



The long-awaited Central Arizona Project has become a river of red ink in the eyes of many farmers because of high water prices and lower-than-expected cotton prices.  
*Michael Stoklos photo, John A. Louder illustration.*



## The Central Arizona Project: Water with a bitter twist

*By Lorraine B. Kingdon*

COTTON HAS BEEN KING OF ARIZONA CROPS FOR NEARLY A century. That may change. In fact, changes in the state's agriculture already are underway, largely due to the impact of the Central Arizona Project.

Paul Wilson paints a vision of the future that features higher value crops in addition to cotton, harvested several times year-round and intensively managed. Wilson, a University of Arizona agricultural economist, was commissioned by Arizona Governor Fife Symington to study the impact of CAP on agriculture.

But the current reality is one of old dreams that aren't working out as planned. The effects of Central Arizona Project (CAP), now that it is nearly completed, differ almost totally from most predictions of 50 years ago. And, Arizona agriculture may never be the same.

"The expectations were that non-Indian agriculture would buy between 60 and 80 percent of Arizona's Colorado River allotment of 1.5 million acre-feet of water during the next several decades," Wilson says in his report, "An Economic

Assessment of Central Arizona Project Agriculture."

Later, as central Arizona urbanized and Indian communities became ready to accept CAP water for their farms, planners theorized that the state's farmers would have less access to CAP water.

But, it hasn't happened that way, Wilson says. Instead of rushing to tap the CAP, farmers are turning away from it. Growers on only half the agricultural land in Maricopa, Pinal and Pima counties have contracted for CAP water. In addition, the amount of CAP water actually purchased by non-Indian agricultural districts dropped by 48 percent between 1989 and 1991.

The reason? Cost. "Farmers simply aren't buying CAP water; it's too expensive," Wilson reports. Many cotton growers aren't able to pay its price and stay in business — and the problem goes beyond the cost of the water itself.

Cotton is, by far, the most important crop in areas served by CAP canals. However, yields of both Upland and Pima varieties have been going down since 1988. Cotton prices have

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fluctuated widely and, in general, have gone down.

"This creates a cost-price squeeze for growers," Wilson says. He estimates that a farmer on a typical Pinal County farm can afford to pay about \$38 per acre-foot of water. Actually, growers are willing to pay somewhere between \$20 and \$40 per acre-foot.

Many cotton farmers are using alternative sources of water so they can stay in business, at least temporarily. They're irrigating with ground water from wells, pumped with preferentially priced hydroelectric power. This power is critical to the farmer's economic survival, Wilson says, but amounts are limited. At the most, 120,000 acres could be farmed using only preferential power.

Using ground water from wells presents problems, too. Growers who designed their irrigation systems to require high-volume flows of water may have difficulty when they use the smaller-volume wells.

Finding any cost-effective water supply may be difficult in the future.

At a cost of \$52 per acre-foot, CAP water is not competitively priced relative to ground water, in most districts. That situation changed slightly in 1992, when the indirect-recharge program successfully priced CAP water more competitively with ground water, increasing the demand by 38 percent.

Additional complications are causing less-than-expected agricultural usage of CAP water.

The 1982 Reclamation Reform Act limits farms that are qualified to use CAP water to 960 acres and no more than 25 owners. The latter limitation affects Maricopa County farms, in particular, because much of this land is owned by investment and development companies, Wilson says. Many of the corporate landowners are prohibited from contracting with the Central Arizona Water Conservation District (CAWCD).

Typical farm-financing methods pose another obstacle. Most, if not all, cotton growers require loans at the beginning of every season to finance the crop until harvest. The guidelines banks use for making these loans are more strictly enforced, indirectly limiting growers' ability to use CAP water.

In the 1970s and 80s, land values were steadily increasing, assuring the creditors of loan repayment even if crops

failed that year. The land could always be sold to repay loans.

That's no longer true; since the mid-1980s, agricultural land values have decreased. Today, lenders look at cash flow. Will the farmer be able to pay back annual loans from selling the cotton crop?

Over time, cotton gins and other businesses have become major lenders in CAP districts. However, these non-bank lenders are under the same financial pressures as the banks since they also must borrow their loan funds from commercial banks.

The bottom line: Relatively higher water costs in CAP districts make these growers higher risk borrowers in the eyes of all lenders, Wilson says.

The result is that financially marginal farms are having a tougher time getting operating cash, and many have gone out of business, particularly in Pinal County. Obviously, the fewer farms, the less need for CAP water.

The cynical Phoenician or Tucsonan might ask, "So a few farmers go out of business — so what?"

Wilson contends that, although CAP agriculture does not dominate the economies of Maricopa and Pinal counties, its continued economic health is important. Even with only 49 percent of CAP-eligible acreage being farmed in 1992, the farms still generated employment for nearly 3,700 people and contributed, directly and indirectly, about \$282 million to the counties' economies.

Wilson says that repaying the enormous amount of money required to build the Central Arizona Project is a tri-county debt. If agriculture uses less CAP water than predicted — and therefore pays less money into the project — all taxpayers and urban water users will eventually have to make up the difference. "Water prices of \$150 to \$200 per acre-foot, and an increase in property taxes are likely consequences of further reductions in agricultural demand," Wilson's report states.

He traces the scenario. Take-or-pay provisions in the CAP agricultural contracts will create a financial burden on agricultural water districts. Financial problems could force the districts to default on those payments and on their CAP contracts.

Limited purchases of CAP water by farmers — or none at



**Pinal County farmer Rodney Shedd hopes his proximity to the CAP canal will enable him to use less groundwater, which is expensive to pump. Farms more distant from the canal face the huge expense of developing a distribution system, putting the CAP water beyond the reach of many growers.** *Michael Stoklos photo*

all — will shift the costs of interest, operation, maintenance and replacement of equipment to the Central Arizona Water Conservation District, municipal and industrial users — in other words, to non-farmers.

As non-payment of acreage assessments by individual farmers occurs, increased stress is placed on the districts that are obligated to make CAP debt payments — a sort of inverse pyramid of financial responsibility. Farm bankruptcies, delinquent assessments on state lands and delinquent tax payments — all hurt the districts.

The repercussions go far beyond an individual farmer's credit woes. Irrigation districts are political subdivisions of the State of Arizona, similar to municipalities. If they default on their private bonds, it could have an adverse impact on the bond ratings of local school, road and fire districts.

The current take-or-pay provisions in CAP contracts will drive irrigation districts to default on those contracts, Wilson predicts.

As they default, the districts will lose their right to CAP water. That, too, has far-reaching results.

"Without CAP contracts, it is unclear how the water demands for the future economic and demographic growth of Pinal County will be met," Wilson says. In addition, still

higher prices for CAP water — caused by completing the project and by continued low water purchases — will continue the cycle of poor demand. Without some financial relief, agricultural use of CAP water will decline until farmers only irrigate with it during June, July and August, the peak water demand periods. Even then, farmers will only buy CAP water if it is priced at or below its marginal value in production.

Wilson has forecast the impact of an even further reduction in CAP acreage. Should 1992 acreage levels drop by one-third in the future, the result would be a loss of \$94 million in aggregate output in Maricopa and Pinal Counties, and the loss of more than 1,200 jobs — equivalent to losing a large manufacturing employer.

He finds no easy answers to the CAP puzzle.

"Any resolution of these issues must be a composite solution, analogous to putting together a multi-piece puzzle," Wilson says. "CAP agriculture should be a piece of the puzzle." Wilson proposes the formation of a multi-agency task force to restructure CAP, both operationally and financially.

"A timely search for a least-cost solution is in the best interest of the tax- and rate- payers in the CAP service area." The questions: "Who pays?" "When do they pay?" and "How much do they pay?" need answers.