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The Colorado River and the All-American Canal: The Historical and Cultural Perspective of Water in the U.S. Southwest

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INTRODUCTION

When attempting to analyze a phenomenon, event, or social, political, or economic occurrence, the criteria applied have significant cultural content that corresponds to a particular cultural upbringing. This is not a problem, provided that the phenomenon defined and analyzed is within the context of one's own society and culture, whether local, regional, or national.

Everyone, in the end, is a product of their particular society and heirs of their historical upbringing and culture, which has formed a particular way of seeing things and interpreting events. However, in attempting to understand and analyze a phenomenon or event outside one's own culture or country, it is difficult to fully understand the causes or roots of the phenomenon, especially when trying to make sense of the behavior of the strangers participating in it.

How, then should a phenomenon be properly sized and analyzed? Clyde Kluckhohn suggests that comparative studies are a valuable resource. The study of societies different from an investigators' own:

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allows us to better see ourselves. Ordinarily, we are unaware of the special lenses through which we contemplate life. It could not be expected of investigators who did not go beyond the horizon of their own society to perceive the custom that is part of their own thinking. The man of science who studies human questions needs to know as much about the eye that sees, as about the object seen. Anthropology places before Man a great mirror and allows him to see himself in his infinite variety (Medina Robels 1970).

Thus, investigators must understand how those strangers see them and what categories of the strangers' own culture are used to form an image of who the investigator is. This approach allows understanding of attitudes and the foundation for decisions.

This chapter will examine the problem about to be generated for Mexico, and indeed the U.S.-Mexican border region, by a unilateral decision of the United States to line the All-American Canal (AAC) with concrete. This decision, with roots in the economic interests of the Imperial Irrigation District (IID), has generated protests on the Mexican side, and thus has become an international issue.

Much has been said and published on this issue on both sides of the border. One side justifies the lining project and the U.S. right to implement it, while the other justifies why it should not. The root of this controversy lies with the groundwater that is recharged from the canal's seepage and that is used by the farmers in Mexicali, Baja California, to irrigate their crops. Mexican producers would lose this water if the AAC is lined. Currently the issue is being discussed before the International Boundary and Water Commission (IBWC), a binational organization composed of representatives from Mexico and the United States who resolve the two countries' international water issues.

The intent of this chapter is not to establish who is right in this controversy, nor to examine opinions and reasoning on the controversy. The goal is to examine the historical processes that have formed water policy in the southwestern portion of the United States, the water culture generated in that process, and the people, political institutions, and private organizations that helped create

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the vision of water and its use in the extensive arid zone that is a significant part of the American Southwest. This vision constitutes the current American point of view Mexican negotiators must face. The adjustment of both visions of the problem will provide the elements to determine the present and possibly future decisions about the precious and scarce Colorado River water resource.

Unquestionably, water policy and culture in the U.S. Southwest—the result of an historical process of conflicts and adjustments between the seven states that use Colorado River water—has always affected, and will continue to affect, the development of the border region, which includes Baja California, whose only certain source of water is the Colorado River.

THE COLORADO RIVER

Physical Aspects

The Colorado River is not considered one of the great rivers because its volume of water is relatively small. Rather, its importance lies in the fact that its extensive 244,000 square mile basin includes the territory of seven southwestern U.S. states: Wyoming, Colorado, Utah, New Mexico, Nevada, Arizona, and California. As well, the final 100 miles of its route enter Mexican territory and eventually discharge on an extensive delta in the Gulf of California.

Despite of its extensive tributary watershed, which includes the Salt and Gila Rivers, the Colorado River does not have a voluminous usable stream. It is only the sixth largest river in the United States because average annual precipitation in its basin is only 15 inches. Some 90% of its volume is lost through evaporation, and according to data collected from 1922 through the 1930s, it has a usable volume of 15.5 million acre-feet per year (MAF/y)—one-sixth the volume of water carried by the Columbia River. Considering these characteristics and the physical and climatic characteristics of the territories it traverses—and the characteristics of those that could potentially be rescued by its waters—it should come as no surprise that one of the river's historians, Norris Hundley Jr., states that as a consequence of the demands that have been and continue to be

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placed on its waters by its seven bordering states and Mexico, the Colorado River “has been one of the most litigated, regulated, politicized and discussed rivers in the world” (August 1999).

Water Policy and Its Effects on Water Culture in the American Southwest

The political, social, and economic leaders of its seven bordering states intervened in an historical process, representing the interests of the different groups that demanded their right to the specific use of water, according to their needs. As a consequence, a water policy and culture developed that sustained that situation. In this process, the figure of a Salt River Valley native in Arizona stands out: Senator Carl Hayden, who dedicated 67 years of his life in public service to efforts to establish policies for the development and use of Colorado River water.

Carl Hayden was not always a Senator. He began his incredibly productive political career at the age of 23, when he was elected in 1900 to the Salt River Valley City Council. In 1903 he was made a Captain in the National Guard. In 1904 he was elected treasurer of Maricopa County. He was elected county sheriff in 1907, a position he held for five years. In 1909 he was promoted to Major in the National Guard. In 1912 he won a seat as the first representative from the new state of Arizona. He was reelected to that office until 1927, when he was elected Senator, a seat he held until 1969 when, at the age of 92, he voluntarily retired. Hayden died in 1972 at age 94 (August 1999).

Among the various historic events that formed and guided the policies of development and use of Colorado River water, several stand out. On June 17, 1902, President Theodore Roosevelt signed the Progressive Newlands Reclamation Act. This act to reclaim lands by means of significant irrigation projects definitively established the policy that the federal government would undertake the irrigation necessary to rescue, on behalf of agriculture, vast arid regions in the U.S. Southwest to promote their population growth (August 1999).

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On March 14, 1903, the Salt River Project was one of the first 26 reclamation projects authorized by the U.S. Department of the Interior under the conditions of the 1902 Theodore Roosevelt decree. Those 26 projects were part of the national irrigation program in its first decade (August 1999). The project was championed by Hayden and the leaders of the Salt River Valley Water Storage Committee, which later became the Salt River Valley Water Users Association. The users association prevails to this day as the generally accepted form of governance. The Salt River Project had great success in its development, a fact that allowed Hayden to establish a new policy with regard to the administration of federal reclamation projects that allowed the formation of irrigation districts, which in turn facilitated, many years later, the creation of IID.

Hayden always championed the concept of local control of federal reclamation works, even though they were of a public and national nature. In 1917, as a congressman, he persuaded the U.S. Secretary of the Interior, Franklin K. Lane, to transfer the “daily care, operation and administration” of the Salt River Project from the federal government to the Salt River Valley Water Users Association (August 1999). This was the first federal reclamation project to pass into the hands of its users, who would operate and administer them locally. Local control was so successful that it gave way to a new policy that became the blueprint for subsequent federal works throughout the southwestern U.S. (August 1999, Hundley 2002). It was further established, as a fundamental policy, that state residents would have the autonomy to determine the policies for preservation, conservation, and use of their natural resources.

The Great Controversy

When the exodus from east to west began in the United States and the pioneers of the Southwest established settlements, the settlers began the battle over the use of Colorado River water. The seven regions that made up the water basin later became federal territories and eventually part of the United States. Some of these regions first declared themselves republics, as did Texas and California. The exploitation of natural resources, especially mineral resources, cre-

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ated significant economic interests. Conflicts over water use between the states bordering the Colorado River arose to the same extent.

The farmers soon entered the controversy and insisted on defending their rights to water for agriculture, which in this vast semi-desert-like area had great potential for expansion and economic growth, if only the precious resource were transported to Nevada, Arizona, and California. Innumerable and lengthy lawsuits were filed between the states, some reaching as high as the U.S. Supreme Court. Among the best known are *Kansas v. Colorado* in 1907, *Wyoming v. Colorado* in 1922, and the longest-running and most expensive—11 years and \$5 million—*Arizona v. California*, which began in 1952 and eventually ended when Arizona won in 1963. During this long controversy, which for all intents and purposes began in 1907 with the conflict between Kansas and Colorado, Hayden remained active, defending the rights of his home state to use Colorado River water. This ensured the distribution of water was equitable for the lower basin states, Nevada, Arizona, and California.

In November 1917, a California group established the organization League of the West. The organizers, with much political acumen, named Rufus B. Von Klein Smid, Chancellor of the University of Arizona, as the league's president. This greatly pleased the representatives of the Colorado River states, as well as the representatives from Oklahoma and Texas. During 1917 and 1918 the League of the West met several times in San Diego and Tucson, Arizona, and discussed issues such as economic development, tourism, commercial development, and transportation.

Part of the controversy arose between the upper basin states and Arizona and California. The other states were particularly concerned about the foreseeable development of Los Angeles and the Imperial Valley, which would demand considerable volumes of water. Hayden understood the concerns of the leaders of the upper basin states and their fears that, upon the rapid development of the lower basin, lawsuits would be filed based on prior and inequitable allocations of Colorado River water. Adding to these growing fears was the fact that the City of Los Angeles entered the competition for Colorado River water when it announced its need to ensure electricity and

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water for its rapidly expanding population. These fears were justified at a meeting of the League of the West held in August 1920, only four months after a harmonious meeting in Los Angeles. The representatives of the upper basin expressed serious doubts about California and its motives for the Colorado River. Oliver Shoup, Governor of Colorado, sounded the call to arms: "Now is not the time for the Western States that have the principal waters to lose any of their rights for any reason." His state engineer, A. J. McCune, added: "Our main fear is that Los Angeles and the people of the Imperial Valley commit the government to a policy that will interfere with our development" (August 1999).

The Colorado River Compact

These foregoing events convinced the political, social, and business interest group leaders in the seven Colorado River states that the most appropriate place for negotiations would be the U.S. Congress, and that the result could possibly achieve a more equitable distribution of Colorado River water among its users. The final result of all these conflicts was that, by 1920, Congress realized that the development of the Colorado River posed enormous and complex political, legal, engineering, economic, and diplomatic problems (August 1999).

To face these problems and provide an environment for negotiation to achieve the Colorado River Compact, president Warren G. Harding signed into law the Mondell Bill in August 1921 (August 1999). This act created the Colorado River Commission, which would be in charge of carrying out the necessary actions to create a draft Colorado River Compact acceptable to the seven states sharing the Colorado River Basin.

After holding public hearings in Washington, D.C., and meetings throughout the western United States, the commission prepared and signed the compact in November 1922 in New Mexico (August 1999). The stipulations and conditions of the compact divided the Colorado River Basin into upper and lower basins whose demarcation point would be Lee's Ferry, located in the desolate canyons of northern Arizona near the border with the state of Utah.

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The commissioners assigned 7.5 MAF/y to the upper basin, composed of Wyoming, Colorado, Utah, and New Mexico. The Lower Basin, consisting of the states of Nevada, Arizona, and California, was assigned an equal amount from the main stream of the River plus an additional 1 MAF/y under the very ambiguously written and controversial Article III (*b*). According to the commissioners, water for agriculture and domestic use would have preference over power generation. The commissioners also almost completely ignored Mexico's right to use Colorado River water. In the event the United States should recognize that Mexico had rights to use of Colorado River water, Article III (*c*) stipulates that both basins would share the obligation in equal proportions (August 1999).

This blindness of the commissioners and their silence regarding Mexico's possible rights to Colorado River water echoed Hayden's position. In the summer of 1922, while the Colorado River Commission was in recess, Hayden informed the Committee on Irrigation of Arid Lands that:

I do not want to see any treaty with Mexico until we have settled our own troubles in the United States. I shall oppose any kind of Mexican right in the Colorado River until it is definitely and fully determined there is a surplus of water in that stream for which there is no use in the United States (August 1999).

Carefully analyzing this quote in relation to the development currently achieved by California and Arizona reveals there has never been the possibility that a surplus would be granted to Mexico as a permanent right. This clearly provides the perspective of the politicians of the Southwestern United States in terms of Mexico's water needs in the past and for the future. Hayden considered the Mexican issue a problem for the U.S. Department of State and the U.S. Congress, not for the Colorado River Commission.

In the entire historical process related to this controversy and the Colorado River Compact, Mexico had no active role in the defense of its rights, which were derived from the fact that the river discharges into a broad delta in the Gulf of California, within Mexican

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territory. As well, the river was navigable up to the port of Yuma, Arizona, and Mexico had to have control over vessel traffic that used Mexican territorial waters to access the river.

Therefore, the manner in which the Colorado River water reached the Imperial Valley, using the old riverbed of the Alamo River, whose approximately 50-mile extension is within Mexican territory, generates *de facto* the first rights of Mexico to Colorado River water. The possibility that Mexico would argue for rights to these waters was always a concern of Imperial Valley users, as they did not have complete control over the stream; it was also a strong incentive for the creation of their own irrigation district.

MEXICALI VALLEY AND IMPERIAL VALLEY

The long historical process that led to the simultaneous beginning and joint development of the Valle de Mexicali (today the Municipality of Mexicali) and the Imperial Valley (today Imperial County) began long before the Colorado River Compact in 1922. It is rightly said that history is made by men. In the history of the Imperial and Mexicali Valleys, several men of vision and imagination intervened, men who early on saw the agricultural potential of the region, if only they could get Colorado River water to that extensive and fertile land.

In 1849, Dr. Oliver Wozencraft, on his way to San Francisco and the California gold mines, was the first to conceive of a plan for gravity irrigation in the Colorado Desert, later named the Imperial Valley, and thus develop an important agricultural and population center. Although Wozencraft dedicated his life to the project without finally achieving it, his frustrated attempt established the basis for future efforts.

Wozencraft began his stubborn task of bringing together the necessary capital for his reclamation project in 1853. He contracted the services of Ebenezer Hadley, then Los Angeles County Surveyor, who recommended locating a canal to divert Colorado River water at a point that, 40 years later, was designated as the adequate place to begin the project, “a point of rocks adjacent to Pilot Knob imme-

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diately above the International Border” (Dowd 1956). Hadley noted on that occasion the canal would need to pass through Mexican territory.

Wozencraft managed to obtain the support of the California State Legislature in the approval of a bill on April 15, 1859, wherein the state granted “all rights, title and interest, of the State of California, which the State may have at the time, or those it may acquire in the future, on and over the lands described herein.” The land described in the bill included, in general, everything that is today the Imperial and Coachella Valleys. The concession was granted on the condition that within three years of the approval of a bill in the U.S. Congress granting these lands to California, Wozencraft would provide “a permanent supply of fresh and healthy water along the line of travel between the San Gorgona (*sic*) Pass and Fort Yuma, and Cariso (*sic*) Stream and Fort Yuma, in such fashion as ensuring there be a constant and permanent supply, in all seasons and convenient points necessary on the two routes mentioned above” (Dowd 1956). That same year, Congress considered a resolution that nearly 3 million acres of land in the Colorado Desert be transferred to California for reclamation and irrigation. Wozencraft remained in Washington many years to ensure some action by Congress on his plan; his efforts did not end until his death in 1887 (Dowd 1956).

In 1879, John C. Fremont, a great promoter and at the time interim governor of the territory of Arizona, proposed a project that greatly upset his constituents on the banks of the Colorado River. Fremont supported a plan to alter the climate of the Imperial Valley by flooding the Salton Sink (today the Salton Sea) with Colorado River water. Arizona residents vigorously opposed the measure.

In 1892, another 19th century pioneer arrived in the region, who finally achieved Wozencraft’s dream. Engineer Charles Robinson Rockwood arrived in Yuma in September 1892, having been hired as chief engineer by the Arizona and Sonora Land and Irrigation Company of Denver. He was accompanied by C. N. Perry and a team of engineers. The purpose of the trip was to perform a survey to explore the possibilities of building an intake to channel Colorado River water to irrigate and develop 1.5 million acres the company owned in Sonora (Heffernan 1930).

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While investigating the possibility of irrigating lands along the border, Rockwood observed, as had Wozencraft before him, that the Imperial Valley could become an extensive, useful garden year-round if water were brought to its fertile lands.

In the meantime, however, while these surveys were in progress, I had taken a team and made a trip into that portion of the Colorado Desert, known today as the Imperial Valley. The result of my investigation at that time was such that it led me to believe that, without a doubt, one of the most worthwhile irrigation projects in the country would consist of bringing together the lands of the Colorado Desert and the waters of the Colorado River (Rockwood 1930).

Rockwood sent to the Denver company a preliminary report indicating that the Sonora project was not economically feasible because the area of farmable land did not guarantee recovery of the enormous investment required (Heffernan 1930). However, Rockwood, in that same report written in early 1893, recommended performing surveys to prove or disprove his belief in the merits of the project for the Colorado Desert. He was authorized to run preliminary parallel lines to determine levels, acreage of land that could be reclaimed and made available for agriculture, and the approximate cost of construction (Rockwood 1930).

The response from Denver was so enthusiastic that officials there immediately took steps to change the company's name from Arizona & Sonora Land Irrigation Company to Colorado River Irrigation Company, and they maintained that they had \$2 million available to undertake the project if the survey results were favorable (Rockwood 1930). With these assurances, Rockwood began making his vision of the Imperial Valley a reality. The path was plagued with frustrations, owing to financial problems and legal obstacles within the United States as well as internationally, because any diversion of Colorado River water to the Imperial Valley had to inevitably cross through Mexican territory.

The first problem arose in 1893 when the directors of the Colorado River Irrigation Company suffered financial setbacks to such a degree that they were unable to continue with the project

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despite the results of the surveys, which were even more favorable than initially estimated (Rockwood 1930). For Rockwood's good fortune, during his stay in Yuma in 1892 he met Dr. William T. Heffernan, who was employed by the U.S. government as a surgeon there. They established a great friendship and mutual appreciation that lasted the rest their lives (Heffernan 1930). Very soon Heffernan made Rockwood's project his as well, to the point of providing on several occasions the necessary funds to continue it.

By the time the Denver company abandoned the project, Rockwood had paid company bills out of his own pocket and ultimately had to cover personnel salaries as well. Out of resources and with no hope of recouping the money he had paid out on behalf of the company, in addition to several months of his own salary he had not been paid, he sued the Denver company and obtained a lien against all their Yuma assets, including engineering equipment, reports, and logs of the surveys performed. When these assets were auctioned, Heffernan acquired the entire lot for \$7,800. This became Heffernan's first investment in the Imperial Valley reclamation project (Heffernan 1930).

Because of the problems surrounding the Colorado River Irrigation Company, Rockwood and his associates, Heffernan among them, set up the California Development Company in New Jersey on April 25, 1896; Rockwood was named vice-president (Dowd 1956).

According to its bylaws, this company was authorized to build and operate irrigation systems; store and distribute water on its own behalf as well as that of third parties; buy and sell real estate both in the United States and in Mexico; buy and sell water rights; establish settlements; build roads, railroads, and other means of transportation; lay telegraph and telephone lines; build power plants and water treatment utilities; and establish cities. In 1899, Rockwood was named president of the company and remained in that office until 1900, when George Chaffey was hired as president (Dowd 1956).

As a result of negotiations with Chaffey, he took charge of the project and under the terms of a contract signed in April 1900, he was granted full control of the California Development Company and its Mexican subsidiary. In exchange, Chaffey would finance the

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head-works and construction of the canal that would bring Colorado River water to the Imperial Valley. The total cost would not exceed \$150,000 and the canal would have a water flow delivery capacity of 400,000 AF/y. Chaffey would be reimbursed for the cost of construction in addition to \$60,000 as compensation for his services for five years (Dowd 1956).

Finally, at 11 a.m., on the morning of May 14, 1901, the first Colorado River water was diverted to the Alamo River and, passing through the Mexicali Valley in Mexican territory, arrived in the Imperial Valley on June 21, 1901 (Gobierno del Estado de Baja California 1958). However, international legal problems, questions concerning the control of the water diversion route south of the border, problems related to the Mexican Revolution, and the presence of American speculators in Mexican territory—who frequently operated against the interests of the Imperial Valley—generated a series of crises for Rockwood, the Colorado Development Company, and the residents of the Imperial Valley itself (August 1999).

The irregular manner in which the Alamo River was used in the diversion of Colorado River water to the Imperial Valley caused several problems for the project's promoters. The land through which the Alamo River flowed was within Mexican territory and was the property of a Mexican citizen from whom the land had to be purchased. Later on, another problem arose when foreign companies were legally prohibited from owning land in Mexico, as were operating companies that provided public services such as delivery of water.

To resolve these jurisdictional problems, two companies were formed: the California Development Company in the Imperial Valley and the Sociedad de Irrigación y Terrenos de Baja California in the Mexicali Valley (Dowd 1956). Thus, the U.S. company signed the necessary contracts with the Mexican company to facilitate the conveyance of Colorado River water and its delivery to Imperial Valley users. On December 28, 1900, a contract was signed in which the California Development Company committed to deliver to the Sociedad de Irrigación y Terrenos de Baja California, at Hanlon Heading on the U.S.-Mexican border, sufficient water to allow the Mexican company to supply the lands of the Imperial Valley and

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those in Mexico. In addition, the California Development Company agreed to build, operate, and maintain the principal canal system on the Mexican side of the border.

The California Development Company continued to have operating problems, such as inefficiency in delivering water to Imperial Valley users. There were also serious financial problems and lawsuits against both the Mexican and U.S. companies, including those due to the lack of proper operating authorizations and concessions that had to be granted by the Mexican government for the operation of the Mexican company. In truth, this company was a public service utility and the Mexican government had not granted the necessary authorization. The concession was granted on May 17, 1904, by an act of the Mexican Congress and signed by the president on June 7, 1904. That same concession authorized the Mexican company to divert, within Mexican territory, a volume of 284 cubic meters per second of Colorado River water through its canal system, provided neither third party interests or navigation were affected. The company was authorized to send the waters transported through its canals to the Imperial Valley for irrigation, provided sufficient volume was set aside to service irrigable lands in Baja California through this system, without exceeding one half of the volume of water that should pass through the canals. Later on, the Mexican government would interpret this provision in the concession to mean one half of the volume flowing at any given time, after deducting the amounts necessary for regulation and seepage in Mexico (Dowd 1956).

THE IMPERIAL IRRIGATION DISTRICT (IID)

What finally determined the financial ruin of the California Development Company was a series of Colorado River floods in 1904 and 1905. The Gila River overran its banks and expenses incurred to stop the flood that resulted were covered by loans from the Southern Pacific Railroad Company. The California Development Company was unable to pay back the loans, and this later led to a takeover by the railroad company. Once the flood was controlled, though, the California Development Company was subjected to innumerable lawsuits for damages and payment of past-due

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debts. The Sociedad de Irrigación y Terrenos de Baja California was facing settlement of a lawsuit totaling 900,000 pesos in gold. There was no doubt that both companies were bankrupt. To satisfy the payment of the lawsuit brought by the Southern Pacific Railroad against the Sociedad, a new Mexican company was established, the Compañía de Terrenos y Aguas de Baja California, which acquired all the assets of the Sociedad in a sale closed on January 28, 1911. The price was 325,000 pesos in gold, approximately 36% of the amount owed (Dowd 1956).

This sale left the old Mexican company without assets with which to respond to the remaining debt of 375,000 pesos in gold and new lawsuits for damages, which increased its debt to 2 million pesos. The sale also freed the new Mexican company of all contracts with the California Development Company and the water users' mutual companies that had organized in the Imperial Valley. This could have given the new Mexican company total control over the development of the Imperial Valley (Dowd 1956).

This legal maneuver isolated the problem in Mexico and, in a way, allowed the irrigation system in Mexicali to continue operating and support the Imperial Valley's system. This was only a reprieve, though, because the California Development Company continued to have financial problems not only with the Southern California company but with other creditors as well. This chain of problems generated discontent and uncertainty among the residents of the Imperial Valley and on July 14, 1911, they voted to create IID (Dowd 1956).

The creation of the irrigation district in no way resolved the serious problems of past-due debts of the California Development Company or of the two Mexican companies, the Asociación de Irrigación y Terrenos de Baja California and the Compañía de Terrenos y Aguas de Baja California. In the meantime, the Southern Pacific Company had acquired all rights to the debts, which finally made it possible to resolve in favor of IID the assets of the companies in conflict. IID, through a bond issue, obtained the necessary funds to buy the Southern Pacific Company's interest in all the assets, which consisted of the canal systems, water rights, and properties of the California Development Company and the two Mexican companies, in June 1916 (Dowd 1956).

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Thus, IID, with its Mexicali subsidiary *Compañía de Terrenos y Aguas de Baja California*, secured the water for the Imperial Valley producers and, at the same time, the operation and management of the existing irrigation system in the Mexicali Valley. While this binational operating system existed, the Mexican company's managers were always Americans designated by IID. Even so, IID users were not satisfied because they did not have true control of the supply stream that flowed, for the most part, through Mexican territory. In addition, the almost certain expansion of agriculture in the Mexicali Valley, which would require ever greater volumes of water in the future, was yet another point of concern.

Frequently, the interpretation and judgments made of historical events, especially those that take place between two countries, contain elements of ethnocentrism—even more so in the case of historic events shared by border communities, as is the case of the development of the Mexicali and Imperial Valleys. This misinterpretation is usually applied to the role played by three companies involved in the development of Mexicali Valley's agriculture and economy. The first is the Colorado River Land Company, which had acquired most of the arable land in the Mexicali Valley and owned the agricultural irrigation canal system. The second was the *Compañía de Terrenos y Aguas de Baja California* (which took the place of the *Sociedad de Irrigación y Terrenos de Baja California* established in 1898) (Dowd 1956). This company was a subsidiary of IID and was in charge of operating and managing the water deliveries it needed.

The third company to play an important economic role was the *Compañía Industrial Jabonera del Pacífico*, which for many years mainly provided the necessary financing for cotton production. In addition to financing, the company provided (through a group of field inspectors paid by the company) technical support for the producers to ensure the best production for their clients. Most of the shucking and baling of cotton was conducted at the company's industrial plant in Mexicali. Soap was manufactured at the same site using cotton seed oil. The company had a compressor to extract cotton seed oil and obtained two important sub-products—the pulp left over from the extraction of cotton oil was used as cattle feed,

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and the cotton waste was used to fill mattresses and quilts. For several years the company also manufactured vegetable lard from cotton seed oil.

What criteria can be used for an objective interpretation of the role of these three companies? They were historically considered by Mexicans as enclaves of foreign interests and not particularly favorable to Mexican residents of the Mexicali Valley. As well, the American partners of IID ensured the prompt supply of the water they required. It cannot be denied that the Colorado River Land Company organized and rationalized, in some way, the exploitation of farmland in the Mexicali Valley. The fact that the policy was to rent or parcel out the lands preferentially to Chinese, Japanese, and Hindus instead of Mexicans made the company unpopular, which eventually led to its disappearance when its landholdings were expropriated under agrarian reform in Baja California.

The Colorado River Land Company marks the end of an historic time of land ownership in the Mexicali Valley. Given that the company owned significant parcels of land with agricultural potential in the Mexicali Valley, and that its business was to exploit these lands—which involved an ever-increasing demand for water—the possibility of growth in conjunction with the problems experienced before IID was created led to the conclusion that it would be necessary to divert Colorado River water to the Imperial Valley through a canal that was completely within U.S. territory (Hundley 2002).

THE ALL-AMERICAN CANAL

Having achieved the organization of their irrigation district and, to a degree, having resolved the aforementioned problems, through IID the residents of the Imperial Valley began an intense lobbying campaign in Congress toward their goal of building the AAC, over which they would have absolute control. This canal would also free them of any intervention by or interference from Mexico that could jeopardize their water supply. Imperial Valley water users were concerned that their water supply, though under U.S. jurisdiction, immediately passed into Mexican territory—falling under the jurisdiction of the Mexican government—and that its flow was completely within the Mexicali Valley and its transportation was

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managed by a Mexican company that delivered the water to IID at the border. Note that the water delivered to IID not only covered the water demands of agriculture but also satisfied all domestic and industrial services for cities, towns, and farms (Dowd 1956).

In accordance with the 1904 concession by the Mexican government, Mexico had the right to half the water flowing through the canals in Mexicali, which to IID meant the loss of that amount in the available water supply for the Imperial Valley. With the AAC, this loss would be recovered and available for the expansion and development of the Imperial Valley. Likewise, there was the legal question about whether or not IID had the right to own a Mexican company and the possibility the Mexican government would take up the issue. An adverse decision could annul the concession by which the Imperial Valley water supply was allowed to be conveyed within Baja California territory in the first place (Dowd 1956).

Another problem facing the Imperial Valley residents was the price they could charge for the water delivered to Mexicali Valley users, which, by Mexican government decree, was held at a rate of 50 cents per acre-foot until 1919, which is when the *Compañía de Terrenos y Aguas de Baja California* announced that the authorized price was below actual cost. The Mexican government authorized an increase to 86 cents per acre-foot, which remained in place until 1931. The price of water charged to Mexicali Valley users was always a point of controversy between them and the landowners of the Imperial Valley, who argued that this quota was insufficient to cover the real operating costs and the reserves necessary to resolve flooding (Dowd 1956).

Making matters worse, in January 1931 the Mexican government authorized a 30% reduction in the price of water to Mexican users (the reduction was from 1.40 pesos per thousand cubic meters to 1 peso—in U.S. dollars it would mean a drop from 86 cents to 62 cents per acre-foot). The reduction was to be for just one year because the Mexican company planned to recoup the resulting losses in the following years. However, in December 1931, and without prior notification, the Mexican government issued a second order reducing the cost by an additional 25%. Upon protest from *Compañía de Terrenos y Aguas de Baja California*, this last order was rescinded; however, the amendment stipulated that the previous

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30% reduction would remain in place indefinitely rather than for only one year. The Mexican government claimed poor economic conditions in the country made the cut necessary. In addition, Mexico abandoned the gold standard in July 1931, generating additional exchange rate losses for IID. This situation, coupled with a drop in farmable land, led to a loss of income from water sales to the Mexicali Valley. This income had averaged more than \$550,000 in the previous eight years, but fell to \$199,000 in 1931 and \$86,000 in 1932 (Dowd 1956).

For many years the efforts of Imperial Valley residents on behalf of their hoped-for AAC failed due to the opposition of the legislators from Arizona, especially Carl Hayden. Starting in 1911 the attorney for the Imperial Valley, Phil Swing, and promoter Mark Rose helped the valley organize IID, which had sufficient legal standing to name directors, issue bonds, assess taxes, condemn property, and most importantly, buy and operate the valley's irrigation system. In 1917, IID managed to convince then-U.S. Secretary of the Interior Franklin Lane to order a study to determine the feasibility of the AAC. Secretary Lane agreed on condition that IID pay two-thirds of the cost. This condition was quickly accepted and the All-American Canal Board was formed, consisting of three engineers who, in December 1918, recommended construction of the canal at an estimated cost of \$30 million. Strong opposition to the project came quickly from Harry Chandler, owner of the *Los Angeles Times*. Chandler headed a powerful syndicate of business owners who held more than 336,000 hectares (840,000 acres) in the Mexicali Valley that they rented to Mexicans, Chinese, and Japanese.

In the face of this threat, the response of the residents of the Imperial Valley was to "repudiate Chandler and associates and the 'Los Angeles Syndicate' in a referendum in January 1919 where the project was approved by an overwhelming vote" (August 1999). The opportunity for Imperial Valley residents to win their AAC presented itself in the Boulder Canyon Project, proposed by Arthur Davis, an engineer with the U.S. Reclamation Service, a "tireless defender of the concept of integral development of the Colorado River Basin" (Hundley 2002). "The term 'Boulder Canyon Project'

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hides a multidimensional task that had a profound effect upon the state, the West, the entire country, and northwest Mexico” (Hundley 2002).

Davis wanted to channel the efforts of Imperial Valley residents by convincing them that by joining the Boulder Canyon Project, which included projects to control the Colorado River through dams, they would win their canal more quickly. Davis would point out that the canal would not be safe against river surges without these control projects. Finally, his efforts worked and in April 1922 Swing, by now a congressman representing Imperial Valley, and Senator Hiram Johnson of California, formerly the state’s progressive governor, introduced the Swing-Johnson or Boulder Canyon Bill, which provided for a large dam in the lower part of the river “at or near Boulder Canyon.” It would be a hydroelectric power plant generating sufficient revenue to pay for the cost of the dam and the construction of the AAC (Hundley 2002).

Hayden continued to oppose the project with delay tactics and his political influence as one of the senior members of the House Committee on Irrigation of Arid Lands. He opposed the bill, saying it was “purely for the benefit of California” (August 1999). Finally, on May 25, 1928, the House approved the bill and sent it to the Senate, placing the Senate in the national spotlight.

On May 28, 1928, now-Senator Carl Hayden participated in one of the most celebrated events in the history of the chamber; together with his colleague from Arizona, Senator Henry Ashurst, Hayden “filibustered” the Bill.¹ With only two days left in the session, the two Arizonians attempted to block the Bill by speaking... In his first speech from the floor of the Senate, Carl Hayden, “The Silent Senator,” spoke without pause for nine hours before an almost empty Chamber. When Henry Ashurst took the floor, the opposing Senator, Hiram Johnson, proposed extending the session until June 5, in an effort to wear down the Arizonians; the motion was not approved, by a vote of 39-41. Accusations and threats of fisticuffs filled the Chamber while the Senate closed its session amid a “savage disorder” on May 29, 1928... An exhausted Carl Hayden confessed to a friend after his

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filibuster... “It is true that the Swing-Johnson Bill, if brought to a vote, would have been approved by both Houses... I sincerely doubt its passage can be avoided in the next Congress” (August 1999).

The 70th Congress opened its second session on December 5, 1928 and, in spite of Hayden’s opposition, the Senate passed the Boulder Canyon Project on December 16 by a vote of 64–31. Two days later, the House passed the Senate’s version 167–122. President Calvin Coolidge signed the bill three days later, putting an end to one phase of the Colorado River controversy (August 1999).

This important historical event was the beginning of an era of unparalleled development in the Colorado River Basin. The approved hydraulic projects included the construction of Hoover Dam and the AAC. “Few measures have had a greater impact on the Pacific Southwest than the action of Congress which authorized the construction of Hoover Dam and of the All American Canal in 1928” (August 1999).

The AAC ensured the water supply for the Imperial Valley at the expense of the growers in the Mexicali Valley. Upon the construction of the AAC it was no longer necessary to divert Colorado River water to the Imperial Valley through the Alamo Riverbed, which would surely affect the supply to the Mexicali Valley. An additional circumstance was that the irrigation system in the Mexicali Valley was owned by *Compañía de Terrenos y Aguas de Baja California*, a subsidiary of IID.

When the AAC began operating, Mexico began the fight for a treaty with the United States that would guarantee Mexican rights to Colorado River water. The 1944 Water Treaty assigns Mexico a guaranteed annual volume of 1.5 MAF of Colorado River water (*Gobierno Estado de Baja California* 1958).

The Boulder Canyon legislation, resulting in the construction of Hoover Dam which in its time, 1935, was one of the largest dams in the world, allowed the Colorado River to be controlled and therefore the possibility of building the All American Canal, which began to deliver water to the Imperial Valley in 1942. The water supplied was subsidized, as the federal government did not charge interest on the expenditures incurred in building the irrigation system, and the

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irrigable area of the Valley was stabilized at approximately 440,000 acres, providing in great measure a security and prosperity never before seen; it also helped to create and strengthen a landholding elite in the area (Hundley 2002).

...While the Boulder Canyon legislation wended its slow and troublesome way through Congress, the Imperial Valley was undergoing a great process of change over the entire acreage subject to irrigation, which was being transferred from small growers to a select group of “absentee landlords” with properties that averaged between 300 and 700 acres, and some as large as 3,000 acres (Hundley 2002).

A combination of good water years without the danger of flooding helped to generate millions of dollars of revenue for agriculture; these profits, the promise of a regulated river and the All American Canal had attracted large sums of investment capital from Los Angeles, San Francisco and other places. The financiers and speculators bought up the small parcels and transformed them into large-scale industrial farms with managers in charge who, naturally, sought to ensure the maximum yield. Most of the few growers who did not sell to the outside offers used their farming profits, expanded their bank credit sources to increase their properties, hired managers, and retired to the cooler temperatures and comforts of the coastal cities (Hundley 2002).

This left the Valley populated by a small handful of owners and operators at the top of the social pyramid and a great lower class of workers, mostly of Mexican origin, who worked for the agro-industry keeping the canals open and harvesting the abundant crops (Hundley 2002).

Three decades later, the average farm size was 200 hectares, with some as large as 2,000 hectares to 3,600 hectares (Hundley 2002).

At the same time by then, the Imperial Valley was on the road to achieving one of the highest poverty levels in the nation, with close to 90% of agricultural workers (most Mexican by birth or paternity) classified as “lower class” in a study of social stratification in agricultural areas of

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the United States. One less point for the dream of small irrigated farms and social reform in the Imperial Valley (Hundley 2002).

Frequently, history provides important lessons about how the aspirations of societies and men of vision are achieved. History also provides interesting contrasts. The development processes of the Mexicali and Imperial Valleys, as well as the results manifest in each today, are one of these lessons in contrast. While in the Imperial Valley farmland came to be concentrated in the hands of a few, in the Mexicali Valley agrarian reform (*reforma agraria*) in 1937 distributed the extensive landholdings of the Colorado River Land Company to *ejidos* of Mexican farmers who did not own land.

Agro-industry in the Imperial Valley generates more than \$1 billion annually. However, Imperial County is one of the most economically depressed counties in California, with an unemployment rate near 30% and an economy based on agro-industry, commerce, and services. According to the last census its population is 140,000. A large percentage of the labor force used in commerce, services, and agro-industry in Imperial County reside in the city of Mexicali and cross the border daily to work and to return home. The county does not have a diversified industrial sector. The economy of the City of Calexico, based mainly on commerce and services, depends completely on retail purchases made by the population of Mexicali.

The Mexicali Valley, though, currently does have a diversified agro-industry, which still provides important income for the region. An important industrial sector is based in 21 industrial parks. A strong home-building industry enjoys constant demand due to constant demographic growth. And Mexicali has large and modern shopping centers. The total population of the municipality of Mexicali is 764,602, and the city of Mexicali has a population of 549,873; the unemployment rate is 10% (INEGI 2000). There are two important universities in Mexicali, including Universidad Autónoma de Baja California, which as a public institution is one of the most highly regarded universities in all of Mexico. One could conclude that the “American dream” of Oliver Wozencraft, Charles Robinson Rockwood, and W. T. Heffernan has been more than achieved in Mexicali, but not in the Imperial Valley.

CONCLUSIONS

This chapter described the historical development of an extraordinary battle for control and use of Colorado River water that began in 1849, and in which the main protagonists were, and continue to be, the residents of the vast southwest region of the United States, home of the Colorado River Basin and an area where extensions and diversions of the river's waters have benefited these residents. Despite the fact that, at certain historical moments, parts or elements of the great controversy are resolved by reaching a consensus, conflicts continue today in the disposition of certain types of waters, such as the AAC, where elements of international relations are also involved. But what is interesting for these conclusions is trying to establish some of the features of "hydropolicy" and the water culture generated by the experiences and actions of those responsible for carrying on the fight, those who managed to negotiate the necessary agreements to achieve an equitable distribution of Colorado River water between the seven southwestern U.S. states that share its basin. It is possible that the mentality of those currently responsible for water policy in the United States, and especially in the state of California, corresponds to the original perspectives of their predecessors. If that is the case, Mexican negotiators must keep this background in mind when designing their negotiating strategies. But they must keep in mind, too, the level of new, shared interests between Mexico and the United States regarding North America, especially as represented by the North American Free Trade Agreement (NAFTA).

Several aspects of water policy, or "hydropolicy," became criteria of general application. They are detailed below.

The Concept of Water Property in the United States

- The concept of "first come, first served" was used in California to resolve controversies over who had water rights, which were always scarce in California, between gold prospectors during the "Gold Rush"

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- States, based on their autonomy, have the right to determine the use of the natural resources in their boundaries
- Water users own the resource and can freely dispose of or reclaim at any time the use of water over which they have primary rights and over which they may have lost or ceded temporary control

A recent example of these above points is the fact that for many years California used part of the water quota assigned in the Colorado River Compact to the state of Arizona, which could not use the entire assigned volume. Currently, and due to the significant accelerated development of the Tucson and Phoenix areas, Arizona notified California that it may not continue to use this water. This is the same criteria maintained by IID with regard to the groundwater problem generated by seepage from the AAC.

The Concept of Waterworks and Land Reclamation Programs

The federal government, with federal funds, is the only entity capable of undertaking the necessary irrigation and hydroelectric projects.

The Concept of Irrigation District and Systems Management

The federal government, once the project is concluded and if it is public, must turn it over to local control for its care, maintenance, management, and control. It is important to distinguish between the term “hydropolitics” used by August (1999), and the concept of “water culture.” Hydropolitics, for August, has the connotation of an historically long legislative process that determined public policy for the use and management of the resource, assigning clear roles to the state and to the various citizen, water-using actors. Water culture refers unmistakably to an historically long social process that begins with the arrival of the first pioneers to colonize the U.S. Southwest. They developed a perception about water—a scarce resource—and very early on identified what access to it would mean

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for the welfare, progress, and security of their communities. The concept of “first come, first served” was the result of these settlers’ experiences. From the beginning, the settlers determined that the use of water would be primarily for agriculture, and the defense of their right to that use determined their demands in terms of legislation that would ensure that objective.

ENDNOTES

¹ “Filibuster” (obstruction) is a U.S. political strategy used by legislators to prevent a vote on a bill or issue under discussion. The member requests the floor and speaks non-stop, as long as necessary for the session to end and the matter to be held over for voting in the next session. The member may not stop speaking or yield the floor to a member of the opposing party. Members of the same party may take turns speaking during the filibuster.

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