A drop in the bucket

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Susan France

A few years ago, farmer Paul Kehmeier decided not to irrigate some of his alfalfa fields for part of the season, and instead take advantage of a pilot program that paid him money to leave his water in the larger Colorado River system. It was a risky decision for Kehmeier. In Colorado, which has seen a century or more of water battles, no one could say for sure how fallowing his land might impact the soil or his water rights. But the Western Slope farmer also understood that continuing to irrigate his land carries its own risk, because the current historic drought threatens not only the survival of the Colorado River, but that of everyone in the Southwest who depends on its water — an estimated 40 million people.

“I think it’s in my best interest to cooperate on some of the bigger challenges facing the Colorado River Basin,” says Kehmeier, who grows hay in addition

to alfalfa on his family farm in Eckert, Colorado. “I don’t sit around all day worrying about compact calls or if the almond farmers in California are getting enough water. But I think it’s good for me to look a little bit beyond the boundaries of my farm.”

Kehmeier worked with the Colorado River System Conservation Pilot Program (SCPP) to see if fallowing some of his land for part of a growing season could be a viable option not only for his business, but also for broader systematic conservation.

What started as a two-year program in 2015 was extended through 2018, but on June 20, the Upper Colorado River Commission (UCRC) that oversees the program passed a resolution suspending the upper basin SCPP. The Commission will now focus on addressing the larger legal and logistical questions that must be dealt with before any full-fledged demand management program based on the SCPP model could be launched. And while most people involved in the pilot program see the SCPP experiment as a success, all acknowledge the future difficulties of launching a full-scale version.

The Problem

Agriculture uses about 80 percent of the water taken out of the Colorado River to irrigate approximately 5.7 million acres of land both within the river’s basin and outside of it in places like California’s Imperial Valley.

The goal of the SCPP was to test the theory that paying farmers to temporarily and voluntarily fallow their fields could be “a feasible method to partially mitigate the decline of or to raise water levels in Lake Powell thereby serving as a useful tool (in the) drought contingency planning processes in the Upper Basin,” according to a final report on the program released in February. The idea being that paying farmers to not irrigate land for short periods of time could play a pivotal role in creating a demand management system that could potentially keep agricultural communities economically vibrant, while at the

same time maintaining water levels at Lake Powell.

The UCRC considers Lake Powell another key part of any future system, which is problematic given it's currently threatened. At the end of June, the lake was only at 52 percent capacity, with unregulated inflow volume at only 33 percent of average, according to the Bureau of Reclamation. The agency predicts the reservoir will continue to decline every month for the rest of the year, eventually reaching an estimated low of 48 percent capacity.

These low levels at Lake Powell could trigger a compact call on the Colorado River. Such demands for additional water by the lower basin states of Arizona, Nevada and California on the upper basin states of Wyoming, Colorado, Utah and New Mexico are permitted and governed according to the 1922 Colorado Compact agreement. In addition to a potential compact call, stakeholders are also concerned that Lake Powell's dangerously low levels threaten to expose the turbines at the lake's Glen Canyon Dam, which would jeopardize the supply of hydroelectric power it generates for millions of customers in the Colorado Compact states.

Bernard Spragg via Wikimedia Commons

Solutions?

In 2015, SCPP started with $11 million in funding from four different water utilities, including Denver Water, as well as the Bureau of Reclamation and nonprofit donors, most notably the Walton Family Foundation. The funding was split between the upper and lower basin states (the lower basin SCPP program was not suspended as part of the UCRC's resolution).

In the Upper Basin SCPP, 45 projects were funded that together reduced water consumption on ranches and farms by approximately 22,000 acre-feet in the first three years of the program. SCPP paid out approximately $4.5 million for projects in Wyoming, Colorado, Utah and New Mexico for an average of $200 per acre of land fallowed. Data from the program's final year isn't yet available, however, it's estimated an additional $3.9 million will be paid to upper basin farmers and ranchers by the end of 2018.

Some projects fallowed fields for an entire season, while others created split season irrigation, watering the land the first half of the year while allowing the water to stay in the river the rest of the growing season. Groups like Trout Unlimited and the Nature Conservancy chipped in to help broker the deals between funding agencies and farmers and ranchers. "We spent a good amount of time working with our ag partners on what this would look like on the ground," says Aaron Derwingson, agricultural coordinator for The Nature Conservancy's Colorado River Program. One of the first projects funded by SCPP was the Nature Conservancy's Carpenter Ranch outside of Steamboat Springs, where 200 acres were fallowed. This process was used to test how such actions could affect water rights, land recovery and any other challenges that might arise. "If we're going to be talking to others about this, then we need to know the process first-hand," Derwingson says.

The individual contracts with farmers depended on how many acres were fallowed and for how long, and range from $6,000 to more than $600,000.

In 2018, one ranch in Routt County, Colorado, was paid $421,650 — one of the largest awards in SCPP — for fallowing 1,941 acres of irrigated hayfields.

For some in the water conservation world, the SCPP, or any future program based on its premise, is too little, too late with too high a price tag. And they claim it relies on a system with inherent flaws from the get-go.

“They spent three years and many, many millions of dollars and averaged 7,000 acre-feet per year,” says Gary Wockner, with Save the Colorado, a water conservation advocacy group. “That is a proverbial drop in the bucket. Lake Powell holds 25 million acre-feet, and they got 7,000.”

Environmentalists have long decried Lake Powell for its large evaporative losses and other negative ecological impacts, which they say contribute to the fact that the 1,450-mile-long Colorado River rarely reaches the Pacific Ocean anymore. And with ongoing climate change, the current drought is only expected to get worse in coming decades, which will further exacerbate the problem.

But even so, for farmers like Kehmeier, the idea of leasing water rights temporarily through a program like SCPP represents another “tool in the management toolkit” in maintaining a viable farming operation.

“Without getting too far in the weeds, in general I think I do best by selling a value-added product such as alfalfa or grain. But sometimes it makes sense to sell my raw commodity, which is water,” Kehmeier says, noting that this is especially true in years when supply is higher than demand for his crops, lowering their price. “I don’t think I would do it year after year, but it’s another alternative in my range of decisions to make in order to run my business.”

The year he participated in SCPP, he says he made more by selling his water than he would have had he irrigated fields and raised crops, although, he says, “It wasn’t a windfall by any means.”

A pilot program is designed to be just that, a small-scale, temporary process for gathering data that either proves or disproves the feasibility of a longer-term, larger project. And while there's widespread consensus that the SCPP proved farmers would be willing to participate in a demand management system if they were appropriately compensated, the UCRC suspended the program in order to focus on other obstacles that could prevent a full-blown project from moving forward.

From what Derwingson's heard, the participants in the program realize that there's no use continuing to fallow lands and reduce consumption until some of the outstanding, broader questions can be addressed. "In order to be successful, there has to be some certainty and consistency" to the program, he says.

Therein lies the challenge ahead.

The Future

"We have to really roll up our sleeves at this point and dig into the data that we got out of the years of the pilot program that we have," says James Ecklund, the state's Colorado River representative. "We have a year here or so to evaluate the pilot program. I don't think we have much more time than that."

Ecklund says analyzing the data from the pilot program will take at least that long, and any sort of demand management system isn't really feasible before 2020. In addition to the threat of compact calls and having to shut down hydroelectric generation, Ecklund says, if the water levels drop below the turbines at Lake Powell, then critical federal funding for other important projects like salinity management, water quality and fish recovery programs are at risk as well.

"On this river, you seem to pull the thread and you get the whole sweater," he says. "We really have to do all we can as fast as we can, and even if we do all

of that we still may be facing a crisis or a pinch point that needs more than we can give."

In explaining its reasoning for suspending the SCPP, the UCRC resolution states that the pilot project "does not allow the Upper Division States to sufficiently investigate storage or the additional administrative, technical, operational, economic or legal considerations" that would make a large-scale project feasible.

"I was encouraged by it as a pilot project knowing that something like it will need to be in place in the future, something larger, that has permanent funding that has legal certainty, and it's something we would like to participate in the long range," says Eli Feldman from Conscious Bay Company, a commercial and agricultural real estate investment and management firm based in Boulder. The registered B Corp manages commercial property throughout the metro area as well as agricultural property in Steamboat Springs and Delta County, Colorado, but was not involved in the SCPP.

Feldman says the company's primary interest is in agriculture, but they have been watching the SCPP closely and would consider participating in future fallowing projects that provided compensation for water.

While agriculture may be Conscious Bay's primary interest, it should be pointed out that not all companies share its stated philosophy. Large pieces of the American West are increasingly being bought up by water speculators looking to turn a profit from their historical water rights.

Even so, Feldman believes that the market can offer conservation solutions.

"Farmers will conserve water if you pay them a reasonable amount of money for it. So now it's a matter of, do we have the political will that actually promote or explicitly allow it. And fund it. That'll be the trickier political issue," he says.

When it comes to water law, at the moment there aren't clear ways to ensure that once one farmer leaves water in the system, the next farmer won't simply divert it out further downstream, preventing it from ever reaching Lake Powell. Furthermore, there is no legal mechanism to keep any water that makes it to Lake Powell in the reservoir to maintain operational water levels or to be used in times of drought, rather than continuing on to Lake Mead and the lower basin states.

"They were wise to end the on-the-ground studies and turn their attention to state water law and intergovernmental agreements and the question of if an entity pays me to send my water down to Lake Powell, can they guarantee that it will be left in Lake Powell as water bank water instead of just getting sent on down without any credit," Kehmeier says.

Courtesy of Paul Kehmeier

Paul Kehmeier stands between a fallowed and irrigated field on his farm in Eckert, Colorado.

Which raises the question of funding: Who is going to continue paying farmers for their water to stay in the system if there's no guarantee of a return on investment?

"If you have certain entities paying to create more water generally for the system as a dispersed benefit, they are going to eventually get tired of paying unless you more directly tie the benefit to the funder," Feldman says.

While the majority of the initial project was funded by water utilities and private foundations, most involved admit that any type of full-blown project based of the SCPP model will require significantly more money than has already been spent.

“Ultimately, the dollars that will be needed are way beyond what the foundations can provide, so it has to be a larger, permanent funding mechanism that is going to have to be governmen-based,” Feldman says. He suggests something akin to how Great Outdoors Colorado benefits from a lottery tax that then goes toward funding land conservation around the state.

“A water bottle tax is one of the ideas: for every bottle of water you buy it’s a penny that goes into a water fund,” he says. “It’s always hard to raise taxes but when you compare water to roads, police, education, affordable housing, it seems to me to be in a different level of necessity; a most basic ingredient without which you won’t have any of those other things to worry about.”

No one can say yet how much a full-blown demand management system will cost, but Ecklund thinks that with a little analysis, the data from the pilot project will start giving some ideas. But Wockner says it would require astronomical amounts of money to make a full-blown project functional.

“They need hundreds of thousands of acre-feet of water to actually make a difference. They would have to have hundreds of millions of dollars if not a few billion dollars every year to buy enough water each year to actually make a difference,” Wockner says. “Their plan won’t work. There’s no real scalable, practicable way to buy hundreds of thousands of acre-feet from farmers in the upper basin and save that lake.”

In addition to legal and funding challenges, any effective demand management system presents cultural challenges as well, says Andy Mueller, the general manager of the Colorado River Water Conservation District based in Glenwood Springs.

“We are actively studying governing structures and secondary economic impacts related to a demand management program to see if we can design one that has the intended benefit of additional protection of reaching critical levels in Lake Powell from water shortages, but also protects the economies and general welfare of the state of Colorado,” he says.

“One of the things we’ve learned, from the Western Slope perspective, [is that] if there was a sustained program put in place in the state, you probably can’t get enough water out of just the Western Slope ag to protect the economies that are produced around it and produce enough water. You have to be more creative, more innovative and look at different options out there.” Options could include conservation from all sectors of society across the state and not just from agriculture.

“If we’re going to participate in a situation where we are intentionally reducing our consumptive use, it should come from urban areas, it should come from industry and it should come from agriculture. And done in a way that protects the economies of all of those regions and all of those user groups,” he says.

Going forward

Where the concept of a demand management system like the SCPP goes from here depends on figuring out how to balance all of these factors — political, economic, legal — in a way that keeps everyone happy. Whether or not that’s possible is another question, especially in light of the realities of climate change and continuing drought.

“We should probably stop using the word drought,” Ecklund says, a concept he picked up at a conference where a speaker said, “When you use the word drought, hope becomes a strategy.”

Agreeing, Ecklund says, “That’s not where we want to be, we can’t be that way at a headwaters level in Colorado.”

Save the Colorado's Wockner advocates that a better solution than any sort of voluntary, temporary reduction in consumptive use, or demand management system, would be to drain Lake Powell, figure out another way to respond to a potential compact call, and to come up with an alternative to hydroelectric power, something he says is relatively easy to do.

"This isn't a temporary situation, this is ongoing and permanent," Wockner says. "They still haven't even gotten remotely close to the root cause of the problem, which is climate change is real and every scientist indicates that it's going to get worse and that Lake Powell is not sustainable."

No matter who is pitching what solutions, one thing seems clear: not everyone is going to be able to have as much water as they want, or need, in the future. And that may mean certain interests, be they economical, agricultural or recreational, may lose out.

"It's beyond a new normal, there is no normal," Ecklund says. "We have to figure out as best we can, how these systems are going to perform, how they're not going to perform and if they're going to fail. We do not have enough to save every single place from a changed climate. We're going to have to pick and choose which parts we want to make as resilient as possible and that's going to be a real challenge."

And as much as he doesn't like to admit it, Kehmeier, for one, knows farms, especially ones in the arid West, could be the first to suffer.

"I will acknowledge that I am trying to farm in an area that is not naturally amenable to raising crops," he says. "I don't think that we can move water off of agricultural land, either permanently or temporary without having some negative effect on the vibrancy of the agricultural communities. So that's a sadness to me, but I try to look at it a little more broadly."