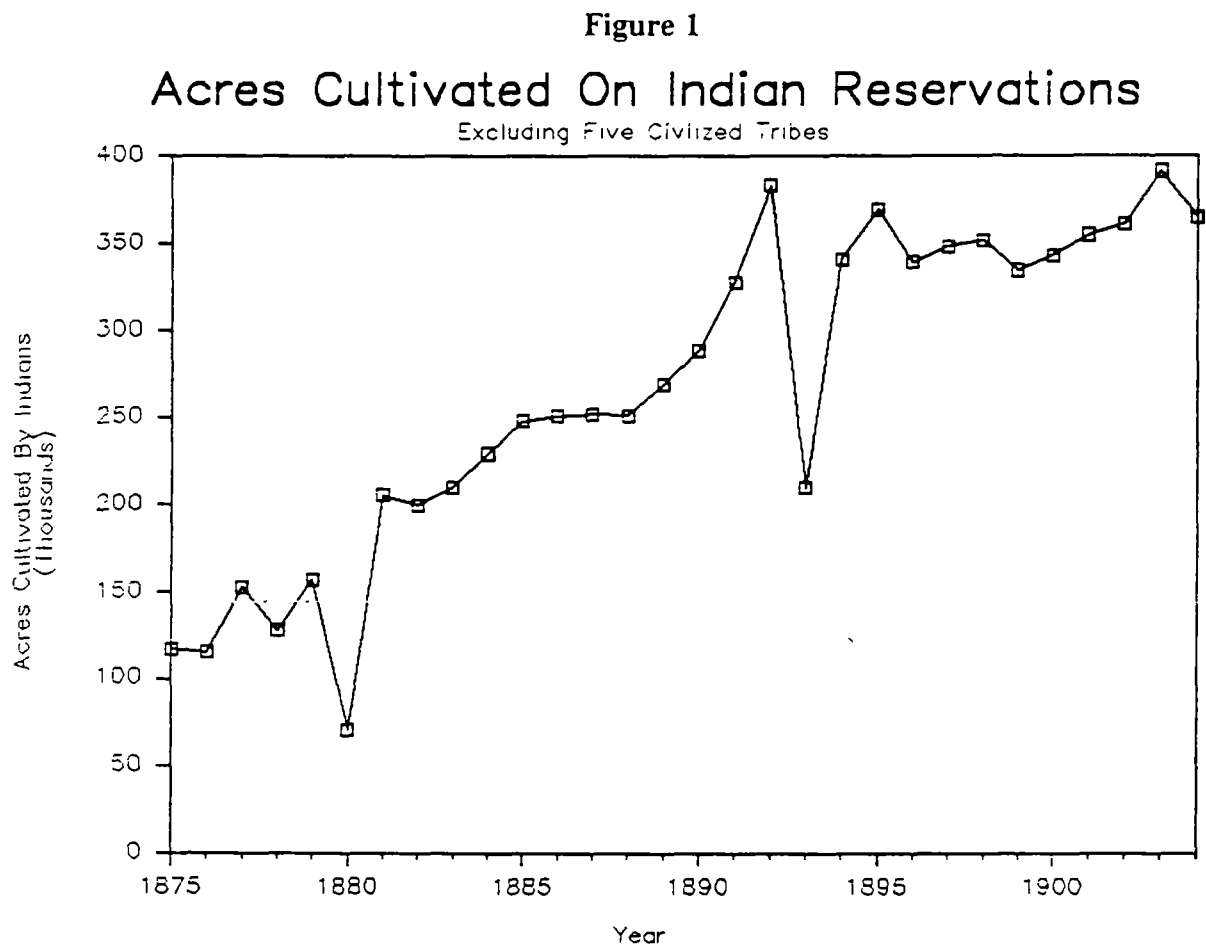
6. The costs of dependence upon the agent were at times made very clear. For example, in 1902, Commissioner of Indian Affairs Jones decided that the wearing of long hair by Indian men was ". . . not in keeping with the advancement they are making, or will soon be expected to make, in civilization." Thus, regardless of the cultural meaning of long hair or the preferences of individuals, they were to be coerced into cutting their hair. As the Commissioner notes further, "With your Indian employees and those who draw rations and supplies, it should be an easy matter as a non-compliance with this order may be made a reason for discharge or withholding rations and supplies." For returned students who refused to cut their hair, ". . . a short confinement in the guard-house at hard labor, with shorn locks, should furnish a cure." On the back of the memorandum sent to the superintendent Greenville (California) School, a version of Hamlet's soliloquy was written by "O.H.L." It begins "To wear hair, or not to wear hair: That is the question:" and later continues "Not to be shorn; perchance then not to draw ANNUITIES: Ay there's the rub;" Memorandum dated January 13, 1902. Copy available from the author on request.

such as the Sioux, found the sedentary farming life culturally unacceptable." (p. 230) But while this was true at first, it was no longer true by the end of the nineteenth century. In the 1870s most agricultural production by Indians as reported by the Commission of Indian Affairs was accounted for by members of the Five Civilized Tribes in Oklahoma. (Wessell, p. 17-18) Not only did other tribes have much to learn and many changes to make, but initially there was often little reason to farm. Traditional means of earning a living were intact and Indian lands were far from markets and, hence, there was little incentive to change. But the environment in which Indian lived changed rapidly. Once the bison herds were destroyed or other similar traditional food sources eliminated by the Army, trappers, and white settlers, farming often became a more attractive potential occupation for many Indians and many more tried farming.

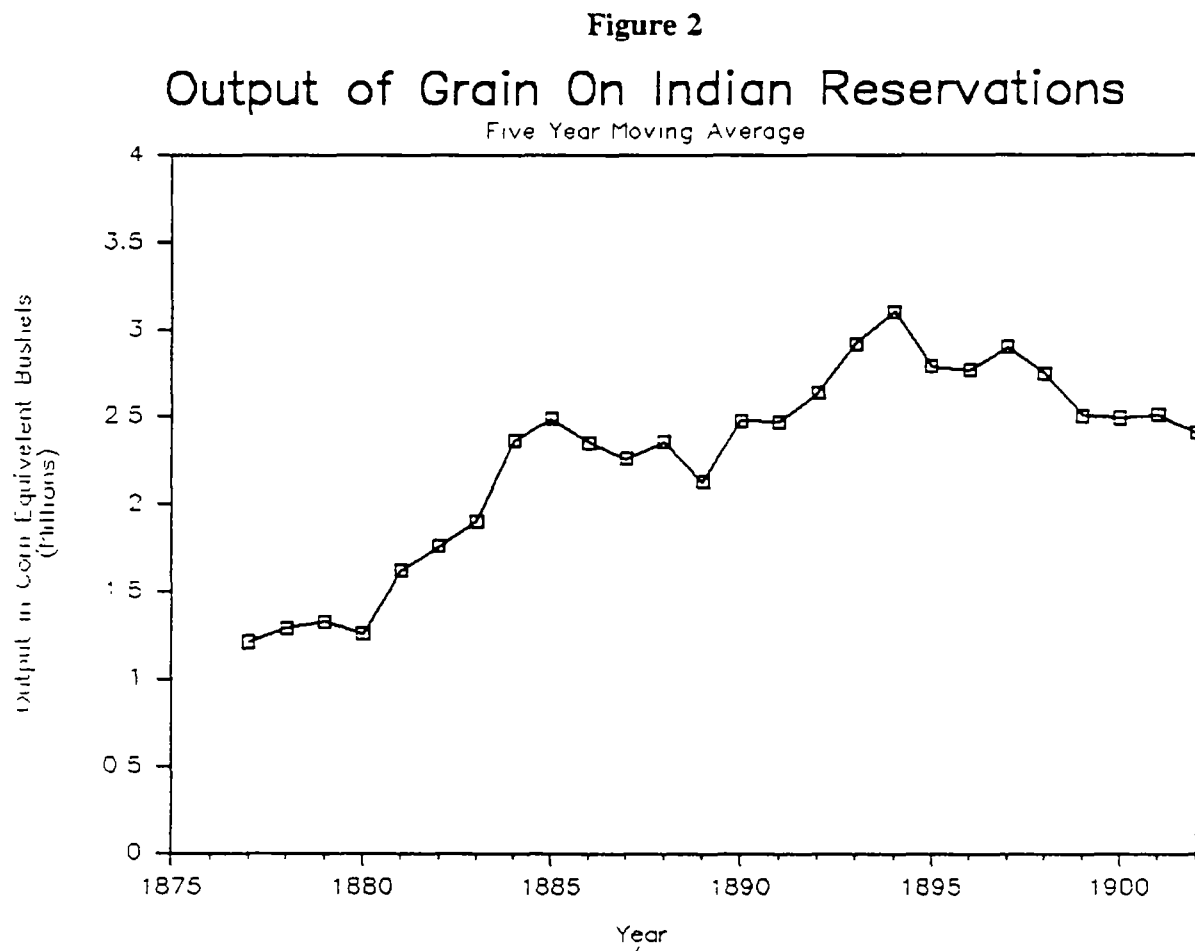
The question is: would Indians, who had few agricultural traditions, become farmers once this became a relatively rewarding alternative? As shown in Figure 1, the number of acres cultivated by all reservation Indians (excluding members of the Five Civilized Tribes) rose from less than 117,267 acres in 1875 to 369,974 acres by 1896.<sup>7</sup>

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7. The data are taken from the reports filed by Indian agents each year and published in the Annual Reports of the Commissioner of Indian Affairs, 1875-1904. These data are reported in Appendix Tables 1 and 3. Such data must be used with care. Agents were not painstaking in gathering data -- indeed it is clear that sometimes they are clearly guessing -- and some were inclined to pad output totals to appear more successful. The fact that agents were transferred frequently, however, provides some confidence in these data. A new agent did not want to appear to have allowed agriculture to decline and would complain if he found that his predecessor had misreported figures.



Source: Appendix Tables 1 and 2.



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Similarly, a five year moving average of the output of grain plotted in figure 2 shows that Indian grain output also grew rapidly in these years. Output grew by 5.5% per year from 1875 to 1895 and by 3.1% for the whole period 1875 to 1904.<sup>8</sup> Indian farming reached a peak in the mid-1890s and then stagnated. The pattern is consistent with the hypothesis that allotment under the Dawes Act discouraged Indian farming (See Carlson, 1981 a,b). These data do show that after 1875, many Indians who were members of tribes without extensive agricultural traditions did try to become farmers.

The question can also be addressed with data from the Census of Agriculture for 1900. This census provides cross section data on the size of farms, value of crops and number of Indians farming in 1899.

Most of the Indians who lived the north central region were members of tribes in which traditionally women had farmed and men had hunted. Thus it would have required substantial changes in gender roles if men were to become farmers. Further in 1899, when the survey took place, most land was either legally owned by the tribe or by individuals who were only recently allotted. Hence any Indian farming was being done by people who had used either traditional or newly devised forms of forms of land tenure. In 1899 there were 4,037 Indian farms in the North Central region with a mean size of 307 acres and the median size of 135 acres.<sup>9</sup> As shown in Table 1, the mean value of output not fed to livestock was \$383 and the median value was \$90.44 -- 18% of that of the median white farm in the same region.<sup>10</sup> Although the value of the output was low when compared to

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8. Computed by regressing the natural log of the index of output and the value of grain on a time trend for each period. See Appendix Table 1.

9. Calculated from data in Census of Agriculture, 1900, pp. cxiv, cxv, cxvii.

10. Calculated from data in Census of Agriculture, 1900, pp. xcv, cxiii-cxv. See also Appendix Table 2

Table 1

## MEDIAN VALUE OF CROPS PER FARM FOR INDIAN AND WHITE FARMERS 1900

Groups of Farms	Geographic Divisions					
	United States	North Atlantic	South Atlantic	North Central	South Central	West
Number of Indian Farms	19,910	366	935	4,037	7,354	6,618
Median Value of Crops per farm: Indian Farmers	\$121.60	\$195.53	\$169.72	\$90.44	\$201.27	\$74.09
Median Value of Crops per farm: White Farmers	\$501.65	\$492.28	\$335.12	\$501.65	\$620.46	\$523.47
Value per Indian Farm as a Percentage of White Farmers	.266	.397	.506	.180	.325	.142

Source: Computed from data in 1900 Census of Agriculture, pp. cxiii,c.

white farmers in the same region, these data show that many Indians were willing and able to pursue just the sort of subsistence agriculture that the federal government saw as their best hope for economic progress.

Indian farming was not confined to the Northern Plains. In 1899 Indians operated 19,910 farms in the United States, with most Indian farms concentrated in three census regions: South Central, North Central, and the West.<sup>1</sup> Based on a total Indian population of 237,196 (as measured by the Census), there was one farm for every twelve persons that averaged 172.5 acres. Twenty five percent of Indian farm land was improved.<sup>2</sup>

According to the Census, most of these farmers were men. The census of 1910 found 20,841 Indian men whom it reported as farmers and 23,291 who were farm laborers; while it found only 1,156 women farmers and 3,197 farm laborers. The agents reports for 1900 similarly fail to mention Indian women who were taking a leading role as farmers, although it seems likely they probably would have mentioned it if there very many, if only to criticize the practice. By the 1920s, 68% of all Indian in a major survey of the occupations of the parents of Indian school children listed their occupation as farmer, with another 13% listing their occupation as rancher.(Meriam Report, pp. 489-90)<sup>3</sup>

At the same time there is no mention in the Meriam Report in a major chapter on Indian women's household and industrial jobs of farming by women. I would have expected

1. The Census reports that this number probably under estimated that the actual number of Indians farming, since it is the census takers undoubtedly failed to count some Indians in remote areas and some relatively assimilated Indian farmers. Census of Agriculture, 1900, pp. vcvii.

2. See appendix table 2 and Census of Agriculture, 1900, pp. cxvii.

3. It should be noted that the Meriam Report also states that many Indian farms in the 1920s were "considerably below any satisfactory standard for subsistence farming." (p. 491) This maybe due to a resistance of Indians to farming or a result of other federal programs or some combination of many factors. See Carlson (1981 a,b) for a discussion of federal policies towards Indians in the early twentieth century.

the report to mention women farmers if they were important, since the chapter is very critical of government schools for only training Indian women for housekeeping and other traditional and low paying jobs. (Meriam Report, ch. XI) The evidence is that despite cultural barriers, by 1900 farming was largely a male occupation. Of course, it is possible that the government's emphasis on making men into farmers may have been excessive -- leading to an underutilization of the efforts and talents of women -- but it does indicate that a shift in the gender division of labor had already taken place.

### **Indian Farming on Reservations Before Allotment**

Case studies of tribes in the Northern plains are also consistent with the view that plains Indians could succeed as farmers. One such tribe was the Santee Sioux, one of the eastern three subtribes of the larger Sioux Nation. In 1862 the Santee in Minnesota, driven by hunger, white encroachment on their lands, and broken promises of aid, rebelled in a brief but bloody war on the white settlers. At the conclusion of that war, most of the Santee bands were settled on three scattered reservations: The Santee Reservation in Nebraska, the Sisseton Reservation in South Dakota (with parts of North Dakota and Minnesota), and the Devil's Lake Reservation in North Dakota.

Once settled on their new homes, Santee on all three reservations made progress as farmers throughout the 1870s and 1880s before allotment, despite drought and other difficulties. Farming was done by individual Indian farmers, aided by government agents. Farm equipment was purchased by either the agent or by individuals. Although the tribes were not ready to do away with government rations, Meyer concluded that the success of Indian agriculture was real and the optimistic mood of the reports from agents was justified. For example, the Devil's Lake Indians, the least acculturated of the Santee groups, "made some long strides towards the goal of self-support through agriculture." (Meyer, p. 235 ) These changes were not easy and were at times accompanied by social stress. At Sisseton a bitter split occurred between the traditionalists, or scout party, and the progressives, or church



party. But some of the most active farmers on the reservation were members of the traditional group. (Meyer, pp. 212-213)

The Yankton Reservation in South Dakota and the Fort Berthold Reservation in North Dakota showed varying degrees of successful farming. In 1895, for example, Agent J.A. Smith reported that, "Quite a number of the more progressive farmers will harvest sufficient grain for their own subsistence." (Annual Report of the Commissioner of Indian Affairs, 1895, pp. 304-305) Like the Santee, the Yankton had established small farms and developed a successful general agriculture on a closed reservation. The Fort Berthold tribes (the Mandan, Arakara, and Gros Ventre) proved less successful, perhaps because of a harsher climate, but Indians at Fort Berthold made a serious effort to farm and to raise cattle on the reservation.

The Coeur d'Alene Indians of Idaho had not been farmers before being placed on a reservation, but they became extremely successful Indian farmers in the closed reservation era. Because the Coeur d'Alene shared their agent with the large Colville Reservation, day-to-day supervision was in the hands of the agency farmer. Roman Catholic missionaries gained a wide following among Indians on the reservation and may have aided the Coeur d'Alene in becoming farmers. (Census of Agriculture, 1900, p. 735) Under these circumstances, the number of acres farmed by the Coeur d'Alene grew from modest beginnings, until by 1900 it was reported that:

Agriculture is their principle occupation, and, with few exceptions, their farms are well supplied with buildings and implements.

Material progress is being made from year to year in the improvements on their farms and new land is being broken each year. Many of the Indian farms at Coeur d'Alene would compare favorably with those of neighboring white men in the number of acres under cultivation. (Census of Agriculture, 1900, p. 735)

Thus the Coeur d'Alene were able to develop individual farms, some quite prosperous, with little direct supervision by the agent and without formal allotment.

On many reservations where the land was too arid to support small scale general farming ranching was economically viable and attractive to Indians who were already accomplished horsemen. (See Iverson) Reformers, however, had seen ranching as a more "primitive" way of life and at times deliberately discouraged ranching. (Carlson. 1981 a,b; Wessel) Despite occasional government hostility, however, cattle ranching flourished on a number of reservations, especially those in arid regions of the Great Plains. The practice on many reservations was to graze individual herds of animals on the open ranges, much as the Indians had previously handled their horses. A number of Plains tribes found ranching a colorful and attractive way of life, and by 1900 the agents on a number of reservations were optimistic about the prospects of Indian ranchers. Gordon Macgreggor, for example, found that the Pine Ridge Sioux made good progress as ranchers until government policy encouraged Indians to sell their herds and lease their lands to whites during World War I. Macgreggor described the sale of the Indian herds as "the greatest disaster to befall the Pine Ridge Indians since the vanishing of the buffalo." (Macgreggor, p. 39) Indian ranching at Pine Ridge never recovered.

When Indians failed at farming, there were other factors in addition to a lack of experience that contributed to the failure. The Uintah and Ouray Reservation in Utah is an example of such a reservation where farming by Indians did not prosper. As discussed earlier, the Ute Indians had no tradition of settled agriculture before being confined to reservations and resisted government efforts to change their customs. Indeed, in the one band, the White River band found the heavy handed efforts by a self-righteous government agent, Nathan Meeker, to change their ways so intolerable that in 1879 they engaged in a brief rebellion in which agent Meeker and six others were killed, before being subdued by the army. In the aftermath, the White River band, along with innocent bands that had not participated in the fighting, were moved from Colorado to a new reservation in Utah.

Once in Utah, the Utes continued to show little enthusiasm for farming. Lewis (p. 149) emphasizes the cultural resistance of the Utes to farming as the reason that farming was rejected by members of the tribe. Although this was undoubtedly a factor, their own experience did little to recommend agriculture. For example, the crops on experimental farms in the 1880s often failed. One agent noted that "The broken character of the land, by streams, slough, rocky and alkaline patches, makes it discouraging, even to skilled workers: much more is it so to those [Utes] unaccustomed to habits of industry." (Lewis p. 145) However, when hunting became less attractive and new forms of alfalfa proved to be a successful crop on the reservation more Utes tried to farm. Indeed, "(b)y 1920, 79 percent (218) of the able adult males cultivated an average of 41 acres each, although they actually planted less than half of that acreage or leased it to white." (Lewis, p. 153) Ultimately, burdened by a decline prices in the 1930s and the spread of irrigated farming, that required more capital and greater skills, the Utes largely abandoned farming.

### **If Indians Were Learning to Farm, Why Were They So Unsuccessful in the Twentieth Century?**

The evidence presented thus far is consistent with the hypothesis that Indian institutions were more flexible than is often thought to be the case and Indians did make significant adjustments to the demands of settled agriculture on the closed reservations. But if Indian tribes were doing as well as this evidence suggests, what accounts for the generally dismal record of Indian farmers in the twentieth century?

While there are a few bright spots, there is no doubt that most Indian farmers failed in the twentieth century. What is not always noted, however, is that Indian farming reached a peak in the early twentieth century and then declined. In 1910, the Census reported that there were more than 3.1 million acres in Indian farms in the eleven states in which contained most Indian allotted land. This declined to 2.4 million acres by 1930. (Carlson, 1981a p. 151) Indian farmers were further behind white farmers in 1930 than they had been in 1910 as well.

(Carlson, 1981a, chapter 6 and 1981 b) Despite the decline in farming, most Indians remained in rural areas where there were few employment alternatives to agriculture. The decline of Indian farming was caused by a number of factors, including low agricultural prices after 1920 and increased size and the increasing capital intensity of the typical farm in the United States. Indians were being encouraged to become subsistence farmers at a time when the returns to that activity were low and the land they had to use was often of inferior quality. (Meriam, 1926, p. 4) But inconsistent federal policies, including allotment, appear to have had an important role in discouraging Indian farmers.

I have modeled the effects of allotment on Indian farmers in earlier work. (see Carlson 1981a, b) To summarize briefly, the formal allotment of a reservation meant that a family or individual Indian received an allotment, typically 80 acres per adult, with the land placed in trust for a period of 25 years. While his or her land was in trust, an allottee could not sell, lease, nor will the land without permission from the agent or other government official. Allotment was advocated by reformers as a way to create private property rights for Indians. But as already discussed, Indians already had a system of use rights prior to allotment. Thus the most important thing that allotment did was to make it possible for an Indian to sell or lease land to white settlers. Other distortions, however, remained or were worsened by allotment. Borrowing remained a problem, since until an Indian received a patent-in-fee, he or she could not use the land as collateral. Inheritance was made more cumbersome and inefficient after allotment, since Indians in trust status could not make wills and many small allotments ended up with many owners. After allotment, grazing land was no longer open and an Indian could no longer claim unused land to start a farm. After allotment, the transactions costs of transferring land between Indians were increased. This was especially problematic on reservations where grazing was the preferred activity, since allotments were too small to be efficient farms. Further, the death of Indian allottee caused land to be further divided. One

commentator described the mission of the BIA in 1942 as one of "Salvaging the Wreckage of Indian Land Allotment." (Harper, 1942)

Looked at in this light, allotment was a contradictory policy. An Indian was expected to use his individual initiative to farm his land, yet the property rights he was given were so restricted that he could neither use the land as collateral for a loan nor sell unusable tracts of land.

The implications of this convoluted set of rights are straightforward (See Carlson 1981 a,b). I assume that land and labor are the only factors and that before allotment land could either be used in home production to produce market goods or to produce traditional goods. Since undeveloped land was freely available, undeveloped land would have been used until its marginal revenue product in either activity was zero. After allotment, however, an Indian family could lease or sell land to white farmers. A rational farmer would reduce the amount of land employed by until the net marginal revenue product from growing crops on an acre of land just equaled the return from leasing. If land and labor are complements, reduction in the amount of land used to produce market goods at home also reduces the marginal revenue product of labor. The net effect is that Indians would employ less land and less of their own labor after allotment than before.

If, as seems likely, there were other market or institutional failures (such as poor schools or a lack of appropriate credit facilities), the alternative investments open to Indians may have been restricted. In such a case, an Indian would have been encouraged to choose present consumption over investment. In the long run this would have further retarded the growth in Indian incomes.

In general, aggregate data, studies of individual reservations and the observations of federal agents assigned to the various reservations support this conclusion.

Aggregate data also show evidence that allotment discouraged Indian farmers. As already discussed, the data plotted in figures 1 and 2 show a decline in output after 1900 consistent with the hypothesized decline in Indian farming after allotment. Data from the Census show a similar decline. (Carlson, 1981 a, ch. 5, and 1981b).

Case studies of individual reservations show a similar decline. For example, Roy Meyer in his study of the Santee Sioux concludes that:

The history of the Sisseton Reservation in the late nineteenth century followed much the same pattern as Santee: a brave beginning, with considerable enthusiasm among both Indians and agents, followed by a gradual progress toward self-sufficiency, culminating in allotment, which proved to be not the crowning achievement of the process as intended, but actually a disaster for the Indians, succeeded by deterioration and a return to poverty. (Meyer, p. 219.)

If allotment and other federal programs had indeed discouraged Indian farmers it would help to explain the pessimism expressed by observers of Indian farming in the 1920s and later which stands in marked contrast to an earlier optimism. Thus in 1920 the Meriam Commission observed that "Although a few Indians were visited who could really be called farmers . . . a great majority are considerably below any standard for subsistence farming." (Meriam, 1926, p. 491) In 1900 many Indians were poor and most Indian farmers lagged behind white farmers, but some Indian farmers had made recognizable progress in the recent past. By the mid-1920s and later conditions were often worse and efforts to develop jobs on their reservations were hindered by a diminished land base and an increased population and there were often signs of Indians abandoning farming. There is no doubt that Indian farmers faced many difficulties and that even with better circumstances many Indians would have failed, but the chances that an Indian would become a successful farmers was made much worse by perverse federal policies.

## **Conclusions**

The conclusion is that Indian land tenure systems before tribes were placed on reservations before reservations were well suited to the resource constraints faced by tribes and

not the uniform system of free access that the reformers believed. Further, once they were placed on reservations, many tribes were often able to adjust land tenure and other social institutions to the requirements of small scale subsistence farming before formal allotment. Linton reached a similar conclusion about the flexibility of Indian land tenure, noting in 1942 that even among tribes with little experience with individual land holding that "Certainly where individual land tenure has been of obvious advantage to the individual there has been little resistance to it." (p. 54) Furthermore, Indians who were members of tribes other than the members of the Five Civilized Tribes produced a sizeable amount of agricultural output by 1900. Thus many Indians were at least trying subsistence farming in the late nineteenth and early twentieth century.

Institutions and how they change have received renewed interest among economists. (See, for example, North, 1991) If we are to conclude that Indian institutions made it difficult for Indians to become farmers or otherwise adjust to a market economy, more must be done than to assert that Indians had inflexible institutions. Some important institutions were more flexible than is often realized, where this was in the interests of Indians.

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Appendix Table 1  
Agricultural Output on Indian Reservations  
Excluding the Five Civilized Tribes

Year	Total Acres Cultivated By Indians	Value of Grain \$	Index of Output of Grain (Corn Equivalent Bushels)
1875	117,267	\$468,093	760,719
1876	115,194	\$644,196	978,878
1877	152,550	\$851,631	1,879,353
1878	128,018	\$555,302	1,351,139
1879	157,056	\$658,758	1,087,962
1880	70,540	\$702,696	1,152,824
1881	205,367	\$1,025,874	1,164,786
1882	199,982	\$964,721	1,532,111
1883	210,272	\$2,185,082	3,154,472
1884	229,768	\$960,344	1,790,658
1885	248,241	\$1,108,305	1,877,987
1886	251,276	\$1,592,375	3,462,134
1887	252,276	\$1,175,857	2,160,367
1888	251,696	\$1,302,161	2,470,645
1889	269,355	\$814,173	1,343,619
1890	288,613	\$1,538,954	2,348,382
1891	327,915	\$1,088,573	2,321,103
1892	383,611	\$2,003,177	3,910,203
1893	210,000	\$1,167,557	2,436,646
1894	341,000	\$1,053,540	2,172,997
1895	369,974	\$1,251,597	3,768,467
1896	339,171	\$1,115,367	3,249,137
1897	348,218	\$1,099,631	2,342,191
1898	352,217	\$924,014	2,333,182
1899	334,660	\$1,216,645	2,839,455
1900	343,351	\$1,340,311	3,001,578
1901	355,261	\$1,286,189	2,021,742
1902	361,680	\$1,187,436	2,284,409
1903	391,351	\$1,364,930	2,414,476
1904	365,469	\$1,502,709	2,318,619
Source: <u>Annual Reports of the Commissioner of Indian Affairs, 1875-1904.</u> See Appendix Table 3.			

Real Output index constructed using corn equivalent bushels. Weights: Wheat = 1.04, oats & barley = .433. See Carlson, 1981a, p. 190. Value of Grains output computed by multiplying Indian grain production by prices as reported in Historical Statistics of the United States Colonial Times to 1970, Volume I, p 512.

Appendix Table 2  
Data on Farming By Indians on Reservations  
Excluding the Five Civilized Tribes

Year	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884
Cultivated Land Broken	117,267	115,194	152,550	128,018	157,056	70,540	205,367	199,982	210,272	229,768
Indians Living on Allotments	17,245	28,253	16,747	22,319	24,270	27,070	29,558	21,896	20,688	26,393
Wheat	230,427	423,554	220,278	276,215	328,637	408,822	451,479	493,933	1,811,362	823,299
Oats&Barley	120,678	101,180	184,248	172,967	189,054	224,899	343,444	317,294	374,670	984,318
Corn	454,074	467,463	1,556,387	971,303	643,286	604,103	517,642	849,421	992,496	455,526
Vegetables	245,164	156,354	315,975	315,585	390,698	375,863	488,792		478,318	497,597
Flax										
Hay	163,935	13,215	38,473	36,943	48,333	75,745	76,763	76,447	79,692	71,828
Melons			3,467	193	234,900					
Pumpkins			3,721	679	392,860					
Horses	167,185	218,943	195,811	181,245	202,604	215,840	191,962	188,664	210,741	238,939
Cattle	35,586	40,308	140,883	52,867	68,894	78,939	80,689	94,932	97,216	103,324
Swine	20,766	19,576	74,358	27,671	32,537	39,081	43,913	39,220	36,676	67,835
Sheep	231,816	447,298	587,444	510,674	863,525	864,270	977,017	1,268,283		1,029,869
goats										
fowl										
Sold to government: products of Indian labor										
Sold to others: products of Indian labor										
Total value sold										

Source: Annual Reports of the Commissioner of Indian Affairs, 1875-1904.

Appendix Table 2 (Continued)

Year	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894
Cultivated	248,241	251,276	252,276	251,696	269,355	288,613	327,915	383,611	210,000	341,000
Land Broken		30,060	24,960	52,597	40,000	35,308	45,607	17,893	20,000	41,000
Indians Living on Allotments						5,55	5,883			8,000
Wheat	819,834	875,358	962,733	725,909	836,741	881,419	131,218	1,825,715	1,811,362	887,000
Oats&Barley	1,171,579	670,387	432,908	599,608	529,790	545,032	798,001	875,634	374,670	653,000
Corn	465,597	2,205,461	910,061	1,409,611	190,458	1,139,297	1,830,704	1,515,464	274,670	911,000
Vegetables		591,223		585,085	647,802	482,580	541,458	558,162	478,318	396,000
Flax	449,791									
Hay				129,156	110,372	130,712	150,974	558,162	79,692	212,000
Melons				861,687	1,157,958		236,565	1,282,344		273,000
Pumpkins				401,73	2,536,54		250,55	1,274,27		231,000
Horses	247,720	634,514	608,972	419,338	435,687	443,244	303,879	319,182	206,738	325,032
Cattle	109,222	259,449	5,610	131,706	153,774	170,419	175,448	211,969	97,216	215,766
Swine	49,167	166,712	109,449	40,406	27,353	87,477	44,495	46,486	36,676	45,901
Sheep	1,555,605	898,199	46,712	858,536	942,857	964,759	1,630,579	1,757,492	1,174,660	1,035,833
goats	99,982	266,528	880,199							258,563
fowl			116,528	146,192	171,330	143,056	151,268	188,253		186,523
Sold to government					\$71,260	\$151,688	\$165,683	\$250,096		\$247,725
Sold to others					\$799,333	\$1,355,384	\$1,694,830	\$1,144,446		\$614,990
Total value sold					\$870,593	\$1,507,072	\$1,860,513	\$1,394,542		\$862,715

Appendix Table 2 (Continued)

Year	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
Cultivated	369,974	339,171	348,218	352,217	334,660	343,351	355,261	361,680	391,351	365,469
Land Broken	37,899	33,280	30,135	58,371	20,139	47,044	28,641	15,513	26,598	30,644
Indians Living on allotments	8,366	10,045	10,659	11,789	10,704	10,835	10,270	11,453	11,280	10,846
Wheat	1,016,754	753,577	788,192	664,930	982,120	935,731	935,870	913,203	960,939	750,788
Oats&Barley	875,349	731,806	805,466	599,665	850,387	722,925	737,986	742,869	843,368	1,246,960
Corn	2,266,944	2,100,316	1,123,260	1,339,444	1,386,977	1,655,504	668,994	954,571	988,421	949,815
Vegetables	476,272	542,538	703,770	494,509	445,935	396,067	441,931	444,577	404,183	606,023
Flax	10,410	9,612	6,000	6,336	18,303	28,579	20,287	70,652	66,551	26,290
Hay	216,881	246,290		215,163	26,231	320,749	289,335	288,391	348,541	405,627
Melons	261,881	323,874	585,000							
Pumpkins	217,993	236,429	331,000							
Horses	326,817	373,019	368,286	328,474	298,277	353,387	343,300	344,646	328,587	295,466
Cattle	232,195	254,679	231,491	214,866	325,898	257,610	253,819	288,884	313,191	297,611
Swine	39,381	41,337	44,650	37,359	50,216	47,860	50,365	38,711	43,612	40,898
Sheep	1,068,074	1,035,568	1,041,255	1,041,315	1,100,981	486,231	567,941	499,372	579,361	792,620
goats	390,385	259,327	256,394	256,482	257,445	89,479	90,913	96,961	96,518	135,417
fowl	191,847	205,652	201,910	211,933	222,147		254,285	264,560	280,819	267,574
Sold to govern.	\$371,324	\$427,186	\$429,313	\$451,783	\$483,450	\$436,513	\$436,307	\$461,173	\$476,566	\$456,026
Sold to others	\$581,006	\$1,175,254	\$603,734	\$746,135	\$840,653	\$972,352	\$1,049,185	\$1,552,624	\$1,731,903	\$1,878,462
Total Value sold	\$952,330	\$1,602,440	\$1,033,047	\$1,197,918	\$1,324,103	\$1,408,865	\$1,485,492	\$2,013,797	\$2,208,469	\$2,334,488