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## Whose Water? Corporatization of a Common Good

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# **ENVIRONMENTAL LAW, DISRUPTED.**

Keith Hirokawa & Jessica Owley, Editors

ENVIRONMENTAL LAW INSTITUTE  
Washington, D.C.

# Chapter 4: Whose Water? Corporatization of a Common Good

Vanessa Casado Perez\*

## I. Introduction

Powerful companies are investing in water as a result of climate change and their participation in water markets has negative effects on the communities from where the water comes. Examples abound. In the foothills of Mount Shasta in northern California, the town of Weed is fighting a water war. Weed has relied on spring water to cover a water deficit caused by a prolonged drought. Weed had paid Roseburg Forest Products (Roseburg), a timber company that owns the land containing the spring, \$1 a year for spring water for more than 50 years. That arrangement ended in 2019, however, when Roseburg saw a business opportunity and began charging Weed \$97,500 a year for water while telling Weed to soon find water elsewhere. Purportedly, Roseburg is likely interested in selling the water previously consumed by Weed to Crystal Geysers Alpine Spring, a California-based bottled water company. After having relied on Roseburg's water for more than five decades, Weed residents argue the water should not just be sold to the highest bidder.<sup>1</sup>

Water markets, broadly understood, include transactions like the Roseburg one and more traditional exchanges between neighboring users. Water transfers can mitigate the effects of water scarcity, allowing allocation of

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1. The outrage, however, may be somewhat contained because the timber company landowner is a large employer in the area. See Thomas Fuller, *Timber Company Tells California Town, Go Find Your Own Water*, N.Y. TIMES, Oct. 1, 2016. Another example is the controversy in East Texas where Ozarka, a Nestlé subsidiary, outraged the residents by bottling local spring water—a problem compounded by the state's rule of capture for groundwater. According to the rule of capture, landowners can pump as much water as they want from aquifers underlying their lands, but so can the landowners' neighbors. If the neighbor is a big, multinational beverage company, its pumps and extraction rate will exceed smaller users, including municipalities. Stuart Eskenazi, *The Great Sucking Sound*, HOUS. PRESS (Nov. 19, 1998, 4:00 AM), <https://www.houstonpress.com/news/the-great-sucking-sound-6569533>.

water to those willing to pay more for it.<sup>2</sup> These reallocations purportedly benefit society because water is used where it can generate more marginal return. Market advocates argue that free-market transactions are better than bureaucratic allocations. Water agencies may not have as much information as users do about the relative value of water and may allocate water based on political influence. In contrast, markets incentivize efficiency. For example, farmers facing the choice between selling water or using it to grow their crops may decide to either stop their production if selling water in the market is more profitable or they may decide to change their irrigation method for a more efficient one in order to sell surplus water.

Water transactions, however, involve negative externalities. As a result of regulations, parties to water transactions must internalize effects on some third parties, such as other water users. Nevertheless, externalities beyond those suffered by other rightsholders are often ignored. For example, it is often not required to internalize externalities suffered by the communities, such as the case in Weed, where the water transferred used to be consumed. The controversies like those in Weed emerge where water law gives individual rightsholders free rein in controlling (and transferring) water rights, and the community has no say in the fate of the water. When the water goes, the community suffers immediate effects such as job losses, along with long-term effects such as loss of opportunities to develop—without the community at large often having any opportunity to participate in the decision. Data from droughts can help illustrate the potential effects of water transfers. The effects of water transfers are similar (albeit more permanent) to the effects of a drought—jobs are lost, economic activity is reduced, and social morale is decreased. In Mendota, a city in California’s Central Valley, the unemployment during the last California drought was close to 70% when accounting for undocumented workers.<sup>3</sup> When the water dries up, farmworkers cannot pay rent.<sup>4</sup> Signs that pop up during drought of “no water = no jobs” and “no water = no future” could rightly apply to transfers as well.

Water transactions are not a new development in water management. Water transactions are a tool that has worked in the margins, reallocating water in times of drought without disrupting our mostly public water governance regimes. This, however, may soon no longer be the case. Even

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2. See VANESSA CASADO PEREZ, *THE ROLE OF GOVERNMENT IN WATER MARKETS*, 10, 22-28 (2016) (explaining advantages of water markets).

3. Dyan Ruiz & Joseph Smooke, *Farm Workers Surviving the Drought in California*, PEOPLE POWER MEDIA (June 15, 2014), <https://www.peoplepowermedia.org/workers-rights/farm-workers-surviving-drought-california>.

4. Marissa Lang, *Without Water, Work or Homes: Farm Laborers Displaced by Drought*, S.F. CHRON., Dec. 18, 2015.

though transporting icebergs was dismissed as a solution to the California water crisis<sup>5</sup> and transportation costs made oil tycoon T. Boone Pickens' attempt to transfer water from the Texas Panhandle to the Dallas metropolitan area unattractive to buyers,<sup>6</sup> transfers are going to be an attractive option as water becomes scarcer as a result of climate change.<sup>7</sup> Wall Street and international water mammoths' investments in water certainly suggest that water commodification is going to become more prevalent in the era of climate change.<sup>8</sup> The involvement of these large actors, such as Crystal Geyser, makes the effects on the community more acute because the imbalance of power between the community and a multinational corporation is larger and because these transactions often transfer larger quantities of water, further away, perhaps outside the watershed,<sup>9</sup> and for a longer length of time.<sup>10</sup>

5. Santiago O'Donnell, *The Iceberg Cometh: Drought: Towing a Chunk of Glacier Into the Harbor Is the Fifth of Eight Water Shortage Solutions the Council Plans to Look at in a \$175,000 Study*, L.A. TIMES, June 6, 1990. A far-fetched proposal from actor William Shatner was toting water from the Pacific Northwest to California via a pipe. See *Shatner Proposes Water Pipeline From Washington to California*, KATU (Apr. 20, 2015), <https://katu.com/news/local/shatner-proposes-water-pipeline-from-washington-to-california-11-20-2015>. See Clifford J. Villa, *California Dreaming: Water Transfers From the Pacific Northwest*, 23 ENV'T L. 997, 1008-09 (1993) (discussing proposals to pipe water to California from the Columbia River and Alaska).
6. ALEX PRUD'HOMME, *THE RIPPLE EFFECT: THE FATE OF FRESHWATER IN THE TWENTY-FIRST CENTURY* 263 (2012). After acquiring the water and getting the Texas legislature to give him eminent domain power over the land where the pipelines could be installed, there were no buyers willing to pay the price. *Id.*
7. Water-scarce regions of Georgia and Minnesota are looking to get water from water-rich areas. See Christine A. Klein, *Water Transfers: The Case Against Transbasin Diversions in the Eastern States*, 25 UCLA J. ENV'T L. & POL'Y 249, 267 (2008) (Georgia); MINN. DEP'T OF NAT. RESOURCES, *MINNESOTA'S WATER SUPPLY: NATURAL CONDITIONS AND HUMAN IMPACTS* 8 (2000), [https://files.dnr.state.mn.us/publications/waters/mn\\_water\\_supply.pdf](https://files.dnr.state.mn.us/publications/waters/mn_water_supply.pdf) (Minnesota); Ron Way, *The Great Siphoning: Drought-Stricken Areas Eye the Great Lakes*, STAR TRIB., May 25, 2018.
8. Tim Gray, *As Fresh Water Grows Scarcer, It Could Become a Good Investment*, N.Y. TIMES, July 11, 2019; Jesse Barron, *How Big Business Is Hedging Against the Apocalypse*, N.Y. TIMES, Apr. 11, 2019; *Water Emerges as "The New Oil" in \$32.5 Million Sale of Vast Permian Basin Ranch*, DALLAS MORNING NEWS, Jan. 28, 2019, <https://www.dallasnews.com/business/real-estate/2019/01/28/water-emerges-as-the-new-oil-in-32-5-million-sale-of-vast-permian-basin-ranch/>; Steve Brown, *Far West Texas Ranch on the Market Is All About the Water*, DALLAS MORNING NEWS, Sept. 16, 2019, <https://www.dallasnews.com/business/real-estate/2019/09/16/far-west-texas-ranch-on-the-market-is-all-about-the-water/>.
9. Water exportation occurs when the water is used outside of the watershed. Out of basin transfers are *not always* permissible under state water law. There is not usually a watershed limitation for groundwater, meaning there are no restrictions on where groundwater can be used after its capture. See Christine A. Klein, *supra* note 7, at 267. Bottled water is exported outside the area of origin—sometimes even to other countries—because it escapes the water export regulations. A water bottle company can do as it wishes with the water no matter whether it has a right to pump groundwater or to use surface water. For an overview of legal controversies related to bottled water, see Tara Boldt-Van Rooy, *"Bottling Up" Our Natural Resources: The Fight Over Bottled Water Extraction in the United States*, 18 J. LAND USE & ENV'T L. 267 (2003).
10. Generally, the further water is taken from its origin and the longer the length of the transaction, the more likely negative community externalities will occur. When water goes to another basin, users who depended on the surplus flow get nothing. Direct water exportation outside the basin is 100% consumptive, much like water bottles being shipped to another part of the country. See Vanessa Casado Perez, *Inefficient Efficiency: Crying Over Spilled Water*, 46 ELR 11046, 11047 (Dec. 2016).

These larger water transactions put a strain on the existing water market regulations because the regulatory regime is built around transactions between two neighboring users with different marginal values for their water. Current water regulations cannot properly address the effects resulting from today's water transactions where large businesses participate.<sup>11</sup> This chapter focuses on one type of such effects: those on communities. This chapter does not dismiss water markets but offers mechanisms to address the effects communities will likely suffer. With the advent of major players investing in all things water, communities are now in a more precarious situation and mechanisms to address the effects on the communities are now more necessary than ever. Many economists believe externalities to communities should not be internalized because these community effects are just normal market operations.<sup>12</sup> For these economists, the farm jobs lost, often jobs held by migrant workers, as a result of a water transaction between an agricultural producer and a faraway buyer, are no different than the jobs lost in the Rust Belt when companies relocated to other countries.<sup>13</sup>

But water is different. Many state constitutions claim that water belongs to the public, or to the state as a trustee for the public.<sup>14</sup> Accordingly, water regulations should ensure that the public does not lose control over water resources as it is happening today as water markets involve powerful corporations and transfers to faraway areas. This chapter encourages readers to think of agricultural communities in the era of climate change-induced droughts and population growth similar to when western Pennsylvania's steel industry collapsed in the 1980s. *If water must flow uphill to money, it should not leave a dust bowl behind.* While this chapter's proposals to address the effects on community build on examples of water reallocation where those effects have been addressed, both the just-transition literature and the experiences of some of the towns successfully adapting to abrupt changes in their economic tissue

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Similarly, some transactions within the basin can have similar effects on the community of origin if, for example, transfers occur across sectors. While the water footprint of product exports is a very crucial topic, this chapter leaves embedded water out of the framework and focuses on the effects of transferring water itself.

11. The potential negative effects include: companies that have contributed to climate change profiting from the water scarcity induced by climate change, effects on the communities of origin, pricing out low-income population, and exploiting regulatory gaps, going against some of the underlying principles of our water regimes, such as the prohibition of speculation. For an analysis of those effects, see Vanessa Casado Perez, *Liquid Business*, 47 FLA. ST. L. REV. (forthcoming 2020).
12. CASADO PEREZ, *supra* note 2, at 70-74.
13. Dan Kaufman, *What Happens to a Factory Town When the Factory Shuts Down?*, N.Y. TIMES, May 1, 2019 (capturing the struggles of some factory workers needing to reallocate after the factory producing the Chevy model Cruze automobile was being "unallocated").
14. Joseph Regalia & Noah D. Hall, *Waters of the State*, 59 NAT. RESOURCES J. 59, 68 (2019).

can offer lessons for areas suffering big water losses.<sup>15</sup> In addition, privatization of water utilities shares with water transactions the concerns about the community voice being muffled by powerful interests and having less of a say in its future development because water is controlled elsewhere. Accordingly, the proposals put forward in this chapter may also inform regulatory responses to privatization.

Section II describes the landscape of water markets today, from the traditional exchange of water rights to the investment by big companies in water-related assets as climate change makes water scarcity worse. Section III analyzes potential externalities on communities as a result of water markets, particularly in today's markets where climate change has made water attractive for big corporations. It unpacks the critiques of community externalities by scholars who believe communities should not be compensated and it evaluates the levels of government involved in decisions concerning water markets and community externalities. Section IV offers a portfolio of measures to address community externalities and offers recommendations.

## II. Water Markets

The term “water markets” encompasses many types of transactions. This chapter focuses on the effects on communities from water transactions. Nevertheless, because the effects on communities and the potential solutions are applicable beyond water exchanges, this section reviews forms of water commodification greatly affecting the community: traditional water rights exchanges; new market developments as a result of climate change; and water privatizations.

Transferability of water rights ensures that rightsholders have incentives to use less water and sell the rest to whomever values it more. Hence, farmers, who are the main water users in most jurisdictions, may shift toward more efficient irrigation practices if they can profit from transferring their unused water. This efficient allocation mechanism incentivizes low-value users to sell their water to higher value users. The paradigmatic transaction is between the agricultural sector and urban areas. Some farmers may even fallow their fields to sell water, but others just invest in efficient irrigation methods or

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15. Pittsburgh is the poster child for recovery and a model to follow for the Rustbelt and perhaps for water transfers. But it is important to note that the area surrounding Pittsburgh is still in tatters. Some inner-city neighborhoods do not share the prosperity of the urban center, and nearly one-quarter of the Pittsburgh population is still in poverty. See Joel S. Yudken et al., *Revitalizing America's Manufacturing Communities*, CENTURY FOUND. (Oct. 16, 2017), <https://tcf.org/content/report/revitalizing-americas-manufacturing-communities/?agreed=1>.

in crops that require less water.<sup>16</sup> These transactions tend to be local, but as water becomes scarcer, it may become cost efficient to transport water long distances—even across basins. Such transactions can seriously affect the local community of origin. When water is transferred, jobs are lost, the overall economic tissue of the community is affected, and the community loses the opportunity to choose its future development because it may be hard to purchase the water back.

The privatization of water utilities is based on the premise that private companies are better suited than local governments to ensure a steady water supply to households. Governmental entities find it hard to finance water infrastructure updates and may seek such improvements to the systems by giving control to a private entity.<sup>17</sup> Some perceive privatization as making water policy less subject to corruption and influence by interest groups.<sup>18</sup> Communities, however, do not always welcome this privatization. In Felton, a town on the California coast, Friends of Locally Owned Water (FLOW) organized events to oppose the private companies that had acquired control of the town's water system, leading to the municipality regaining control.<sup>19</sup> Water privatization has negative consequences similar to transactions for the communities of origin: may fail to protect a key natural resource; increase water bills; ignore underrepresented communities; and fail to account for the public's interest because the private companies are not accountable to local communities and may disregard their connection to the water.<sup>20</sup> Addition-

16. Ari Levaux, *Is Dry Farming the Next Wave in a Drought-Plagued World?*, NAT'L GEO., Sept. 29, 2016.

17. Joseph Dellapenna, *Climate Disruption, the Washington Consensus, and Water Law Reform*, 81 TEMP. L. REV. 380, 403 n.86 (2008).

18. JAMES SALZMAN, DRINKING WATER: A HISTORY 201 (2013); PETER H. GLEICK ET AL., THE NEW ECONOMY OF WATER. THE RISKS AND BENEFITS OF GLOBALIZATION AND PRIVATIZATION OF FRESH WATER 27 (2002) (reviewing Mexico's corrupt public provision of tinkered water). In contrast, those critiquing privatizations see the agreements as a result of corruption. See John Vidal, *Water Privatization: A Worldwide Failure?*, GUARDIAN, Jan. 30, 2015; Kate Bayliss, *Privatization and Poverty: The Distributional Impact of Utility Privatization*, 73 ANNALS OF PUB. & COOPERATIVE ECON. 603, 619 (2002).

19. PRUD'HOMME, *supra* note 6, at 272-73; see also ALAN SNITOW ET AL., THIRST: FIGHTING THE CORPORATE THEFT OF OUR WATER 49-62 (2007). Felton managed to buy back its water system. FLOW put a measure on the ballot for a bond to be paid with property tax increases. The idea was that the system would then be managed by San Lorenzo Valley Water District, a public utility. The private company that owned Felton's water management system refused the deal but settled the case when the San Lorenzo Valley Water District threatened to pursue eminent domain. See Tara Lohan, *How Felton, Calif., Achieved Water Independence*, YES! MAG., May 27, 2010, <https://www.yesmagazine.org/issues/water-solutions/how-felton-ca-achieved-water-independence>. On a broader scale, opposition to water privatization has become a central tenet of the anti-globalization movement. See SALZMAN, *supra* note 18, at 22. For example, "opposition" was one of the five pillars of Italy's left-wing populist 5-Star Movement. See Dave Keating, *On Energy, Italy's Five Star Movement Could Rock the Boat*, FORBES, Mar. 5, 2018.

20. GLEICK ET AL., *supra* note 18, at iii-v. Some disagree about the accuracy of those perceived negative consequences. See also Adrian Moore, *Why Water Privatization Adds Up*, REASON FOUND. (Nov. 21, 2003), <https://reason.org/commentary/why-water-privatization-adds-up/>.

ally, once a water utility has been privatized, it is hard to undo.<sup>21</sup> Privatization efforts are not going away. Water is the new oil.<sup>22</sup> Private companies are investing in water, and cash-strapped governments are willing to outsource the management of their water systems because they cannot afford necessary investments. The focus for privatization agreements should be on making privatization compatible with the publicness inherent to water.<sup>23</sup> A report by the Pacific Institute does just this.<sup>24</sup> It proposes several requirements for privatization agreements.<sup>25</sup> Among these requirements, the report argues that the public should retain control over the system.<sup>26</sup>

Traditional water rights exchanges and water privatization do not paint a complete picture of what water markets are today. Any source of water could become a pot of gold as the effects of climate change set in. Big players have increased their presence in the U.S. water market. As captured in the movie *The Big Short*,<sup>27</sup> water has become a coveted investment by Wall Street standards. Investment funds, international corporations, and wealthy business-

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21. GLEICK ET AL., *supra* note 18, at 5; Elizabeth Douglass, *Towns Sell Their Public Water Systems—And Come to Regret It*, WASH. POST, July 8, 2017 (describing the difficulties Mooresville, Indiana faced when it tried to buy back her water system).
  22. See Julian Brookes, *Why Water Is the New Oil*, ROLLING STONE, July 7, 2011; Andrew Ward, *Water Set to Become More Valuable Than Oil*, FIN. TIMES, Mar. 19, 2019; Steven Solomon, *Water Is the New Oil*, HUFFINGTON POST (Mar. 18, 2010, 5:12 AM), [https://www.huffingtonpost.com/steven-solomon/water-is-the-new-oil\\_b\\_380803.html](https://www.huffingtonpost.com/steven-solomon/water-is-the-new-oil_b_380803.html); David Wethe, *Water Is Almost as Precious as Oil in the Permian Basin*, BLOOMBERG (Jan. 24, 2019), <https://www.bloomberg.com/news/articles/2019-01-24/ranch-fetches-33-millionand-proves-water-is-red-hot-commodity>.
  23. Some authors may consider that in practice, there is no privatized model that can be compatible with water's public value. The work of Maude Barlow is significant in this area. See generally MAUDE BARLOW & TONY CLARKE, *BLUE GOLD: THE FIGHT TO STOP THE CORPORATE THEFT OF THE WORLD'S WATER* (2005); see also MAUDE BARLOW, *BLUE FUTURE: PROTECTING WATER FOR THE PEOPLE AND THE PLANET FOREVER* (2013); MAUDE BARLOW, *BLUE COVENANT: THE GLOBAL WATER CRISIS AND THE COMING BATTLE FOR THE RIGHT TO WATER* (2007).
  24. See generally GLEICK ET AL., *supra* note 18.
  25. *Id.* at 40–42. The requirements are: everyone must receive a certain amount of water because water is a social good; public agencies should monitor the system; water should be managed based on sound economic principles so that companies exhaust all conservation measures before making new investments; and the public should retain control over the system. Other scholars consider competition between private companies to win a local contract a must. The Pacific Institute report though is skeptical about it given the market power of the big players in water, such as Suez Lyonnaise des Eaux. *Id.* at 34.
  26. *Id.* at 42.
  27. *THE BIG SHORT* (Regency Enterprises 2015). The characters who had sold real estate short on Wall Street decide to invest in water. In fact, “The Big Short” was also the title of a flyer used by those opposing a bill that would have blocked a major groundwater transaction between a farming company in the Mojave Desert, Cadiz, Inc., and Southern California urban centers. The flyer claimed that those favoring the bill and opposing the transaction only had their own profits in mind because they were betting against the company on the financial markets and would benefit from the decrease in Cadiz's stock price. Ian James & Evan Wyloge, *Bill Targeting Company's Plan to Pump Desert Groundwater Dies in California Senate*, DESERT SUN, Aug. 31, 2018, <https://www.desertsun.com/story/news/environment/2018/08/31/bill-would-hinder-cadiz-water-project-stalls-california-senate/1158059002/>.

men are purchasing interests in water.<sup>28</sup> In addition to the well-established, international water players such as Suez Lyonnaise des Eaux (Suez) (which has owned water interests in the United States since 1999),<sup>29</sup> oil companies, large holding companies,<sup>30</sup> and investments funds<sup>31</sup> are entering the picture. They have invested in all things water, from water utilities to water rights, along with water purification systems. Larger transactions and powerful players entering water markets imply that decisions regarding water are made farther and farther away from the community of origin, reducing the possibility for the public to voice its concerns.

### III. Community Externalities of Water Markets

In almost all water management systems, individuals hold water use rights with a backdrop of public ownership of water.<sup>32</sup> The public ownership of water is more powerful in states with a more robust public trust doctrine<sup>33</sup> because there the state has to face more duties. But in all states, water agencies oversee water rights regimes. In particular, water agencies must approve most water transactions. Market advocates frown upon the power of water agencies because they perceive bureaucratic decisionmaking as politically biased and a source of transaction costs.<sup>34</sup> Left unchecked, however, water markets may ignore the human right to water or environmental needs.

Setting aside the fundamental question about whether water should be commodified at all, if water markets are in place like they are today in the western United States and elsewhere, it is worth asking how to address com-

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28. Another way to put it is that “blue is the new green.” SALZMAN, *supra* note 18, at 22.

29. John Carreyrou & Amy Barrett, *Suez to Buy United Water for \$1 Billion, Making French Firm World’s Leader*, WALL ST. J., Aug. 24, 1999.

30. PICO Holdings Inc. acquires water rights and water-related assets, such as storage rights, in Arizona, Colorado, Nevada, and New Mexico. *PICO Overview*, SEEKING ALPHA, <https://seekingalpha.com/symbol/PICO/overview> (last visited Apr. 18, 2020); *Business Overview*, PICO HOLDINGS INC., <http://picoholdings.com/core-businesses.html> (last visited Apr. 18, 2020). Seventy-two percent of its shareholders are institutional investors, which shows the credibility of the firm. Jodi Pearce, *How Many PICO Holdings Inc. (NASDAQ:PICO) Shares Do Institutions Own?*, SIMPLY WALL ST. (Nov. 19, 2018), <https://simplywall.st/stocks/us/commercial-services/nasdaq-pico/pico-holdings/news/how-many-pico-holdings-inc-nasdaqpico-shares-do-institutions-own/>.

31. *Invesco Water Resources ETF*, INVESCO, <https://www.invesco.com/portal/site/us/investors/etfs/product-detail?productId=PHO> (last visited Apr. 19, 2020).

32. Regalia & Hall, *supra* note 14, at 68.

33. *See id.* (analyzing constitutional provisions on public ownership); *see also* National Audubon Soc’y v. Superior Court, 658 P.2d 709 (Cal. 1983) (providing an example of application of the public trust doctrine); Robin K. Craig, *A Comparative Guide to the Western States’ Public Trust Doctrines: Public Values, Private Rights, and the Evolution Toward an Ecological Public Trust*, 37 *ECOLOGY L.Q.* 53 (2010) (comparing public trust doctrines as applied to water).

34. TEXAS PUB. POL’Y FOUND., *THE CASE FOR A TEXAS WATER MARKET* 18 (2017), <https://files.texaspolicy.com/uploads/2018/08/16103756/2017-04-RR-WaterMarkets-ACEE-KHartnettWhite.pdf>.

munity externalities. Given the differences in water availability and the controversial nature of transfers—whether they be across political lines at national, state,<sup>35</sup> or local levels—it is worth asking: (1) which is the appropriate unit of governance to make transfer decisions; and (2) which negative externalities suffered by a community should be compensated.

### A. Levels of Governance

Although we speak of having *public* water rights imbued with a *public* trust, views differ as to who constitutes the public. Allocation of voice and decision-making power defines the public in “public water,”<sup>36</sup> which is relevant when assessing what community is affected by water transfers.

Governance of environmental matters always faces the problem of mismatched scales.<sup>37</sup> Political divisions do not match the natural borders of resources like water. From a scientific point of view, river basins are the natural unit of management for water quality and quantity.<sup>38</sup> Even basin-level management may be imperfect if staffed with technocrats. Water management needs to be both holistic and participatory.<sup>39</sup> Local involvement may lead to sounder environmental governance.<sup>40</sup> Communities have a particular attachment to water.<sup>41</sup> This attachment should translate into some participatory mechanism for the community in water allocation decisions,

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35. See Nathan Weinert, *Solutions for Interstate Groundwater Allocation and the Implications of Day*, 44 TEX. ENV'T L.J. 105 (2014) (demonstrating an overview of the limits on state regulations restricting groundwater interstate commerce).

36. See Regalia & Hall, *supra* note 14 (defining state waters and what powers of the state apply to them); see also Leighton L. Leighty, *Public Rights in Navigable State Waters—Some Statutory Approaches*, 6 LAND & WATER L. REV. 459 (1971).

37. JAMES SALZMAN & BARTON THOMPSON JR., ENVIRONMENTAL LAW AND POLICY 25-28 (4th ed. 2013).

38. See Rao Mylavarapu et al., *Watersheds of Florida: Understanding a Watershed Approach to Water Management* (Univ. of Florida June 2017), <https://edis.ifas.ufl.edu/ss568> (giving an overview of watershed management); see also Jeroen Warner et al., *Going With the Flow: River Basins as the Natural Units for Water Management?*, 10 WATER POL'Y 121 (2008) (analyzing countervailing arguments about how basin management can be politicized).

39. See Cecilia Ferreyra et al., *Imagined Communities, Contested Watersheds: Challenges to Integrated Water Resources Management in Agricultural Areas*, 24 J. RURAL STUD. 304, 304 (2008).

40. Keith Hirokawa, *Driving Local Governments to Watershed Governance*, 42 ENV'T L. 157, 160 (2012); see generally Keith Hirokawa, *Environmental Law From the Inside: Local Perspective, Local Potential*, 47 ELR 11048 (Dec. 2017) [hereinafter Hirokawa, *Environmental Law From the Inside*] (giving a general perspective on the local potential for environmental management).

41. This can be illustrated by the fact that the water board elected by the population that votes in any other local election, not just by farmers, are usually more reluctant to approve water transactions. Barton H. Thompson Jr., *Institutional Perspectives on Water Policy and Markets*, 81 CALIF. L. REV. 671, 734 (1993); see also J. Owen Saunders, *Trade Agreements and Environmental Sovereignty: Case Studies From Canada*, 35 SANTA CLARA L. REV. 1171, 1180 (1995) (reporting that Canadians have a different reaction to the sale of water than they have to the sale of other natural resources).

because the community will suffer the effects.<sup>42</sup> Community involvement may range from mere participation to actual decision-making power, and is often included in bottom-up integrated water management approaches.<sup>43</sup> But these approaches are not that common. Even where they exist, community involvement can be a challenge to achieve.<sup>44</sup>

In the United States, water is generally regulated at the state level, and therefore the interests of smaller geographical political units, such as municipalities or even an agricultural area, within the state may not be taken into account unless there is some decentralization of water management.<sup>45</sup> For example, if the northern part of a state is humid and not heavily populated, and the southern part has large, thirsty cities, the state government may favor the more populous area's needs because of the short time frame under which elected officials operate. The concerns of the northern community (where water may be coming from) are likely to be ignored.

Local governmental control also has pitfalls because local protectionism may block otherwise beneficial transactions for self-interested reasons. For example, irrigation districts formed by a group of irrigators often need to approve transactions between members and users outside the district. In irrigation boards, where the board is elected based on acreage instead of a one-person-one-vote principle, large landowners may effectively ban potential transactions from smaller farmers or users outside the districts to have that water available for themselves at a lower price.<sup>46</sup>

Striking a balance between state and local control is not easy, and it does not have a single answer. Socially, we rarely know where watershed boundaries are. Political boundaries are more transparent and trigger opposition to water transfers. Opposition to water transactions is stronger when water crosses political borders. The farther the water goes, the more intense the reaction against it can be expected to be.

In some regions, water can only be used on lands within the watershed.<sup>47</sup> Water used within a watershed will make its way back to the same system.

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42. See *infra* section III.B.

43. Ferreyra et al., *supra* note 39, at 305.

44. See generally Erik Mostert, *The Challenge of Public Participation*, 5 WATER POL'Y 179 (2003).

45. This comes from a case in Florida, where water management districts have a cooperative relationship with the Florida Department of Environmental Protection (DEP), which supervises them. *Water Management Districts*, FLA. DEP (last updated May 16, 2019), <https://floridadep.gov/water-policy/water-policy/content/water-management-districts>.

46. Thompson, *supra* note 41, at 734.

47. Richard C. Ausness, *Water Use Permits in a Riparian State: Problems and Proposals*, 66 KY. L.J. 191, 203-04 (1978). The doctrine, however, seems to have been eroded in recent times. See Olivia S. Choe, *Appurtenancy Reconceptualized: Managing Water in an Era of Scarcity*, 113 YALE L.J. 1909, 1911-13 (2004).

In some states, local jurisdictions have tried to assert control: counties<sup>48</sup> or groundwater districts<sup>49</sup> want to have a say in whether and where the water may be transferred. Still, in others, political control comes at the state level via legislative approval; the state legislature needs to approve transfers outside the basin. For example, the province of Ontario in Canada outright bans transfers outside Canada, and subjects transfers to another Canadian province to the approval of the provincial Minister of Natural Resources.<sup>50</sup>

In sum, it is not easy to define who is the relevant community. But more often than not, administrative decisions about water transfers are made by state agencies or departments. Their jurisdiction does not map the community where water is allocated away from. Due to this mismatch, it is a challenge, but not an insurmountable one, to ensure that the community of origin can provide input and mitigate the effects that may arise from water transfers.

## B. Externalities or Protectionism?

Water transfers can negatively impact the communities where the water originates. Once water is sold, the exporting community loses both the water and the jobs that had been making use of that water, including farming-dependent economic activity.<sup>51</sup>

The paradigmatic water transfer is across sectors, from rural to urban areas, or between distant wet and dry areas of a region. The more severe effects on communities occur where water sales come not from a more effi-

48. ELLEN HANAK, WHO SHOULD BE ALLOWED TO SELL WATER IN CALIFORNIA? THIRD-PARTY ISSUES AND THE WATER MARKET iii (2003).

49. KATHLEEN H. WHITE ET AL., THE CASE FOR A TEXAS WATER MARKET 12 (2017), <https://files.texaspolicy.com/uploads/2018/08/16103756/2017-04-RR-WaterMarkets-ACEE-KHartnettWhite.pdf>.

50. Province of Ontario Water Transfer Control Act, R.S.O. 1990, c. W.4 (Can.).

51. The experience of Carson County, Texas, is illustrative. Before the exportation of its groundwater, the county had new car dealers and two farm equipment providers. After the water was gone, the one farm equipment business struggled, and there were no new car dealerships. Joe Patoski, *Boone Pickens Wants to Sell You His Water*, TEX. MONTHLY (Aug. 2001), <https://www.texasmonthly.com/the-culture/boone-pickens-wants-to-sell-you-his-water/>; see also Robert Glennon, *Water Scarcity, Marketing, and Privatization*, 83 TEX. L. REV. 1873, 1889 (2005); HANAK, *supra* note 48, at 81:

[T]he same studies also demonstrate that there can be significant localized negative effects on individual farm workers and businesses and on local public agencies such as school districts. Thus, there may be ethical grounds for devising mitigation programs, even when a transfer does not trigger the legal requirement to do so.

These types of externalities to the community are not exclusive to the transfer of water rights. Individual Transfer Quotas in fisheries also raised similar problems in ports where the economy was not diversified, and the quotas translated into unemployment for the crews. Bonnie J. McCay et al., *Individual Transferable Quotas (ITQs) in Canadian and U.S. Fisheries*, 28 OCEAN & COASTAL MGMT. 85, 94 (1995); EUGENE H. BUCK, INDIVIDUAL TRANSFERABLE QUOTAS IN FISHERY MANAGEMENT 12 (1995), <http://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/4515/fishery.pdf>.

cient use of the resource, but from the idling of fields. If the water transferred comes from a more efficient use of water, a farmer will keep producing, and thus, employing workers and ordering supplies. In contrast, fallowing may lead to unemployment for farmworkers (direct effects), fewer business transactions for farm suppliers (indirect effects), and broader effects on the rural communities in general, “such as reduced expenditures by households and other institutions that have lost farm income or income from related goods and services” (spillover effects).<sup>52</sup> These combined effects produce a multiplier effect.<sup>53</sup>

Water transactions can reveal inefficiencies in water usage. Agricultural producers prefer to sell water used in lands producing low-value-added crops. Given the low productivity of those lands, the agricultural production probably did not use many production inputs.<sup>54</sup> As such, discontinuing the production of low-value-added crops may not impact the region much. A review of studies on water transfers and fallowing in several California counties shows that allowing between 6% and 25% of farmland in an area to be fallowed usually affects less than 1% of the economic activity of the region.<sup>55</sup> But while the overall economic activity of the region may not be affected, there may be localized effects. Furthermore, as water becomes a hot commodity, water transfers can go beyond these parameters, and the community may suffer as a result.

Water transfers can imperil a community’s future development. An individual farmer or farm company selling water might not have communitarian preferences<sup>56</sup> and may not consider the broader present and future effects on the community. The local community may have a long-term view of the needs of the members, encompassing both current and future generations. The public trust doctrine, which covers water in some states, requires this long-term approach.<sup>57</sup> For example, water boards elected by the local population (not just by irrigators) tend to block transfers of water more often than boards with a different composition.<sup>58</sup> Without regulatory mechanisms

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52. HANAK, *supra* note 48, at 89.

53. *Id.* at 81-82 (reviewing several empirical studies on land fallowing arising from water transfers, other pilot or environmental programs or regulations, and from simulations).

54. *Id.* at 124 (presenting the mitigating role that the mere economics on land fallowing have on the potential effects on communities).

55. *Id.* at 81.

56. See generally Thompson, *supra* note 41. Cf. Kyle Emerick & Dean Lueck, *Economic Organization and the Structure of Water Transactions*, 40 J. AG. & RES. ECON. 347, 360 (2015).

57. BARTON H. THOMPSON JR. ET AL., *LEGAL CONTROL OF WATER RESOURCES* 654-73 (5th ed. 2012).

58. Thompson, *supra* note 41, at 734.

ensuring that community impacts are accounted for, the community's future development may be impaired.<sup>59</sup>

Water market advocates argue that although negative externalities—that is, effects on other users—need to be internalized, the negative effects on communities—job losses, loss of future development opportunities, etc.—should not.<sup>60</sup> For them, community economic effects of water transfers are no different from any other economic transaction with winners and losers.<sup>61</sup> In other words, relocating water is no different than a manufacturing plant relocating from the Michigan to China.<sup>62</sup> According to these scholars, compensation by the parties entering into a water transaction to the community for those effects is not a matter of efficiency, but equity,<sup>63</sup> which a market mechanism will not take into account unless its regulatory framework requires it to do so. The equity concerns are even more acute when the asset is water because its transfer affects environmental conditions in a watershed, which can be hard to recover from. Additionally, advocates of water markets suggest that those community effects are not to be taken into account because the situation could be reversible; the local community could purchase the rights back in the future if they value them more than the out-of-basin purchaser does. A local community may, however, be in no position to outbid large corporations like ExxonMobil or Suez. Importantly, the capitalist water market is premised on the idea that willingness and ability to pay should be the determinants of water allocation. It is questionable whether water should be allocated based solely on the ability to pay.

While not justifiable in efficiency terms, compensation for community externalities has occurred in water and in other markets. Economist James Murphy suggests that compensation for these negative externalities should only be transitional, temporary funds to encourage efficient behavior.<sup>64</sup>

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59. *See generally id.* (analyzing the California case for water markets and the interplay between government rules and traditional institutions which tend to be reluctant to transactions with external actors). *See also* GLEICK ET AL., *supra* note 18, at 39. *Cf.* Emerick & Lueck, *supra* note 56, at 355, 360.

60. GLEICK ET AL., *supra* note 18, at 71.

61. James L. Huffman, *Water Marketing in Western Prior Appropriation States: A Model for the East*, 21 GA. ST. U. L. REV. 429, 436 (2004).

62. Kaufman, *supra* note 13.

63. "Pecuniary externalities arise when the external effects are transmitted through higher prices. The stranding of assets that result from the exit of entitlements from an irrigation district can result in pecuniary externalities for the remaining irrigators. To the extent that these third-party effects do not create deadweight social losses, their removal does not improve economic efficiency." ANNA HEANEY ET AL., THIRD-PARTY EFFECTS OF WATER TRADING AND POTENTIAL POLICY RESPONSES 9 (2005), <https://www.pc.gov.au/research/supporting/water-trading/watertrading.pdf>.

64. James J. Murphy et al., *Mechanisms for Addressing Third-Party Impacts Resulting From Voluntary Water Transfers Running Title: Water Markets and Third-Party Impacts*, in USING EXPERIMENTAL METHODS IN ENVIRONMENTAL AND RESOURCE ECONOMICS 91, 110 (J. List ed., 2005).

Examples of transitional remedies include: worker training and assistance measures to mitigate impact; improving the economic tissue of the region; and ensuring a transition toward a new economic reality.<sup>65</sup> Water is more challenging because it is essential for development. If the majority of water rights have been transferred outside the area, future growth will be impaired.

When considering measures to address these community externalities, the risk is distinguishing between real effects on the community and pure natural resource protectionism.<sup>66</sup> Natural resource protectionism usually refers to the practice of countries enacting anti-trade measures by subjecting foreign products to exacting environmental standards or restricting the export of its own resources, such as water. Canada's water protectionism is illustrated in the free trade negotiation with other North American partners.<sup>67</sup> But this protectionism can be replicated in other, smaller, geopolitical units. While, given the risk of natural resource protectionism, it is hard to ease out the real consequences worth considering, communities must have a role in determining the use of their water. Locals may better understand environmental effects, and thus, are in a better position to assess environmental and social externalities.<sup>68</sup> The relationship between a community and water is different

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65. HANAK, *supra* note 48, at 88-94 (discussing the advantages and disadvantages of targeted versus general programs. Targeted programs compensate those more directly affected, such as unemployed farm workers or farm suppliers. Regarding the first, a claims-based system regarding cash compensation could be envisioned, but high administrative costs and the political economy of the affected group disfavor it. Other targeted programs include job search and training programs for laid-off workers. "General assistance might take the form of measures to improve the economic environment of the area, for example, infrastructure investments or reduced sales taxes, or might support specific projects of benefit to area residents."). Lessons could also be drawn from the just transition framework put forward to offer a path of adjustment for those regions whose economic activity may be affected by regulations mitigating climate change. For an overview, see JOHN CARTWRIGHT, *TOWARD A JUST TRANSITION*, <https://www.wri.org/climate/expert-perspective/toward-just-transition> (last visited Apr. 19, 2020).
66. Christine A. Klein, *Law of the Lakes: From Protectionism to Sustainability*, 2006 MICH. ST. L. REV. 1259, 1278 (2006). Some groundwater export restrictions may be permissible, dicta in the *Sporhase*, states that an arid state might be able to establish a relationship between the ban on exports and the conservation but did not say how to do this. Courts have been unreceptive to the conservation arguments. See *City of El Paso v. Reynolds*, 563 F. Supp. 379, 388-90 (D.N.M. 1983); Nathan Weinert, *Solutions for Interstate Groundwater Allocation and the Implications of Day*, 44 TEX. ENV'T L.J. 105, 121 (2014).
67. Saunders, *supra* note 41, at 1182. The Great Recycling and Northern Development (GRAND) Canal of North America was a project proposed to dam James Bay to collect water "wasted" in the Quebec River and pump it south to the Great Lakes and Mississippi River. This project prompted the parties to the free trade agreement to make clear that the North American Free Trade Agreement did not generate any right to the water resources of the parties. The North American Water and Power Alliance (NAWPA or NAWAPA) is another project that implied taking Canadian water into the United States. The U.S. Army Corps of Engineers envisioned taking water from Alaska and the Canadian Northwest through the Rocky Mountain trench and replenish the Colorado and the Mississippi systems. This behavior also exists at a smaller scale. *Id.* at 1181-84.
68. Hirokawa, *Environmental Law From the Inside*, *supra* note 40, at 11054.

in nature from other goods; the long-term environmental effects are difficult to quantify, and the future of the community is at risk.

Regulatory measures and policies that address potential community externalities may not necessarily come with monetary compensation; they could be merely procedural. But procedural measures create transaction costs and only transactions that are clearly socially beneficial will be able to move forward.<sup>69</sup> The next section offers a portfolio of measures to address these externalities.

#### IV. Internalizing Water Markets' Externalities

Buying and selling water is not like buying and selling shoes or notebooks. We can buy a pair of shoes without going through a review procedure. That, however, is not the case for water. Water users are interdependent—any change in a water right can affect other users. Many water transactions change the place and type of use. To account for the high likelihood of externalities and the interdependency between users, water transfers are subject to review procedures. Water agencies review all applications to sell or transfer water rights. In conducting the reviews, agencies consider the effects on other users and the environment. Transactions are often subject to a version of the “no-injury rule,”<sup>70</sup> under which a change in a water right cannot harm other water users. But today, reviews do not satisfactorily capture the social impacts on communities of origin.

Below are options for incorporating community externalities in the current water transaction regime. The different mechanisms vary depending on the identity of the decisionmaker and the level of discretion involved. Sharp rules involve less discretion and are associated with fewer opportunities to lobby because a rule is not subject to bureaucratic fiat. Rules allow participants in the transfer to know the outcome beforehand, decreasing transaction costs. Standards do, however, allow tailoring to particular situations. The first three options involve more discretion, and the rest are more rule-like:

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69. According to Bonnie Colby, there are rarely perfect mechanisms to compensate for environmental externalities in the western United States, and only transactions causing outrageous effects on third parties are barred. Thus, transaction costs arising from the review procedure can be a good substitute for the lack of internalization. She coins the term “policy-induced transactions costs.” Bonnie G. Colby, *Transactions Costs and Efficiency in Western Water Allocation*, 50 AM. J. AGRIC. ECON. 1184, 1184 (1990).

70. 1 WATERS AND WATER RIGHTS §14.04 (2019).

**Option One (public interest review):** Within the broad conception of public interest already present in some transfer reviews,<sup>71</sup> the analysis should be more comprehensive and cover present and future effects for the community, including consideration of the loss in opportunity to develop.

As the following examples show, today, vague references to public interest may not encompass the interests of the community. In Arizona water law, there is a broad reference to the “public interest” in the review of transactions, but it seems that only vested rights have been protected in practice.<sup>72</sup> California’s standard for long-term transfers reads: “[T]he board shall reject an application when in its judgment the proposed appropriation would not best conserve the public interest.”<sup>73</sup> California’s policy guidelines suggest public trust (that is, the theory that water should be managed by the state like a trust for the public),<sup>74</sup> public interest, and protection of the environment are separate rationales.<sup>75</sup> But there is little guidance on how and what to assess under public interest.

Public interest standards can increase the uncertainty of review processes and may open the door to biased decisions; however, review under a public interest standard facilitates a case-by-case assessment of potential impacts of a water transaction. The discussion of public interest opens the discussion to the myriad of values that interact in water.<sup>76</sup> A proposed Model Water Transfer Act for California offered a more targeted approach, directing the responsible agency to consider community costs when reviewing a transaction if the water sold came from land following.<sup>77</sup>

**Option Two (public participation):** The discussion of public interest may be conducted as a part of the agency review, but it can also be open to public participation, allowing the community to bring firsthand evidence of the

71. See CAL. WATER CODE §1255 (2020). California’s petition for long-term transfers must include reference to the measures required by the California Department of Fish and Game regarding the mitigation of the transfer’s effect. *Id.* §1735. Section 1243 of the California Water Code establishes that “in determining the amount of water available for appropriation for other beneficial uses, the board shall take into account, whenever it is in the public interest, the amounts of water required for recreation and the preservation and enhancement of fish and wildlife resources.” *Id.* §1243(a).

72. Janet M. Howe, *Arizona Water Law: A Parched Public Interest*, 58 ARIZ. L. REV. 541, 543 (2016).

73. CAL. WATER CODE §1255.

74. National Audubon Soc’y v. Superior Court, 658 P.2d 709, 718 (Cal. 1983).

75. STATE WATER RESOURCES CONTROL BD., POLICY FOR MAINTAINING INSTREAM FLOWS IN NORTHERN CALIFORNIA COASTAL STREAMS 24 (2010), [http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/instream\\_flows/docs/ab2121\\_0210/adopted050410instreamflowpolicy.pdf](http://www.waterboards.ca.gov/waterrights/water_issues/programs/instream_flows/docs/ab2121_0210/adopted050410instreamflowpolicy.pdf).

76. See Michael Warburton, *Toward Greater Certainty in Water Rights?—Public Interests Require Inherent “Uncertainty” to Support Constitutional Governance of Our State’s Waters*, 36 MCGEORGE L. REV. 139, 147-50 (2005).

77. Brian E. Gray, *A Model Water Transfer Act for California*, 4 HASTINGS W.-NW. J. ENV’T L. & POL’Y 591, 601-02 (1996).

potential impacts. In some jurisdictions, public participation is formally required when the transfer reaches a certain level of significance.

In California, a hearing is triggered if water comes from fallowing and the volume exceeds 20% of the water supplies of the area.<sup>78</sup> This provision ensures a right to participation in water governance,<sup>79</sup> but does not oblige compensation for community externalities. Public hearings may encourage participants in water transactions to address externalities to appease the community, prompting a social contract—that is, a beneficial agreement between all the stakeholders. Multinational companies seeking positive reputations or companies that maintain operations in the area (such as the bottled water companies) might be particularly sensitive to such pressure.

**Option Three (local veto):** One step further is granting the public decision-making power. Once the agency has reviewed a transaction, it could call a local referendum for voters to decide the fate of a transaction. Illinois considered, but did not enact, such a measure to allow local communities to decide whether their water delivery should be privatized.<sup>80</sup>

**Option Four (total ban):** Communities worried about the negative impacts of water transactions could take the extreme measure of banning all water right transfers, or at least, those outside the basin. This measure could be overreaching because water markets can bring positive change. While a flat-out prohibition has not been enacted, regulations restricting groundwater

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78. CAL. WATER CODE §1745.05.

79. See Rhett B. Larson, *The New Right in Water*, 70 WASH & LEE L. REV. 2181, 2236–66 (2013) (providing an account of a right to participate in water governance). Larson conceives the right to participation in water governance as a better embodiment of the human right to water than a right to the provision of water. The latter implies significant shortcomings in terms of economic and environmental sustainability, which the right to participation does not share. Larson's definition of the right of participation in water has much in common with negative rights. Nevertheless, some of the tenets he argues for the right of participation as he conceives it, have plenty in common with the rights of communities in this paper. He describes these participation mechanisms as follows: "Empowering disadvantaged communities and establishing procedural safeguards will facilitate fair and broad stakeholder participation in water-policy development and mitigate the effect of government corruption on sustainable and equitable water policy." *Id.* at 2203.

80. Citizens Util. Bd., *Rep. Connor, Citizens Utility Board Urge Support of Bill to Require Referendum Before Il Cities Privatize Water Systems*, PR NEWSWIRE (Mar. 18, 2019), <https://www.prnewswire.com/news-releases/rep-connor-citizens-utility-board-urge-support-of-bill-to-require-referendum-before-il-cities-privatize-water-systems-300813899.html>. This bill was re-referred to the Rules Committee of the Illinois Legislature as of March 2019. *Bill Status of HB 2392*, ILL. GEN. ASSEMBLY, <http://www.ilga.gov/legislation/BillStatus.asp?DocNum=2392&GAID=15&DocTypeID=HB&LegId=118355&SessionID=108&GA=101> (last visited Apr. 19, 2020).

exports came close. For example, Butte County in California prohibited groundwater mining if water was transported from the basin.<sup>81</sup>

**Option Five (partial ban based on the source of water):** Another option would be to limit transfers to only conserved water. Such a measure would allow farmers to transfer water if they have increased irrigation efficiency or switched to less water-intensive crops. Such a ban would prevent the fallowing of fields simply to slake the thirst of big cities and corporations. Thus, agricultural activity will continue in the area. Some counties or districts, like the Imperial Irrigation District in California, prohibit water transfers if water comes from fallowing, but allow transactions if water comes from gains in irrigation efficiency.<sup>82</sup>

**Option Six (riparian rights):** A different type of program could import some elements from the riparian rights doctrine and adopt a system where water rights are appurtenant to the land. In this theoretical approach, which has not been implemented, water rights could only be transferred with the conveyance of appurtenant land (land overlying the groundwater reservoir or riparian to a waterway).<sup>83</sup> The water could only be used on that land. This arrangement should achieve a similar result as banning transactions outside the basin (as mentioned in Option Four), but transferability is even more limited. This mechanism locks economic activities in the area.

**Option Seven (cap on out-of-basin or out-of-the-jurisdiction transfers):** Restricting, albeit not prohibiting, transactions outside a community via a cap is another mechanism to address community concerns regarding water transactions.<sup>84</sup> Such a program could protect community life and prevent environmental impacts. Instead of a total ban, limiting the amount of water

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81. Gregory S. Weber, *Twenty Years of Local Groundwater Export Legislation in California: Lessons From a Patchwork Quilt*, 34 NAT. RESOURCES J. 657, 706 (1994). Mining is defined as pumping from groundwater bodies in excess of replenishment. *Id.* Nebraska restricted out of state transfers of groundwater. The rule passed scrutiny before the U.S. Supreme Court because although the rule affected interstate commerce, it protected public health and safety, which is at the core of the state's police power. Protecting the health of the economy will not survive the scrutiny though. *Sporhase v. Nebraska*, 102 S. Ct. 3456, 3464 (1982). Baltimore took a step further and banned the privatization of its water utility. See Douglass, *supra* note 21.

82. HANAK, *supra* note 48, at 73 (Imperial Irrigation District had, like other local agencies, a policy disallowing fallowing as a source for water transfers).

83. Currently, in some states, like Oregon, water rights are considered appurtenant but can be independently transferred from the land. If the land is transferred, however, the presumption is that water rights are also transferred. OR. REV. STAT. §§537.211(4), 537.330 (2020).

84. See generally BARLOW & CLARKE, *supra* note 23, at 89; see also BUCK, *supra* note 51, at 6 (providing a non-water example).

that can be transferred outside the jurisdiction may be an acceptable middle ground. This approach mitigates the effects of transfers: fewer workers will lose their jobs and the impacts on other sectors (like agricultural suppliers) will be smaller. Victoria, Australia, imposed a 4% cap on trade beyond the irrigation district, that is, on the volume of water entitlements that can be traded permanently out of an irrigation district.<sup>85</sup>

**Option Eight (leases):** Transferability could be restricted by allowing time-limited leases but not outright sales. Leases are expected to have fewer, shorter lived effects.<sup>86</sup> This would make water transactions outside the basin less attractive in areas where infrastructure is lacking. While parties could still transfer water, the effects on other users and the environment would be short-lived, and thus, the review of the transaction could be streamlined. Given the huge investment needed to acquire easements and install pipes, investors may be discouraged from entering into time-limited leases.

**Option Nine (limiting who can trade with whom):** A way to allow water markets while preserving future development opportunities is by permitting certain right-holders to trade with certain other defined rightsholders. Trade could be restricted between types of uses. For example, all farmers within a basin could only transfer water rights to other farmers. This should keep agricultural rights within the community and reduce some of the indirect effects on businesses dependent on agriculture. If small business protection were a concern with water transactions—and it may well be given the increase of agribusiness—a similar system could be implemented based on acreage or crop and allow small farmers to transfer only to other small farming operations.

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85. There is a cap exchange rate that is not fulfilled by the individuals, but by the state, which includes its own entitlements to further mitigate potential effects. Hence, even if the buyer in Victoria, Australia, will receive 0.9 cubic meters (m<sup>3</sup>) (equivalent to about 237 gallons), 0.09 m<sup>3</sup> more will be left in the river (10% of 0.9 is 0.09) by the state from its own endowment. Therefore, the water left in the river is 0.19, more quantity than before in aggregate, even though the flow between upstream and downstream will be reduced. Vicky Waye & Christina Son, *Regulating the Australian Water Market*, 22 J. ENV'T L. 431, 444 (2010); see also BARLOW & CLARKE, *supra* note 23, at 89 (detailing an account on the inefficiency arising from the cap).

86. Short-term transfers may have negative effects but those are expected to be short-lived. Thus, in California, short-term transfers are subject to a less demanding review than long-term ones. The latter are subject to the California Environmental Quality Act, requiring an environmental impact statement. STATE WATER RESOURCES CONTROL BD., *A GUIDE TO WATER TRANSFERS*, fig.1 (1999), [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_transfers/docs/watertransferguide.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_transfers/docs/watertransferguide.pdf); see also CASADO PEREZ, *supra* note 2, at 68.

This trading limitation is how some fishing individual transferable quotas frameworks have preserved development opportunities.<sup>87</sup> For example, Alaska has a tiered fishing quota system dependent on the size of the vessel. Larger vessels cannot buy fishing quotas from smaller ones. The aim behind this system is to protect small businesses.

**Option Ten (free transfers but with compensation):** Instead of banning outright all transactions, a better alternative may be to consider compensatory mechanisms to revitalize the community. The compensation could be determined on a case-by-case basis after the review of a transaction. The determination ex-post of the compensation introduces uncertainty.

In past transactions, sometimes parties to a transaction assign a sum to tackle mitigation of the transfer effects and community revitalization. One of the largest and more important water deals, the 2002 transaction between the Imperial Irrigation District and San Diego, California, contained a clause establishing \$20 million to mitigate third-party economic effects.<sup>88</sup>

**Option Eleven (tax):** Another measure that entails no discretion is a tax on the transfers. Establishing a fixed tax rate will avoid the discussion about the particular effects on the community of each transaction and their quantification. The funds collected could be invested in the community. In 2001, Butte County, California, established a fee (5% of transfer price, which amounted to \$3.75 per acre foot transferred) to compensate for community losses.<sup>89</sup>

Each jurisdiction can choose from this portfolio and can deploy multiple regulatory options simultaneously. Given the potentially positive role that water markets can play in water management by putting water to high-value uses, two criteria could guide the choice of mechanism. First, jurisdictions should reduce transaction costs. Water transactions are subject to a demanding review, which is lengthy and costly. Adopting a rule-like approach for community externalities would reduce transaction costs and make the review procedure less cumbersome. Second, transactions should incorporate community externalities accounting for the intensity of those externalities. The need to incorporate these community externalities into the analysis becomes more acute the longer the transaction and the further the water is taken

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87. BUCK, *supra* note 51, at 6.

88. Richard Howitt & Ellen Hanak, *Incremental Water Market Development: The California Water Sector 1985-2004*, 30 CAN. WATER RESOURCES J. 73, 79 (2005).

89. HANAK, *supra* note 48, at 73.

from the community of origin. Based on these two criteria, an advisable path could be subjecting transactions that are likely to impact the community significantly—for example a permanent transaction between the agricultural sector and a city outside the basin—to a tax and allowing public participation in deciding how to spend the funds collected.<sup>90</sup>

## V. Conclusion

As climate change makes water scarcer and the population grows, water becomes ripe for investment. Water transactions have been a marginal tool of water reallocation, but water markets are becoming more prevalent. Powerful investors are buying surface and groundwater rights, purchasing interests in water utilities, and bottling water and shipping it far away. While market advocates argue markets and privatization are more efficient than an administrative agencies' system of water management, they ignore concerns regarding equity. Water is unique. The essential nature of water explains the heated reaction that any form of water transfer or privatization elicits. Water plays an essential role in the ecosystem, but also in our communities. We cannot grow our food without water, nor can our towns flourish. Once transferred, water rights are challenging to recover.

Current water market regulations are not ready to respond to the challenge. They lack a framework to respond to the effects that water markets can have on communities. The current landscape in water markets where large corporations are key actors makes this deficiency in our water regimes more problematic. Communities face a David-versus-Goliath situation in water transfers against the world's largest private-equity funds, such as The Carlyle Group; biggest water companies such as Suez and Veolia Water Technologies; and other multinational energy companies such as Exxon.

While transactions differ on the effects they impose on communities, communities suffering immediate economic slowdown and being limited on deciding future development are a constant across water transfers. Acknowledging that some water transfers are needed to continue western prosperity, this chapter presents mechanisms to attune our current water legal regimes to today's water markets by accounting for the effects on the communities from which they originate. In other words, this chapter offers mechanisms to

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90. Past water transfer experiences suggest that deciding how to spend the funds collected to respond to community externalities is not easy. For the Imperial Irrigation District deal, "a committee of economists appointed by the county supervisors and the purchasing and selling agencies was supposed to administer it; however, the money has apparently not been spent." CASADO PEREZ, *supra* note 2, at 153 (footnotes omitted).

facilitate efficiency without neglecting equity, without neglecting the communities where water comes from.