

Drinking water disparities in San Joaquin Valley: Using smaller spatial scales for root cause analysis

Keywords: *water governance, drought, political economy, California, environmental justice, environmental racism*

1. Introduction

With the passage of Assembly Bill 685 in September of 2012, California became the first state in the U.S. to recognize the human right to water (International Human Rights Law Clinic). Environmental justice (EJ) activists have taken advantage of this political climate to push forward their agenda and publish findings on social disparities in drinking water access. However, most of this research does nothing more than highlight disproportionate burdens and very few seek out underlying root causes. As far as solutions go, most bow towards the 'easy' fix of infrastructure funding through state grants (Balazs, Morello-Frosch and Hubbard; White). This is a stark contrast from the traditional environmental justice discourse, which aggressively sought out polluters to incriminate and hold accountable. Why has justice activism become complacent with fixing the faucet instead of standing up to confront the negligent landlord?

This study identifies why the EJ discourse shifted towards a more epistemological explanation of the status quo, which led to both the dominance of infrastructure projects as mitigation measures and an obsession with proving correlations between race, income, and pollution. While the race-income argument is important in its own function, a more localized analysis of marginalized populations identifies more specific indicators, which in turn can serve as the foundation for more specific (and theoretically, effective) policy measures. This is corroborated by logistic regression analyses, which showed that more refined indicators such as housing vacancy rates and linguistic isolation rise to the surface at smaller scales. Improved understanding of why and under which conditions social disparities arise can contribute to the development of more nuanced policy initiatives.

Currently, within the study of social disparities in drinking water access, there is a clear divide between the motivations for social research and subsequent mitigation efforts. The San Joaquin Valley is in need of a new approach to bridge the EJ agenda with tangible and pragmatic policy prescriptions. This study suggests that looking at the *marginalized within the marginalized* may be the best way to do so.

2. Research Objective and Questions

In order to identify the root causes of the social disparities, the objective of this study is to quantitatively and qualitatively measure the impact of socio-political institutions on community water systems' (CWS) compliance rates to federal water quality standards. It is then necessary to clarify the conditions under which these social disparities took root in SJV, and why they continue to persist today. This thesis contributes by:

- a) Measuring the significance of socio-political and economic variables on CWS quality compliance; and
- b) Drawing logical connections between these variables, academic theories, and historical development.

3. Methodology

The theoretical foundation of this thesis is grounded in a literature review on the application of EJ onto drinking water disparities. Adopting a poststructuralist approach to analyse descriptive structuralist concepts of environmental injustices (the social disparities identified in Balazs' initial work), the literature review 1) identifies a shift in the epistemology of EJ literature, 2) parses out the implications of this shift for research and policy, and 3) critically evaluates current studies on drinking water injustices. By contrasting traditional polluter-v.s.-community studies with emerging pollutant-v.s.-community drinking

water studies, the review outlines how this shift explains why infrastructure projects have gained traction as the most logical solution for local-level issues of access.

Next, the study presents a historical review of political economies of water management and migration in the San Joaquin Valley. The current state of water governance in California is a reflection of a centuries-worth of convoluted state and federal policies and private interests. A historical review shows the intertwinement of migration and water management through the evolution of relevant land and water rights that likely shaped the demographic patterns of today. A number of key works by historians and anthropologists illuminate how water resources were used to manipulate the state (Wittfogel; Worster; Hundley); however, they do not relate the observations to current environmental injustices. This section highlights the contemporary overlap between the epistemologies of rural studies, EJ, and water management.

Lastly, this thesis combines quantitative and qualitative approaches to challenge the predictive utility of the race-income paradigm that pervades EJ literature: logistic regression weighing demographic indicators versus water system compliance, and stakeholder interviews from the government and civil sector to study differences and similarities in perspectives. Unlike most other studies on drinking water disparities, this study uses a comprehensive indicator to account for all contaminants, rather than focusing specifically on the concentration of one (such as arsenic or nitrate) to proxy for all others (e.g. Balazs, Morello-Frosch and Hubbard, 2011). In another move away from the traditional discourse of race and income, this study tests for additional demographic variables in order to better understand underlying social dynamics.

4. Significance of Research

The driving motivation behind this study is to understand why the EJ discipline lost interest in addressing the institutional root causes of drinking water injustices. The current state agenda prioritizes pinpoint mitigation efforts in the form of grant and loan-based infrastructure funds. With limited funding for

infrastructure, however, we must look past brute financing and onto other alternative measures to boost community resilience. Race and income serve a practical role in furthering the political agenda of EJ, but lose explanatory value when working within disadvantaged poor or minority populations.

The findings of this thesis are intended to supplement infrastructure funding initiatives by identifying alternative pathways to improving drinking water access. The ability to better describe the demographic variables that are associated with non-compliant water systems can also improve funding allocation decisions. By building a deeper understanding of demographic indicators that contribute to water system vulnerability, public policies (whether technical or social) can shift from being reactive to proactive. This study suggests supplementing infrastructure grants with an alternative policy pathway to address water injustice in California, namely through a re-adjusted focus on increasing residential mobility capabilities through reformed land and housing policies.

Works Cited

- Balazs, Carolina, et al. "Social Disparities in Nitrate-Contaminated Drinking Water in California's San Joaquin Valley." *Environmental Health Perspectives* 119.9 (2011).
- Hundley, Norris. *The Great Thirst*. University of California Press, 1992.
- International Human Rights Law Clinic. *The Human Right to Water Bill in California: an implementation framework for state agencies*. Berkeley: UC Berkeley, 2013.
- White, Jeremy. "California drought relief package heads to governor's desk." *The Sacramento Bee* 20 March 2014.
- Wittfogel, Karl A. *Oriental Despotism: a comparative study of total power*. Forge Village: Yale University Press, 1957.
- Worster, David. *Rivers of Empire: Water, Aridity, and the Growth of the American West*. Oxford University Press, 1992.