

Pima-Maricopa Irrigation Project

Education Initiative

2003-2004



Restoring water to ensure the continuity of the Akimel O’otham and Pee Posh tradition of agriculture

The Agricultural Industry of the Pimas

Part 42

When Father Francisco Eusebio Kino made his first visit to the Pima villages, in 1694, he found the Pimas growing and cultivating food crops, as well as harvesting foods from the desert. They also enjoyed an abundance of fish from the river. Kino observed the Pimas fishing at several locations along the river. On one of his trips he commented that the Pimas fished with “many nets and other tackle” and that they gave him “so much and so very good fish” that he issued it as rations to the troops traveling with him much like beef would be given as rations.

When Franciscan missionary Francisco Garces visited the Pimas eighty years later, he too was promised all the fish he could want if only he would stay with the Pimas in the village of Uturituc (near modern Sacaton). While fishing was better on the Salt River and below the confluence of the Gila and Salt, the Pimas fished within the modern day Community boundaries. While fishing did not represent a large part of the Pima diet and economy, fish were frequently mentioned in journal entries.

But it was agriculture the Pima and Maricopa most enjoyed. Agriculture flourished among them in part because of the exceptionally fertile land along the Gila River and its tributaries. So fertile was the land along the river that there were no recorded instances of famine in the Gila River Valley between 1690 and 1848, the years covering the Spanish and Mexican eras. While the river periodically went underground during hot and dry summer months, it never completely failed in Pima country.

Other Piman tribes to the south—including those living north of Tucson on the Santa Cruz River—occasionally experienced drought and, at such times, depended on their Gila River relatives for food. Juan Bautista de Anza Jr., recorded in his journal in 1774 that many of the Piman people near Tucson moved north to join the Gila River Pimas “on account of the great drought and the still greater famine which is experienced in it.” The Pimas, having full access to the waters of the Gila River, faced no such famine.

The most prominent aspect of the Pima economy was agriculture, with corn, tepary beans and a variety of squashes serving as important crops. As early as the 1680s Pima corn was already being traded with the New Mexican settlements near Santa Fe. Grown in sixty days, Pima corn—while producing small ears and a short stock—required minimal amounts of water beyond its pre-planting irrigation. Its yield was just 10-12 bushels per acre. Nonetheless, it was sufficient to provide the people with an adequate supply of food, something Kino noted on several occasions.

While engaged in trade, the Pimas did not grow food as a commercial crop when Kino first visited them in the 1690s. They instead grew sufficient crops for their own use, limited trading purposes and to insure seed for their next season’s crop. Commercially grown crops began to be cultivated in the middle of the 18th century, when the Pima adaptation to Spanish wheat altered this crop pattern and served as the basis for the increasing Pima prosperity in the latter 18th and early 19th centuries.

Wheat was planted in the fall and harvested in late spring when winter food supplies were at their lowest. It was also a complementary crop planted off-season from the traditional Pima crops of corn, beans and squash. Since wheat could be stored for a long period, it provided the people with a stable food supply and helped insure a thriving economy. As was true of horses, wheat kept ahead of the Spanish frontier as it pushed northward to the Pima villages. While it did not immediately modify the Pima economy, within several decades it replaced corn as the primary Pima crop. By 1744, Jesuit

missionary Jacobo Sedelmayr found the Pimas cultivating wheat between Sweetwater and Casa Blanca at a place then called Sutaquison, the largest Pima village. It was also being grown among the Maricopa down river.

Wheat changed the Pima economy in a number of ways, one of which was the expansion of agriculture. Father Kino, while observing and describing abandoned Huhugam canals at Casa Grande and writing about Pima agricultural production, never specifically mentioned irrigation farming on the Gila River in any of his journal. That does not mean the Pimas did not irrigate their farms; it simply means Kino did not note this activity. While not mentioned, the Pimas were probably irrigating some of their fields with water from the Gila River.

In 1699, a Spanish military captain named Juan Mateo Manje accompanied Kino to the Pima villages. In his journal he noted that if Spain were ever to establish missions among the Pimas, they could easily irrigate land away from the river. While the Pimas likely utilized irrigation prior to the introduction of wheat, they may have had little need or economic incentive to irrigate land farther away from the river since their fields were planted in the floodplains of the Gila and on the islands within the river. These fields provided all the food the people needed until they began to trade large quantities of cultivated crops in the middle 1700s.

In the first decades of the 1700s, Pima irrigation canals were expanded and by the 1740s the Pimas were growing a surplus of cultivated foods. At the same time, their relatives the Papago began assisting them with these large harvests in return for a share of the crop. While there was a limited supply of food crops to trade, other than with neighboring tribes such as the Papago, the Pimas did sell grain on occasion in Tucson when the Spanish and Papago villagers experienced famine and were in need of food. When Father Sedelmayr visited the villages, in 1744, he specifically noted the Pimas cultivating wheat and using irrigation on both sides of the river and on the islands within the river.

The Pimas enjoyed “broad acres for cultivation of crops,” growing large quantities of food and fiber crops by means of irrigation ditches, “which, the country being level, are easily carried from the Gila.” By 1760, the Pimas were farming with irrigation on both banks of the Gila River for nearly 30 miles along the river. Their lands were described as “fruitful and suitable for wheat, Indian corn, etc.” They grew so much cotton that their Spanish and Indian neighbors in Sonora desired their surplus. After the Pimas harvested their cotton, one Spaniard noted, “more remains in the fields, than is to be had for a harvest here in Sonora.”

Although engaging trade with other Indian tribes before, the Pima’s adaptation to wheat shifted their economic focus from producing enough for their own needs (or a more subsistence-based economy) to producing larger amounts of crops to sell or trade with others (or a more commercial-based economy). While they had at one time bartered hand manufactured goods such as cotton blankets, woven baskets and pottery, by the middle of the 18th century the Pimas were exporting agricultural crops throughout the region. In the process, the Pimas were changing from small-scale farmers into larger commercial farmers.

The Pimas continued to make their own woven and cotton blankets. Trade with Spanish settlements, such as Tucson and Magdalena, Sonora, allowed them to trade food crops for *bayeta* (flannel) and *sayal* (woolen) cloth, both of which were highly valued by the Pimas. The integration of wheat farming into their economy was allowing the Pimas to improve their standard of living and acquire new technology, such as horses and metal tools. Having always used the river to their advantage, the Pimas now combined their agricultural expertise and the waters of the Gila River with a new crop—wheat—to expand their trade networks and acquire more goods. Visiting their villages in May 1774, Franciscan missionary Fray Juan Diaz noted the Pimas were well dressed and gave as the reason their superior agricultural production and trade networks with Spanish and Indian communities to the south.

Priority Uses of Water

Look at each category of water use on the left side of the chart. Then look at some of the examples so that you clearly understand the water use in each row. Break into groups of 4 or 5. On your own, rank the water uses, with 1 being the highest priority use and 10 the lowest. Get back together with your small group and establish a ranking as a group. Some of your individual choices may differ from the larger group choices. After you have done this, come together as a class and develop a class ranking.

<u>Water Use</u>	<u>Examples</u>	<u>My Ranking</u>	<u>Group Ranking</u>	<u>Class Ranking</u>
Fish and Wildlife	Fish, beaver, birds, etc.			
Irrigation	Growing crops			
Transportation	Ship and boat travel			
Recreation	Swimming, boating, etc.			
Ecological	Preservation, wildlife habitat			
Human	Drinking water, home use			
Livestock	Cattle, horses, etc.			
Energy	Generate electricity			
Industrial	Make computers, etc.			
Cultural	Flowing river, riparian areas, etc.			

Teacher Plan for “The Agricultural Industry of the Pimas”

Terms to know and understand

- Adaptation
- Complementary
- Cultivated
- Famine
- Economy

Critical Thinking:

- Water resources are used throughout our world. It is used for farming, industry, recreational uses, drinking, cooking, cleaning, to generate electricity and many other uses. In some places of the United States people have all the water they need. But in places such as the Sonora Desert, we have a limited water supply. What happens when our supply of water is limited? What happens when one use for water decreases in value? How do people make decisions regarding water use?

Activities

- Have students generate a list of major water uses. Help them fit these into the water use chart provided. Then tell them a special meeting has been called to identify the most important use of water. Students will likely conclude that all of the water uses are important. Explain to them that Community members and the Tribal Council, which acts as the legislative branch of the Tribal government, ultimately make decisions about how water should be used. The Governor’s job is to enforce these decisions. The Pima and Maricopa made these decisions hundreds of years ago (choosing to adopt an agricultural way of life) and the Community still does today. This year represents an historic precipice for the Community as legislation to settle their water claims has been introduced into United States Congress. Decisions affecting how this settlement water will be used must be made today to protect it for the future.
- Give each student a copy of the water chart and have them rank water uses individually, with 1 the highest priority and 10 the lowest. Then do the same for their small group (have them determine rankings by taking an average of the scores divided by the number of people in the group). Do the same with the class as a whole. They may wish to graph the small group’s ranking (and class ranking). Have them compare these to their individual ranking. What happens when the group (or class) lowers an individual’s ranking?
- Have students compare the individual, group and class rankings. Why do different groups of people feel so strongly about the importance of water? When decisions are made affecting large groups of people, is it possible to satisfy all individuals involved?

About P-MIP

The Pima-Maricopa Irrigation Project is authorized by the Gila River Indian Community to construct all irrigation systems for the Community. When fully completed, P-MIP will provide irrigation for up to 146,330 acres of farmland. P-MIP is dedicated to three long-range goals:

- Restoring water to the Akimel O’otham and Pee Posh.
- Putting Akimel O’otham and Pee Posh rights to the use of water to beneficial use.
- Demonstrating and exercising sound management to ensure continuity of the Community’s traditional economy of agriculture.

Students will be able to:

1. Identify the primary use of the waters of the Gila River as utilized by the Pimas historically.
2. Analyze how people perceive the value of various water uses differently and explain why some people choose to use water differently than others.

Objectives