

Utah State University

DigitalCommons@USU

Publications

Utah Water Research Laboratory

5-19-2022

Invest in Farm Water Conservation to Curtail Buy and Dry

David E. Rosenberg
Utah State University

Follow this and additional works at: https://digitalcommons.usu.edu/water_pubs



Part of the [Life Sciences Commons](#)

Recommended Citation

David E. Rosenberg (2022). Invest in Farm Water Conservation to Curtail Buy and Dry. *Journal of Water Resources Resources Planning and Management*. <https://ascelibrary.org/doi/full/10.1061/%28ASCE%29WR.1943-5452.0001584>

This Article is brought to you for free and open access by the Utah Water Research Laboratory at DigitalCommons@USU. It has been accepted for inclusion in Publications by an authorized administrator of DigitalCommons@USU. For more information, please contact digitalcommons@usu.edu.



Invest in Farm Water Conservation to Curtail *Buy and Dry*¹

March 9, 2022

David E. Rosenberg²



Figure 1. Investing in land leveling – Creative Commons license CC PDM 1.0 by USDA.gov.

Available at <https://wordpress.org/openverse/image/55b2bc5d-7b66-4008-89ca-b3ec5b97050d.20200724-NRCS-LSC-0878>.

The term *buy-and-dry* plays to the fears of farm and ranch communities. In Owens Valley, CA in the early 1900s and Palo Verde Irrigation District, CA today, wealthy urban water providers buy up water rights, dry out farms and ranches, export purchased water out of basin to growing cities, or keep water in storage to counter reservoir draw down (James, 2021). As more farmers and ranchers sell their water rights, local businesses—irrigation, farm equipment, seed, and other

¹ Version of record at: Rosenberg, D. E. (2022), Invest in Farm Water Conservation to Curtail Buy and Dry, *Journal of Water Resources Planning and Management*, 148(8), 01822001. <https://ascelibrary.org/doi/abs/10.1061/%28ASCE%29WR.1943-5452.0001584>.

² Professor, Department of Civil and Environmental Engineering and Utah Water Research Laboratory, 8200 Old Main Hill, Utah State University, Logan, Utah, 84322-8200, A.M. ASCE, david.rosenberg@usu.edu.

14 agricultural firms—contract. Those contractions encourage more farmers and ranchers to sell
15 their water rights and farms. And a negative feedback loop gains momentum and propels a
16 tragedy where the commons—a functioning local agricultural community—disappears. Deep-
17 pocketed public urban water providers can initiate the perverse cycle of *buy and dry* and so can
18 private Wall Street investment bankers (Howe, 2021).

19 We can reverse the perverse cycle of *buy and dry*.

- 20 1. Require farmers and ranchers that take payments for their water to invest some of that
21 money in farm water conservation efforts, and
- 22 2. Keep transactions temporary.

23 Temporary is already part of the Upper Colorado River Basin’s new conservation motto of
24 temporary, voluntary, and compensated (Upper Colorado River Commission, 2019). Here,
25 temporary means to lease agricultural water rights for a single year or part of a season. Next
26 year, decide again whether to lease based on hydrologic conditions. Income from temporary
27 water rentals can help farmers or ranchers bridge difficult years. They can also use the lease
28 period to upgrade equipment, level land (Figure 1), incorporate manure, or make other
29 improvements that are difficult when hay, alfalfa, row, or other annual crops are present.

30 Temporary leases give farmers and ranchers flexibility.

31 When we require farmers to invest lease payments in farm water conservation, we keep the
32 money in the local community. Farmers and ranchers will reach out to local business for help to
33 monitor and meter flows, improve farm water delivery, purchase more drought tolerant seeds,
34 switch to crops that increase yield with less water, or find technical assistance for conservation.

35 Local businesses will invest proceeds from those sales in new agricultural and conservation

36 products to serve their customers' needs. There will be growth. Keeping payments in the local
37 community turns the feedback loop positive. Keeping payments in the local community keeps
38 farmers farming and ranchers ranching. Keeping payments in the local agricultural community
39 preserves economic diversity across agricultural and urban communities. We want our
40 agricultural communities to survive and thrive.

41 Outside organizations that want to lease water plus the numerous canals, districts, states, and
42 other entities that deliver water to farms and ranches have multiple reasons to require recipient
43 farmers to invest in farm water conservation. When an outside organization requires a farmer or
44 rancher to invest lease payments in farm water conservation, the outside organization empowers
45 farmers or ranchers to make more water available to lease in future years. Canal companies,
46 districts, and states that require recipient farmers to invest payments in farm water conservation
47 keep lease payments for water within their service areas. These water management entities also
48 have an interest to oversee transactions, help aggregate numerous smaller transactions by their
49 member agencies or individual users, and regulate water flows out of their service areas.

50 California's 2003 Quantification Settlement Agreement (QSA) is an example of investing
51 payments for water in agricultural water conservation. There were some good aspects of the
52 agreement and undesired outcomes. One good aspect was that California's Imperial and
53 Coachella Irrigation Districts used some \$1-2 billion in payments from San Diego County Water
54 Authority and Metropolitan Water District of Southern California over 18 years to partially line
55 the All-American canal and completely line the Coachella canal. Another good aspect was the
56 irrigation districts used payments to recover tailwater, improve irrigation application uniformity,
57 automate canals and farm turn outs, install soil moisture sensors, and more finely schedule water
58 deliveries. In exchange, the urban water districts took delivery of up to 370,000 acre-feet per

59 year of conserved water through the Colorado River aqueduct (USBR, 2021). The State of
60 California and U.S. Federal Government also signed on to the deal. An undesired outcome was
61 that deliveries to Imperial Irrigation District declined as did farm runoff and drainage and
62 tailwater flows to the Salton Sea. The Salton Sea shrank. Problems of dust, outmigration, and
63 ecosystem harm increased. The story of the 2003 Quantification Settlement Agreement is a
64 cautionary tale to mind the system-wide effects to lease water to outside entities. Involve water
65 organizations from the very local on up.

66 If individual farmers or ranchers complain that requiring them to invest in farm water
67 conservation impacts their financial freedom, they should consider the alternatives. First,
68 continue the status quo where there are few out-of-district compensated water transfers,
69 temporary or permanent. Second, out-of-district transfers become more common as more
70 neighbors permanently sell their farm and their water rights to cities or investment bankers.

71 Individual farmers and ranchers, outsider buyers, canal companies, districts, and states that all
72 manage water can work together to curtail *buy and dry*. These organizations can require their
73 users or member agencies who lease water to invest some of the lease payments in farm water
74 conservation. Investments in farm water conservation will keep money in local communities.
75 Investing in farm water conservation encourages farmers and ranchers to start conserving now,
76 build a conservation ethic, and grow conservation efforts over time.

77 **Data Availability**

78 No data, models, or code were generated for this piece.

79 **Acknowledgements**

80 Niel Allen, Eric Kuhn, David Tarboton, an anonymous reviewer, an associate editor, and one
81 other person who asked to remain anonymous provided comments that improved the piece.

82 **References**

83 Howe, B. R. (2021). "Wall Street Eyes Billions in the Colorado's Water." *New York Times*, BU,
84 Page 1.

85 James, I. (2021). "As drought worsens, California farmers are being paid not to grow crops." *Los*
86 *Angeles Times*, October 10, 2021.

87 Upper Colorado River Commission. (2019). "Request for Qualification-Based Proposals for
88 Professional Services." *RFP #2019-01-UCRC*.

89 USBR. (2021). "Boulder Canyon Operations Office - Program and Activities: Water Accounting
90 Reports." U.S. Bureau of Reclamation. <https://www.usbr.gov/lc/region/g4000/wtracct.html>.

91