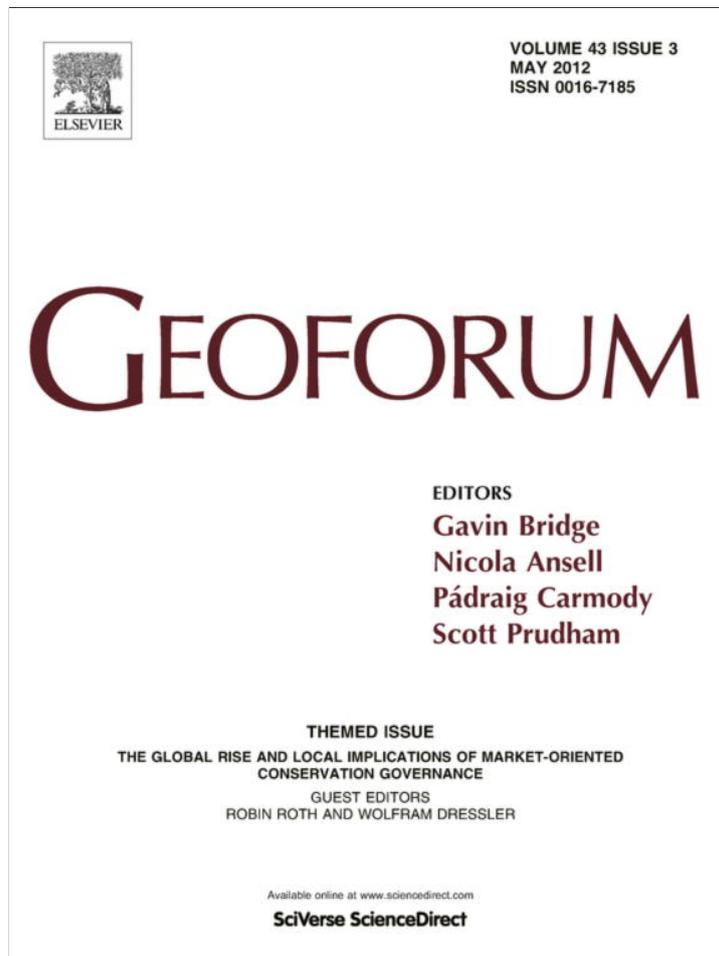


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## Hybrid drinking water governance: Community participation and ongoing neoliberal reforms in rural Rajasthan, India

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### ABSTRACT

This paper examines a Rajasthan (India) drinking water supply project that relied on hybrid governance reforms in its original design. Decentralization and marketization, combined with a participatory approach, were intended to facilitate an empowering shift in state-citizen relationships. Paying citizens were expected to make quantity and quality demands of the state as consumers, not welfare beneficiaries. Research on the project 3 years after its completion revealed that although payment for water and community participation were intended to compel the state to provide clean water, they failed in this regard. The problem of an unreliable state supply was solved through small scale privatization, a decision 'independently' reached at the local scale, but one that served to further undermine the state's ability to provide clean water.

In this paper, we trace the shifts in regulation that evolved in the post-project phase at both the state and village scale that resulted in the delivery of contaminated water. Ethnographic research indicates that community participation was introduced as a set of institutions that would govern how villagers interacted with the state and its water supply, but villagers altered community participation by introducing reforms in water governance as a way of coping with an unresponsive state and increased work burden. Community participation evolved in contradictory ways as the impacts of neoliberal environmental governance were felt. The paper contributes to understandings of neoliberalization processes' local impacts by analyzing their ongoing hybridization at multiple scales. It further calls into question foundational notions that community participation in resource governance is the appropriate solution to drinking water supply.

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### 1. Introduction

*Pani hi jivan hai!* (Water is life!) This well-known Hindi slogan recently re-emerged in Rajasthan due to the Government of Rajasthan's (GOR) new *Jal Abhiyaan* (Water Campaign), a water conservation and sanitation awareness-building program that started in villages and towns throughout the state in May 2006. A prominent feature in the *Jal Abhiyaan* supporting documents is the success of community participation in the sustainability of Our Water (a pseudonym), a drinking water supply project in Churu, Hanumangarh and Jhunjhunu districts of northern Rajasthan that started in 1994 (but was not a part of the *Jal Abhiyaan*). Following up on previous research (1997–2002) that studied the implementation of Our Water's community participation

programs (O'Reilly, 2004, 2006a, 2006b, 2007), we undertook a study of community participation's impact on system sustainability after the project's completion.<sup>1</sup> Little research on natural resource development projects, or development projects in general, has followed up after projects' closure to ascertain the outcomes of these projects (e.g., Agrawal, 2005; Harris, 2006). This study adds to those few not only by following-up, but by conducting the follow-up as part of a multi-phase, longitudinal study. In summer 2008, we returned to the project area and conducted extensive interviews, focus groups, and water quality testing in order to collect data on social and environmental changes wrought by the introduction of the 24-h clean drinking water supply. In this paper,

<sup>1</sup> We use the term "pre-project" to refer to the period before water was supplied by the Our Water project infrastructure. We use the term "post-project" to refer to the period after project construction and community participation activities were completed in the entire project area. Project villages received water through the Our Water as soon as construction in their area was finished, i.e., between 2000 and 2005.

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we examine how drinking water governance changed in the project area, but the pre-project status quo of the sporadic delivery of contaminated water did not change.

The Our Water project was designed to reform drinking water supply through a mixture of decentralization and marketization. While the combination of reforms at the state and village scales has remained, the state has reneged on its contract to provide clean water. Before the Our Water project, the water supply had been unreliable and contaminated but it was supplied to villagers for free. The Our Water project was intended to raise villagers' expectations from their government by promising access to clean water, regularly supplied, in exchange for nominal payment. Our research indicates that water supply in the post-project phase continued to be unreliable and contaminated, but that nearly 100% of villages paid their bills on time.

A great deal of recent work in political ecology investigates environmental regulatory reform and governance (Batterbury and Fernando, 2006; Bridge and Jonas, 2002; Heynen et al., 2007; Jiang, 2006; McCarthy, 2002; McCarthy and Prudham, 2004). Bakker (2007) persuaded convincingly for greater analytical precision in the exploration of neoliberal re-regulation, and Perreault (2005) argued additionally that analytical focus must also be trained on the shifting scales where decisions are made, and the contradictions and inconsistencies that occur. Drawing on a subset of these literatures concerned with water governance, we trace the shifts in regulation and oversight that evolved over the course of the Our Water project. A combined effect of material infrastructure and regulatory reforms in Our Water contributed to the post-project phase relationships that developed between the state and citizens, and citizens and citizens (Bakker, 2003, 2007; McCarthy, 2005; Perreault, 2005).

We accept arguments that when it comes to neoliberalism in practice, we are likely to find hybrid forms reflecting the mutually-supportive co-existence of state-led and market-led regulations. Considering complementary and conflicting forms of regulation provides an analytical foothold in this paper because Our Water was designed to work within existing state regulations (Mansfield, 2007) and combines multiple forms of regulation (Bakker, 2007). Our Water was designed (a) to remain state-owned and operated—including the setting of water tariffs by the state instead of market forces—and (b) to devolve to villages the control and maintenance of the water infrastructure within village boundaries. The question we pursue here is what further social and regulatory changes occurred in the post-project phase in ways that reproduced the pre-project status quo of contaminated water, irregularly supplied.

As written in Our Water project documents, sustainability of the drinking water supply depended on community participation. What these documents took for granted was that sustainability of the supply was equally dependent on reconfiguring pre-existing relations between the state/provider and citizens/consumers. The actual reconfiguration that took place was primarily on the side of civil society, as citizens became paying customers and engaged in maintaining village level water supply infrastructure. The state never assumed the role of reliable provider. Nonetheless, the GOR considers the project a success and attributes that success to community participation, defined as citizens now paying for water. Our investigation defined success differently and arrived at the opposite conclusion: citizens across caste and class are paying for (and drinking) contaminated water and have little power to compel the state to provide drinking water as promised. This paper extends existing critiques of participation in development by demonstrating that community participation may be introduced as a new form of resource governance, but it evolves in contradictory ways as the impacts of neoliberal environmental governance are felt.

This paper contributes to scholarly conversations on water governance, in general, and community participation, in particular. The case under consideration identifies hybrid forms of neoliberalization as ideals and practices, with attention to their local impacts and specificities (Castree, 2008b). We are interested in the policies and necessities guiding drinking water supply in Rajasthan, arguing that the political economy of water supply and the strategies citizens deploy to manage their access to state-controlled drinking water assisted in maintaining the status quo of contaminated water provision. Below, we analyze how reforms in water governance resulted in the delivery of contaminated water to the local population, and rendered local people unable to prevent it. Put differently, we argue that a variety of neoliberal reforms and complex responses to them enabled the state to remain impervious to customer complaints about water contamination.

Before taking up these lines of thought, we introduce our case study and methods.

## 2. Our Water in the post-project phase

The Our Water supply was a project of Indo-German economic cooperation. It began in 1994 as a replacement system for an earlier dysfunctional GOR drinking water supply scheme in three northern districts of Rajasthan known as the *khaaraa paani* (salty water) belt, where groundwater is saline (see Fig. 1). Water flowing south from the Himalaya through the Indira Gandhi Canal was tapped, treated and piped through a system of canals, pipelines, treatment plants, and pumping stations. All water in villages is delivered at public standposts (taps); a single meter measures water use, and villagers pay a portion of the bill based on the number of household members, including livestock. By the project's completion in 2005, approximately 378 villages and two towns received and paid for project water.

Our Water is an example of a hybrid (tripartite) model for water supply management wherein the state regulates and monitors the supply, but also relies on private contractors and civil society for the system's efficient functioning (Bakker, 2007; Laurie, 2007). The GOR continues to own the water supply, but through the Our Water project, it commodified water services by billing villagers for water they previously got for free (O'Reilly, 2006a). Charging villagers for water was intended to prevent water wastage and generate modest cost recovery (35%), eventually leading to full cost recovery (World Bank, 2001). In short, commercialization was underway in the project area (Bakker, 2007).

Our Water was the first project in Rajasthan to ask villagers to pay for water and maintain its infrastructure inside village boundaries. At the outset of the project, a non-governmental organization we call the Project Social Side (PSS; a pseudonym) was formed to generate community participation. It also served as the primary link between villagers and the GOR. The PSS encouraged villagers to think of the water supply project as their own (hence the name, Our Water). PSS fieldworkers aimed to teach villagers to consider themselves as paying customers who had a right to demand a 24-h clean water supply at public taps (O'Reilly, 2006a). PSS fieldworkers also established structures for community participation through village water committees (VWCs), self-help groups (i.e., income generation groups; see Hall and Lobina, 2007), and user groups (women's groups organized to keep public taps broom-swept) for the maintenance of village level water infrastructure and bill payment. PSS fieldworkers told villagers that the GOR Public Health Engineering Department (PHED) would maintain the system infrastructure outside village boundaries and effectively respond to villagers' needs.

At the scale of the (Rajasthan) state, the Our Water project followed decentralization ideals that were intended to overcome the

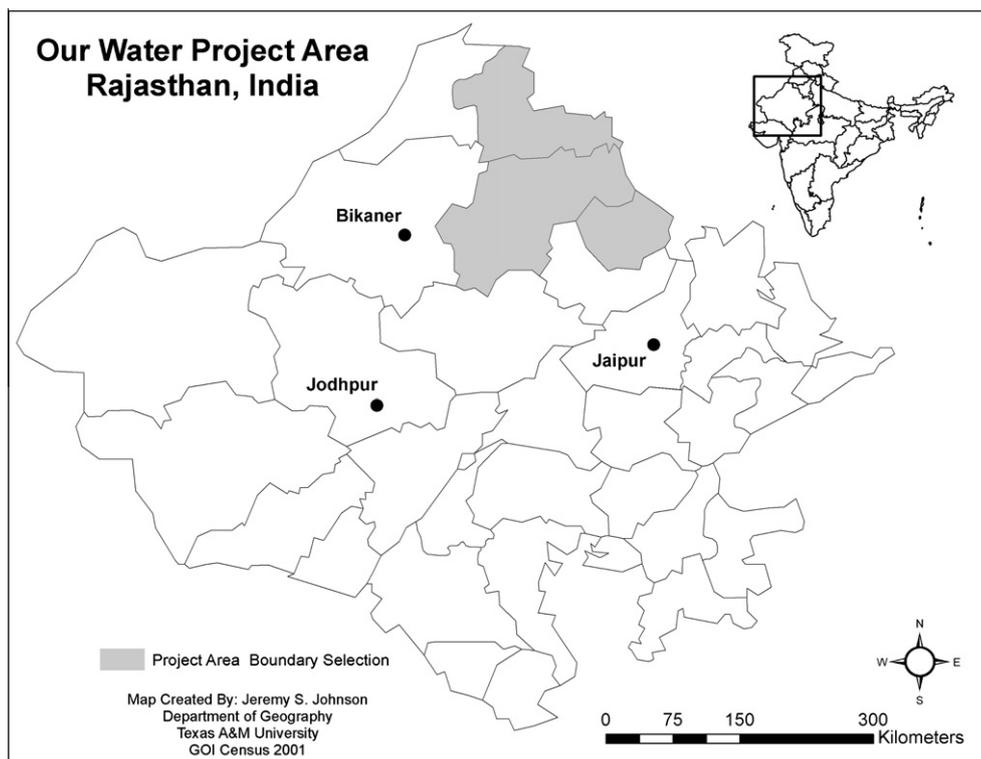


Fig. 1. Our Water project area, Rajasthan, India.

problems of a cumbersome administrative system unable to respond to consumer demands (World Bank, 2001). Our Water designers planned to change the working culture of the Rajasthan PHED through a smaller unit of PHED engineers based in the project area, which was at a distance from the PHED command structure in Jaipur, the state capital. The smaller PHED unit was created to weaken the centralized administrative structure of the PHED. Pumping station operators (PHED engineers) were considered 'first responders' to fault reports by village water committees (VWCs), who in turn, were expected and empowered to report village-scale system problems to PHED engineers in the project office. However, by the late 1990s, at least one German consultant (German consultant, personal communication) doubted this new way of working was taking hold, but was hopeful that changes to the status quo in the operation, administration, and procedures of the PHED in Jaipur would allow the smaller project unit greater freedom to respond to citizens as consumers, not beneficiaries.

Initially, the GOR PHED operated and managed the Our Water drinking water supply infrastructure, but eventually it began contracting out water quality treatment and plant operation to private companies. These private sector operators were based out of the area (New Delhi), but hired some local labor. Contractors supervised their own staff and were in turn supervised by PHED engineers. In December 2005, construction was completed and PSS was disbanded. Although the project is reported to be a success (Our Water, 2011) and is already being copied, until this research, no independent, systematic analysis of water supply conditions at the village level was undertaken.

Over a period of 6 weeks we visited at least one village in each of the 37 project subdivisions for a total of 47 villages. Villages were selected based on size (from approx. 300 households to 2000 households) and position in the supply pipeline (e.g., at the tail-end of the pipeline where water pressure at public taps might be least, or close to a pumping station where pressure might be greatest). Residents of each neighborhood served by a public tap were questioned in focus groups or individually about water

preferences, perceptions of water quality, water supply service, payment and maintenance practices, GOR-citizen relations, and local social changes (e.g., caste-based public tap usage). We conducted semi-structured interviews with 58 individuals across caste groups and gender, 55 mixed-group (gender- and caste-wise) and 23 women's only focus group discussions. Informants were chosen randomly in each village, but in every village we spoke to women, lower caste individuals, and water committee members (sometimes these characteristics overlapped in a single individual). Data were recorded, transcribed and translated from Marwari or Hindi to English by the authors. We demonstrated and taught villagers about water quality testing at public taps using a water testing kit developed for field-based use (see results in Table 1).<sup>2</sup> Multiple meetings were held with four GOR PHED officials/engineers at the project headquarters in order to ascertain rates of payment, regularity of supply, future plans, and levels of support for village level institutions. Despite extreme temperatures in the summer (up to 47 °C), the research was purposely conducted from May–July when water supply problems might be at their peak. Although there are always obstacles to overcome in obtaining good data, many of the interviews and focus groups took place where Kathleen is known, and we believe that familiarity allowed for relatively open exchanges. We are sure that in some cases villagers complained about drinking water because we appeared to them as able to fix problems. We took this into consideration when we coded, and believe that the number of interviews and focus groups provided corroboration and scope for the full range of comments used in this paper.

Below we discuss previous scholarship on water resource governance that offers an analytical framework for our own investigation. We also look to recent research on community participation in order to put these findings to work toward understanding the role that post-project community participation played in the maintenance of contaminated water delivery. These two bodies of

<sup>2</sup> We tested for presence of residual chlorine, fecal coliform bacteria, nitrate, chloride, ammonia, and phosphorus.

**Table 1**  
Water testing results.

Parameters	n = 47
Villages visited receiving water	43
Villages where water testing possible	33
Villages positive for fecal coliform bacteria	17
Villages negative for residual chlorine <sup>a</sup>	32

<sup>a</sup> One single village, tested on the last day of our fieldwork and after our meetings with the PHED engineers about our testing results, showed residual chlorine at 2.0 mg/l, the standard. We suspect we found ample residual chlorine due to our meetings with the engineers.

research provide an optic that frames the political economy of drinking water supply and the choices of villagers in the post-project phase—both of which combined to support a pre-project status quo of contaminated water provision.

### 3. Hybrid governance in the post-project phase: community participation and neoliberal re-regulation

Neoliberalization processes for resource governance encompass a variety of types of reform in the water sector including: devolution (e.g., from state run drinking water supply maintenance to citizen responsibility); democratization (e.g., community participation in decision making); privatization (e.g., from public to privately held water supplies); and marketization (e.g., payment for water to discourage misuse; see Bakker, 2007; Castree, 2006; Harris, 2009; Jessop, 2002). Much recent work has gone deeply into forms and practices of governance while simultaneously detailing social dynamics and the physical properties of water that enable neoliberalization processes to take hold or to be resisted (Ekers and Loftus, 2008; Page, 2003; Prudham, 2004). The current paper seeks to build on this research by looking for patterns and differences across research from a similar context (e.g., Rajasthan) and/or examining the same resource (i.e., drinking water) in an effort to nuance our understanding of neoliberalization as a range of strategies with variable effects (Bakker, 2010).

Loftus (2006) explored the development of a technical infrastructure to regulate water consumption in poor households in Durban, South Africa that was part of a broader process of commercialization of the city's water supply. Loftus showed that the application of technology started a process by which some citizen's consented and participated in their own water deprivation, while others questioned the new tariff system and attempted to gain access to genuinely free water. Similar effects of consent and resistance, but with clear caste divisions, were produced during a Rajasthan groundwater conservation campaign in 2006 (Birkenholtz, 2009). Upper caste farmers supported government conservation efforts because they realized to do so was in their interests; lower caste groups realized the opposite, and resisted them, with violent results. The hierarchical structure for water management that the GOR established served not to decentralize decision making, but to consolidate the interests of the state and local elites. Loftus (2006) and Birkenholtz's (2009) cases illustrate a process of producing both consent and resistance to re-regulation. The current paper finds parallel responses in people's everyday adaptations to water's re-regulation. However, it also argues that villagers themselves enacted further formal re-regulation of water supply.

In Prudham's (2004) case of drinking water supply contamination in Walkerton, Ontario, neoliberal reforms led to a reduction in provincial funding for operation and maintenance costs of the drinking water supply system infrastructure forcing the state to rely on the cheaper private sector for drinking water treatment. The terms de-regulation and re-regulation have been used by Peck and Tickell (2002) and Castree (2008a) in the following ways:

de-regulation—the 'rollback' of the state's involvement in social and environmental regulation; and re-regulation—the 'rollout' of the state's involvement in facilitating privatization and marketization across social life and environmental governance. Prudham (2004, pp. 352–353) defines de-regulation similarly, but he is quite clear that de-regulation goes "hand-in-glove" with administrative re-regulation. We agree with this assessment and use the term re-regulation to include elements of de-regulation. In Canada, simultaneous with the reduction of funding, water quality testing was effectively de-regulated. Lapses in oversight due to re-regulation, what Prudham calls a "normal accident of neoliberalism" (p. 343), were part of a "systemic production of environmental risks" (p. 344) and "organized irresponsibility" (p. 346) on the part of the state and contractors. The result was the provision of contaminated water to the public and the deaths of citizens. Neoliberal re-regulation has embedded within it, Prudham (2004) argues, the probability of system failures leading to spectacular accidents.

Prudham's Canadian case begins in a context where people expected clean water; it was "utterly taken for granted" (p. 344). Water provision was then compromised due to re-regulation, resulting in a normal accident of neoliberalism. Clean water provision is not the baseline in Rajasthan. Neoliberal re-regulation was meant to put this baseline in place. The neoliberalization of drinking water supply was meant to *improve* water quality by delivering the facilities with which to do it (e.g., treatment plants) and charging for water in order to cover nominally the cost of its provision. Our Water was meant to raise villagers' expectations for clean water provision from the government by connecting payment for water with an ability to demand a clean, regular supply.

The fact that there was no existing baseline for clean water provision before the onset of the project indicates an earlier, established pattern of relating between citizens and the state that allowed the state to offer poor quality service without any backlash to itself. Deaths due to waterborne pathogens are common, yet public anger over contaminated water is nearly unheard of. Gupta (2005) calls the ordinary ways that the poor suffer due to malign neglect from the Indian state 'unspectacular suffering,' contrasting it with 'spectacular suffering,' like a major famine.<sup>3</sup> A study of the state should engage with the question of why unspectacular suffering does not garner the attention of politicians (and academics; see Gupta, 2005). Our interest here is to tease out, beyond neoliberalisms' normal accidents, why the unspectacular suffering in Rajasthan due to contaminated water did not garner the attention of those charged with providing it. What relationships between citizens, the state, and non-state actors explain the failure of the state to respond to its own citizens' need for clean water? How did water governance reforms change (or not change) these relationships in ways that enabled the state to remain the unreliable provider it was before the onset of the project?

To answer these questions we analyze the forms and dynamics of community participation shifting over the course of the project. Community participation as designed by project planners was intended to generate a self-regulating, yet accountable, interface between villagers and the GOR. Owing to its undisputed popularity among donor institutions, participation has emerged as a core technology and new ideology for multi-sited, decentralized governance (Cooke and Kothari, 2001). A substantial literature suggests that participatory approaches can empower ordinary people by equalizing power relations during development planning in ways that enable the needs of 'beneficiaries' to be addressed (e.g., Chambers, 1994, 1997; World Bank, 1996, 2000). However, critics argue that participatory approaches fail to engage with issues of

<sup>3</sup> Sen (1999) argues that democracy and a free press have prevented spectacular suffering, but in India, those institutions have not prevented malign neglect of the kind that kills due to the failure of basic needs' provision, e.g., clean water.

power and politics at the local scale in a variety of ways (Kothari, 2001; Mohan, 2001; Williams, 2004). Participatory approaches often imagine that all participants have the power to assert themselves in the ways needed to assure proper project functioning, when in reality, they do not (Corbridge et al., 2005). Criticisms of participation converge on the idea that power at the microscale is little understood or engaged, resulting in its failure to enact social change as expected (see Agarwal, 2001; Cornwall, 2002).

In the specific context of water governance, Cleaver (2001) states that community participation comes wrapped in the language of empowerment (see also Kamat, 2004), but stakeholders may not be given the tools to manage water, belying community participation's claims of empowerment. Democratization and decentralization of responsibilities often occur without devolution of power (Birkenholtz, 2009; Swyngedouw, 2005) leading citizens to use the institutions and relationships community participation brings to seek new avenues for dealing effectively with the state and its agents (O'Reilly, 2010; Simon, 2009). If devolution of water management should actually shift power to stakeholders, then it does not necessarily follow that stakeholders have the resources or capacity to manage water (Lahiri-Dutt, 2003). Combinations of environmental constraints and social relations of unequal power may come together such that community participation (or resistance to it) ends up reinforcing the very inequalities it meant to undermine (Kesby, 2005; Sultana, 2009).

When participatory approaches do not engage with everyday power dynamics—either among citizens, or between citizens and the state—they become technical routines or simply a discourse applied without commitment to political change (Cleaver, 1999; Fischer, 2006:23). Critics assert that such discourses and practices lead to a depoliticization of development (Cleaver, 2001; Cooke and Kothari, 2001; Ferguson, 1994; Mohan, 2001). We reject arguments of participatory approaches' depoliticizing effects in favor of a reverse look at participation as not simply power imposed or practices depoliticized, but as power generated by the tactics and strategies of participants (Kesby, 2005). Therefore, the absence of resistance to paying for and managing water should not be confused for an absence of politics. The act of altering specifics of community participation is itself political in nature. We demonstrate below that villagers initially accepted their responsibilities under community participation, only later to create their own changes to village scale water governance beyond the original institutions. Thinking of power as productive and of alterations to participatory structures as political acts creates a stronger analytical frame to explain the re-regulation of water governance.

In the empirical section below, we show how ideals of community participation designed by the project gradually received diverse interpretations at the village scale due to water governance reforms at the state scale. We begin by detailing the changes to infrastructure and institutions spawned by neoliberal reforms in water governance, before moving into an ethnographic engagement that highlights the connection between the effects of GOR's efforts at cost recovery and village-level alteration of community participation ideals. We draw on project reports and the voices of villagers, PHED engineers, and contractors to argue that the resulting relationships between citizens, non-state actors, and the state led to a continuation of the status quo of poor quality drinking water, irregularly provided.

#### 4. Cost recovery and the right to clean water

An Our Water report on cost recovery and sustainability produced in 2004 (Our Water: Implementation and Management of User Charges for Water, 2004a) mentions that cost recovery from users was an expected key reform in the drinking water sector,

beginning with a minimum 30% cost recovery and moving toward full cost recovery. However, at the time of the report's writing, the water tariff collected covered only 24% of water's cost—below what had been planned by the German donor bank. Three alternative improvements were suggested: (1) finding alternative financing (including the private sector); (2) reducing operating costs; and (3) revising the water tariff. Only the last is explored further in the report. Two prices proposed for water in 2008 were 8 and 10 rupees per capita per month, if daily use was 40 l (Our Water: Impact and Implications, 2004b). At the time of our fieldwork, water prices had not changed from their original price of a maximum of .16 rupees for 40 l. The Our Water report concluded that in the absence of alternatives, the default position would be that the PHED continue to maintain the project, but likely at the expense of project infrastructure due to insufficient funds. A deteriorating condition of infrastructure was borne out by our field visits.

The same Our Water report concurs with a World Bank discussion paper (2001) on large drinking water supply projects, where it is noted that charging for water below cost results in dependence on government subsidies that, in turn, are insufficient to pay for power bills. When power bills do not get paid, then pumping hours and maintenance are cut back, resulting in bad service and declining infrastructure. The irregularity of water supply was likely the result of insufficient funds for power, but project engineers did not explain lack of funds as the reason for poor service, although they were surely aware that water tariffs were not covering operation and maintenance costs.

In the Our Water project, power (approximately 50%) and salaries (approximately 20%) were the most costly items in the water provision budget. Within a year of the water supply starting in project villages, the PHED contracted out its operations and maintenance responsibilities to private companies that staffed pumping stations and treatment plants. We assume that contractors were hired because they offered the PHED an opportunity to reduce operating costs by enabling the PHED to remove staff salaries (and pensions) from project expenses. They sent staff from their main office in New Delhi, but they also hired local people. These contractors quickly earned a reputation for being inaccessible and inefficient. Rumors abounded in the project area that contractors bid so low and paid such high bribes to government officials to get contracts that insufficient funds remained for treatment chemicals and labor.

A few active village water committees (VWCs) travelled long distances to meet PHED engineers demanding the removal of these contractors. Sanjay<sup>4</sup> from Village #13 reported:

When we complain to the contractor in Mingnapur, he says talk with the Executive Engineer (PHED), who says that we should talk with Mingnapur contractor. In this confusion, no action is ever taken.

Villagers rarely spoke of contractors as available or responsive. From their point of view, contractors blocked their access to PHED engineers or assisted the state in giving villagers the run around.

When we asked about supply during our follow-up fieldwork period, villagers complained most frequently about the irregularity of the supply, coupled with opinions that the government was not responsive to problems. After construction finished and the PSS disbanded, villagers began advocating on their own behalf only to find that GOR engineers brushed them off. A VWC leader from Village #2 explained:

Everyone used to believe in the NGOs [PSS]. They were the link between villagers and government. But now, when we [VWC

<sup>4</sup> All names used in this paper are pseudonyms.

**Table 2**  
Water availability in villages.

Parameters	n = 47
Acute water shortage: 1–2 h or less	7
Severe water shortage: 1–3 h	17
Medium water shortage: 4–12 h	7
No water shortage: 24 h supply	14

members] go to the government with our water problems, we are told that we are biased [towards our own village].

Village #4 got water for only 1 h a day and occasionally no water for days on end. One of its VWC members told us, “The VWC complained to engineers, ministers, and the District Collector [District administrative head] but these were all one-sided talks! There was no response from the government!” Nonetheless, Village #4 paid its monthly bill on time. During a group discussion in Village #1 that got water only 4 h a day at water pressure so low it took hours to fill *matkaa* (water pot), we were told, “Yes, everyone here pays. In fact, even people living up the hill who barely get any water [due to low pressure] also pay.” Although there was some topographic variation that influenced neighborhood supply, in general, all villagers, regardless of caste or class, received the same erratic supply of contaminated water. Despite irregular supply (see Table 2), all of the 43 sample villages paid their water bills regularly. Respondents in 29 out of the 43 sample villages brought into relation non-payment and water supply cut-off. Although the German donor bank argued against it, the state turned off water supply to non-paying villages, which guaranteed payment in almost every village.

The results of water quality testing in the field indicate that supplied water not only contained no residual chlorine, but almost always contained fecal coliform bacteria.<sup>5</sup> Villagers were aware that the water was dirty, even before they witnessed Our Water testing. Some villagers gave up using project water for drinking purposes and began storing rainwater in their households *kunds* (underground water tanks). Shanti from Village #12 said, “This tap water is like poison. Rainwater is pure.” Kamli, from Village #4 did not have a *kund*. She used the project water for drinking purposes, but not without treating it first. She said

The supply is so unreliable that I started storing project water in *matkaas* [pots]. But that is also a problem because stored water gets worms. So I have to use *phitkari* [alum] to make all that stored water potable.

These women treated stored water as they knew how, but the delivery of contaminated water and water storage under unhygienic conditions were both problems Our Water was intended to solve.

While villagers struggled for clean drinking water, one senior PHED engineer expressed that villagers were not worried about availability and quality of drinking water because, according to him, 90% of them relied on rainwater, not the project water. He said,

People are not concerned that they won't have enough water to drink as they have already taken care of that. They want all the extra [project] water for their animals and for bathing and washing. And that's why people are not interested in the quality of water either.

When we shared Our Water testing results indicating no presence of residual chlorine in all but one village, he seemed surprised

that contractors were not taking care of this responsibility. But he was not surprised when we told him that 17 of our 33 water samples contained fecal coliform bacteria. He said, “That's okay,” and went onto explain that the state and the villagers continued to maintain poor expectations of the project because villagers relied on rainwater for drinking.

Another PHED engineer received the testing results gravely, but denied government responsibility for oversight and instead blamed contractors. He reminded us of the various technologically-advanced treatments that water goes through before reaching villages. He said

We convince the community that this water is not harmful by saying that we also live in the project area so we should also be affected by drinking this water. Only five percent of people carry these rumors around.

In this engineer's view, the government did its best to provide clean water. Then he was quick to add, “It is the contractor's job to check for chlorine and to put chlorine before water is supplied to water tanks.” The shift in responsibilities from PHED engineers to contractors and baseless village rumors explained, according to him, the supply of contaminated water from an otherwise impeccable technical system. Both of these engineers displayed the logic that inured them from the unspectacular suffering of village citizens, but they also highlight what Loftus (2006) makes so clear: the power of technology cannot be separated from the power of social relations. That is, the engineers were aware that project technology did not operate on its own. Relationships between citizens, the state, and contractors formed the foundation of drinking water supply and governance.

A contractor employee, an assistant manager, explained the lack of residual chlorine at his treatment plant this way:

All they [villagers] need is clean water. They don't want a chlorinated taste. We never put more than .25 [mg/l] residual chlorine.

This treatment plant's lab results showed regular water testing at 2.0 mg/l, the standard for drinking water, but according to this assistant manager, they did not actually put that much because villagers did not like the taste. The day we tested at the plant, our own testing showed <2 mg/l residual chlorine, but the plant's log-book showed 2.0 mg/l. Carrying out water testing enabled us to confirm villagers' suspicions that water was improperly treated, but it also enabled us to learn that water quality, even when known to be poor, was not a factor that galvanized villagers to resist payment or approach the government in any mass movement except in one well-known incident.

Stories of a positive government response to contaminated water supply were rare, but one such story stands out from our fieldwork because we heard it repeatedly across project villages. The story consisted of villagers finding a dead dog in a water tank. Since one tank serves several villages, news traveled fast and resulted in VWC leaders calling for an emergency meeting with the District Collector and PHED engineers in a forum known as *paani panchayat* [water government]. We had heard that these monthly meetings were generally not well-attended by either side (VWCs or government officials), but the dead dog incident generated enough anger to produce mass attendance at this particular meeting. Villagers reported that they brought with them photographs of the dead dog in the tank and bottles containing dirty water as evidence of water contamination. The VWC leaders demanded the regular cleaning of all water tanks. The ‘dead dog’ tank was cleaned, and the story was told to us by villagers as both an account of egregious government behavior and of the collective power of villagers to force a proper response.

<sup>5</sup> Unavailability of water made it impossible to conduct water tests in all 43 villages visited. Thirty-three villages were tested.

A few years later, a VWC leader from Village #2 complained to the government about poor maintenance of the water infrastructure without results. The leader, Sher Singh, based his claim on his rights as a paying customer. He said, “*Hamaaraa haq hai kii panii ke paise dete hain to saaf aur puraa paani milnaa chaahiye.* [It is our right to get clean water if we pay for water.]” He went on:

I first told the executive engineer about the dirty tank. But when he refused to do anything about it, I decided to do it myself along with others. The engineer said to me, “We will not do anything; do what you want to.” And so I did!

Sher Singh took upon the government's responsibility for oversight as his own by organizing the cleaning of a dirty water tank with village volunteers. His behavior is one among many examples when an individual's labor substituted for that of the state. But for other villagers and VWCs, the inertia of the PHED was their cue to remain inactive in water supply governance and sustainability. In Village #3, a young man recounted that “. . . after PSS fieldworkers left the project, the VWC worked well for the first 2 years but its functioning deteriorated after that.” VWCs had the responsibilities of managing the system inside village boundaries, including: listening to complaints, complaining to engineers about poor supply, collecting bills, maintaining records, depositing payment, attending meetings, managing savings, and replacing broken taps.

An elderly VWC leader in Village #9 told us, “VWC members are overworked and disappointed because we do the government's work but don't even get any salary for it!” These same thoughts were repeated by VWC leaders across several villages, including Village #10s VWC leader, Ram Verma, who said,

Villagers blame me for the poor supply and I tell them, “I am doing social work. I am not getting paid [as a VWC leader]. So if you want, go ahead and choose someone else to take care of your water.”

The PSS specified that VWC work was unpaid in the start-up phase of the project, but many expected to profit from their role on the committee. As Laxman in Village #11 reported:

When the project started, everyone wanted to be in the VWC because they thought they will get some commission. But no one wants this job now. A government man came on motorcycle the other day with forms [paperwork] to elect a new VWC. But no one came forward.

The work burden led VWC members in at least 25 study villages to refuse to perform their duties or to reduce their duties (see Table 3). To fill the gap, villagers contracted a monthly payment collector who either (1) bid for the lowest salary or (2) bid for the lowest flat rate that villagers would pay year-round irrespective of the fluctuation in the monthly bill. Payment collectors collected monthly payments from each family, and in most cases, also acted to control water access and wastage in various ways. VWCs in eighteen villages continued as before despite the work burden, collecting payments and maintaining infrastructure, while also devising ways to reduce the water bill.

In nine villages where VWCs had completely stopped functioning, some villagers stepped in and volunteered, but more often a salaried payment collector was hired. Salaried payment collectors

had no incentive in maintaining the water infrastructure to reduce water leaks and wastage in order to reduce monthly water bills. Taking a different approach, seven villages from our study group where the VWCs were functional, agreed to pay a fixed price for water each month to a contracted payment collector, independent of the meter reading. In Village #12, the VWC faced 50 non-paying families due to exorbitant bills. Bimla told us, “Now that bill collection is contracted out, bills are reduced from 7–11 rupees to 5 rupees per person and all are made to pay.” Further, to cut costs, VWC rationed the water supply to 2–3 h per day. The fixed price payment collectors had a keen interest in increasing their profits by reducing the village monthly water bill at the meter through wastage deterrents, usually by shutting off water at low-use times, e.g., at night or during hot summer afternoons.<sup>6</sup> Relieved of this onerous duty, the VWCs worked to replace leaking taps; we suspect they did so in order to maintain some form of authority over the village water supply. In both scenarios discussed here, the payment collectors focused on paying monthly bills on time to the PHED, but played no role in demanding high quality water from the state. Villagers also effectively paid more for water, since they either paid the collector's monthly salary (between 1000 and 2000 rupees) or a fixed rate set higher than the PHED's water tariff. The higher tariff was acceptable because household bills were often less than before the fixed rate; payment collectors' and VWCs' wastage deterrents lowered the overall monthly bill for the village.

In the 18 villages where VWCs remained functional and collected payments, they altered the village's water infrastructure to reduce the water bills for the village. For example, in some villages, one of the two taps at public standposts was removed to slow water consumption (by increasing waiting times for water) and reduce by half the number of potential leaks at public standposts. In other villages, VWCs allowed women to fill water pots only during certain morning or evening hours.

The data and quotes above provide a short narrative of the interplay between project actors, regulatory reforms, and the post-project changes that they inspired. In the section below, we discuss how ongoing de-regulation and re-regulation at the state and village scales supported the continuing provision of contaminated water in Rajasthan.

## 5. Citizens respond to an unresponsive state

Prudham (2004) made plain that neoliberal accidents such as contaminated drinking water are ‘normal’ due to funding reductions. This northern Rajasthani case then, provides a ‘natural experiment’ for a contrasting analysis of how local populations coped with an ongoing neoliberal accident, since the state acted with inadequate funding for safe drinking water supply from the project's beginning. Although the project specifically connected villagers paying for water and an ability to demand proper service, water tariffs were never enough to enable the PHED to provide it (see also Birkenholtz, 2010). The state's responsibility as welfare provider was in conflict with its responsibility as clean water provider. Forced to choose, the state continued to subsidize water's provision at the expense of providing a 24-h supply of clean water. Locally-based engineers, contractors and citizens were left to sort out for themselves how to manage.

Although Sher Singh and many others connected paying for water with a right to receive clean water, the ‘dead dog’ story serves to highlight how much it took to galvanize VWCs into protesting the state's laxness in providing dirty water. In contrast to the Rajasthani violent protests due to their lack of irrigation water

**Table 3**  
Village water governance.

Parameters	<i>n</i> = 47
Villages with functional VWCs	18
Villages with semi-functional VWCs and payment collectors	7
Villages with dysfunctional VWCs and payment collectors	9
Villages with dysfunctional VWCs and no payment collectors	9

<sup>6</sup> People sleep off the hottest part of summer afternoons, reserving activity for cooler hours.

discussed in Birkenholtz (2009), the supply was regular enough to prevent mass protest. Individual people did not generally complain to VWCs about poor water quality, and those who did complain gave up due to a lack of positive response from government officials. The PHED engineer quoted in the section above was correct that some villages were not especially concerned with water quality, if quantity needs were satisfied. Fourteen out of 47 villages received a constant water supply, most of the others received an intermittent but daily supply (see Table 2). Villages with poor supply complained about supply, but when we asked those with a satisfactory supply if they complained about dirty water, one resident said, “No one complains here because everyone is busy in their own lives.” Our testing concluded that contractors supplied contaminated water, and villagers told us that they did complain about it, but eventually they gave up approaching contractors that they believed paid bribes to PHED officials to get contracts.

A critical analysis of the political economy of the Our Water supply shows community participation, as originally designed, playing an efficiency role in enabling cost savings (Cleaver, 2001). Hall and Lobina (2007) discuss the non-market mechanisms used by private water supply companies to obtain maximum profits from poor communities. These mechanisms include “community organizations, voluntary labour [for construction, maintenance, and payment collection], collective provision of materials...” (Hall and Lobina, 2007, p. 777). Although they discuss private companies' practices, the similarities with the Our Water plans for community participation are striking. The multiple responsibilities of VWCs can easily be understood as non-market mechanisms minimizing the PHED's cost of provision. Non-market mechanisms were an introduction to water's planned, future commercialization.

However, in the post-project phase, commercialization did not occur, and non-market mechanisms (e.g., voluntary labor) could not be sustained. Community participation at the village scale then shifted its focus to the regular payment of bills to secure a continuing supply of water, however irregular. Payment collection was not an easy job, as Laxman, a payment collector, from Village #11 says

...collecting money is a pain. I don't want the contract again. It is fifteen days of work, going to every house in the village. But there is a 20 rupees penalty for not paying, so all pay.

If privatization is the enclosure of the commons (Bakker, 2007) or the selling off of the public sector (Jessop, 2002), then the activities of payment collectors may be seen as small scale privatization of the Our Water system. Payment collectors and VWCs privatized the water supply at the village scale by effectively controlling what had been intended to be a public resource.

The control of water by payment collectors was specifically recognized by one project engineer who stated that the system of payment collectors was “not good” because, “Payment collectors are getting salaries. So people are paying a salary in addition to their bill that costs them more.” The engineer argued that hiring payment collectors went against the project rule that water would be available at all times. He left unsaid that the PHED had a contractual relationship with VWCs to manage village systems, and that payment collectors profited at the state's expense by not returning higher water tariffs to the state. What is additionally suggested is that PHED engineers were aware that villagers could pay more through a tariff hike, since they were already paying it. At the time of our field work, the process of water's commercialization involved hybrid neoliberal reforms and continuing state welfare. Just as neoliberal reforms were introduced through the Our Water project with the intent of raising expectations for clean drinking water, it was also expected that water tariffs would increase in order to enable its provision. Citizens were expected to

appeal to the state (in the form of PHED employees) and demand clean water, but they also appear to have influenced the state (in the form of politicians) as citizen-subjects who vote, leading their politicians to lack the will to raise tariffs. Such reasoning leads to the conclusion that citizens received contaminated water because citizens refused to pay for water at rates that would have enabled the state to provide it, but the research shows that villagers were willing, and did, pay more for water. In 2008, the ‘tariff increase’ was the extra paid to collectors for services. Full commercialization of water did not occur (Bakker, 2007), but at the village scale this process was underway, since payment collectors tested the limits of what villagers would pay for water.

The inability of the state to provide water is often used as an opportunity to call for the insertion of a private sector solution. In the case of Jaipur's urban drinking water system, incomplete cost recovery reforms effectively disabled the state's ability to raise water tariffs and thereby improve service and quality (Birkenholtz, 2010). Private sector solutions were called for but were not introduced. Birkenholtz (2010) suggested that despite poor service and quality, if the public sector could set costs or fund infrastructural improvements, the need for the private sector would be thrown into question. In contrast to Birkenholtz's urban Rajasthan case, infrastructural improvements in the Our Water project area were funded by a German development bank, so inadequate funding for improvements to infrastructure was not a deterrent to the provision of clean water in this part of Rajasthan. Private contractors for system operation and maintenance were brought into assist in cost-recovery by reducing costs of water provision while holding tariffs low, but private contractors did not prevent poor quality and quantity of water supply. In fact, the insertion of private contractors at the state and village scale worked to further diminish the ability of the state to provide acceptable quality and quantity of water, contrary to the classic neoliberal solution to problems with the state-as-inefficient-provider that recommends alternative provision by the private sector or civil society (McCarthy, 2005).

Corbridge et al. (2005) suggested that Indian citizens need alternative sources from which to receive basic services, and decentralized institutions so the state can be held accountable. However, community participation approaches do not necessarily build the capacity of individuals or village scale institutions in ways that enable them to exercise power in relation to the state (Corbridge et al., 2005). This research suggests that the PHED never intended to devolve power of this kind through community participation, and when citizens realized this, they used the power devolved to them through community participation to enact further reforms. As long as the PHED had absolute control of water supply, and villagers had few alternatives, VWCs could not enforce clean water's provision or supply timings by refusing to pay their bills. So they responded by privatizing payment collection in order to reduce bills and their own free labor. Although villagers did not exercise power directly to challenge the state, privatization at the village scale indirectly impacted the state by raising water tariffs higher than state rates, but not returning that additional revenue to the state (see also Birkenholtz, 2010).

The work of Birkenholtz (2010) in Jaipur analyses a similar, but urban case, where decentralization without devolution occurred leading city residents to seek out other sources. Those who could afford to sought out private suppliers, including suppliers who further undermined the government supply system by buying the PHED's own water cheaply and selling it for a profit. This paper extends the work of Corbridge et al. (2005) and Birkenholtz (2010) by demonstrating that an absence of alternatives for water supply led citizens to seek alternatives in governance. In the post-project phase, village citizens re-negotiated their participation in drinking water governance, and did it in ways that undermined the state as the primary, and sometimes only, provider. Decentralization of

water supply provision (to a local PHED) and devolution of village control (to VWCs) were two reforms initially insisted on by Our Water planners, but instead of equalizing power relations between the PHED and villagers over drinking water supply, in the context of an absence of an alternative supply and the need by both citizens and the state to reduce costs, water governance reforms were further hybridized through the introduction of private contractors. Popular notions of an unresponsive, irresponsible state were maintained at the village scale, while simultaneously reducing the ability of the state to provide a 24-h supply of clean water.

The Our Water case offers additional support to McCarthy's (2005) suggestion that while it appears that communities provide a counterweight to markets (because they will compensate for the unevenness that markets allow), markets and communities are in fact allied against the state; they appear 'voluntary' when positioned against a 'coercive' state. This framing is useful in the case of Our Water because the state appears coercive by retaining absolute power over water's provision. Salaried payment collectors and village scale water markets appear as choices made in order to cope with an intractable state. However, the lack of an alternative provider led communities to supplement the original investment by assisting in the privatization of water supplies (McCarthy, 2005). We are not arguing that payment collectors got rich on the Our Water infrastructure, or that payment collectors made a significant capital investment in the system, but in all cases where payment collectors were introduced, villagers paid more for drinking water (per liter) and had less control over supply. In the case of salaried payment collectors, the government system was subverted to provide small-scale employment for a local person. The introduction of village scale payment collectors was subtle, but meaningful, because they effectively raised tariffs, disciplined villagers' compliance with payment, and reinforced the status quo of accepting contaminated water.

The message associated with devolution and democratization is that communities will be enabled to solve their own problems. Devolving powers to communities is intended to give them greater control so that they can do a better job managing resources than the state. The problem of an unreliable state was solved in northern Rajasthan through a market solution that was 'independently' reached at the local scale, reinforcing both neoliberal ideals that the state is an unreliable provider/steward and foundational notions of community participation in resource governance as the appropriate solution (McCarthy, 2005). Community participation became a domain where neoliberal goals can be "realized, contested, and reconfigured within specific circumstances" (McCarthy, 2005, p. 997). The story of Our Water is one in which hybrid neoliberal reforms were introduced and later reconfigured at the state and village scales as the impacts of the initial reforms were felt.

## 6. Conclusions

This paper sought to answer the question of how drinking water governance changed in the Our Water project area but the pre-project status quo of contaminated water remained unchanged. The original project design activated hybrid water governance reforms so that the state would become a cost-efficient provider to paid consumers, who would gradually enable the project's full cost recovery. A combination of state welfare, partial commercialization, decentralization, uni-directional devolution of power, and small scale privatization effectively enabled the state to continue charging citizens for contaminated water supply while shifting the costs of village scale maintenance onto individuals. Our paper demonstrates that a hybrid of state, private, and village controls, and market and non-market mechanisms, made it possible for the state to provide water at a low enough cost that citizens would

pay but not protest unresponsive service and poor quality. Citizens' responses in turn, were to rework water governance in ways that further undermined the ability of the state to provide adequate, clean water.

Following Perreault's (2005) suggestion, we traced the shifting scales where decisions were made and discovered that, in the post-project phase, privatization enters the project as a new form of governance, first when contractors were hired by the GOR PHED and again when villagers hired payment collectors. Privatization of the village system occurred when VWCs took advantage of the powers that devolved to them as part of the original scheme—that of managing water inside the village boundaries—and used their authority to turn their responsibilities over to paid payment collectors, who subsequently charged more for water from citizens than the government but returned no revenues to it. The state continued to subsidize the cost of water provision, as did VWCs who continued to maintain the infrastructure inside village boundaries. Villagers paid lower monthly bills in exchange for reduced access at public standposts, while paying a higher price for water because it included the cost of disciplining their own compliance with payment. Based on outcomes, community participation appears as effort to shape community compliance for water payment and maintenance (McCarthy, 2005).

Villagers' words above make it clear that they think of themselves as paying customers of an inferior product, but few challenged the state over issues of clean water and supply timing. We argue that the PHED's ability to turn off supply to non-paying villages and the lack of alternative supplies constrained villagers' choices. The project combined state welfare and non-market mechanisms as the solution to efficient, clean water delivery, and as an introduction to eventual commercialization. We argue that water tariffs were so nominal that they neither enabled the state to recover costs, even via private contractors, nor to alter its relationship with villagers to one of paid, reliable, responsive provider. When full commercialization did not occur, villagers initiated their own governance reforms, but payment collectors in villages had no interest in arguing on behalf of villagers that clean water be provided. Their presence indicated that villagers could pay more for water, but the extra revenue collected did not go to the state and enable proper water treatment. Their hiring resulted in the partial privatization of supply and ongoing hybridization of neoliberal reforms enabled the state to remain unresponsive and to continue to provide contaminated water.

We remain circumspect that full commercialization of state-provided drinking water in Rajasthan would lead to a clean water supply. Our caution is due, in part, to the entrenched historical welfare-provider relationship between the state and citizens in India (Gupta and Sharma, 2006; O'Reilly, 2010), and one that the Our Water project inadvertently reproduced. Corbridge et al. (2005) argued that when all the power of provision lies with the Indian government, it is inevitable that state-poor encounters will be both abusive and inattentive to the needs of the poor as customers of state goods and services. Indian state-citizen relations, which are highly lop-sided in favor of the state, are not likely to be affected if citizens have few alternatives for water. Nor are private contractors more likely to treat water with sufficient chlorine if corrupt officials force contractors to bid so low that they cannot afford to add it, or if on-site engineers are willing to accept bribes to overlook negligence in water treatment. As the paper demonstrates, the justifications for not treating water properly are already in place. While we are sympathetic with villagers refusing to labor for free in exchange for contaminated water, irregularly supplied, we recognize that full commercialization of water would be a hardship for the poor, nor would it necessarily bring an additional devolution of power to the village scale that might challenge the state over water supply.

In contrast to previous scholarship that examines ideals and emplacement of community participation, we traced community participation's evolution in the post-project phase. We argue that it evolved in contradictory ways such that it did not enable paying villagers to make demands of the state, de-activated collective resistance to a poor water supply, reduced water access, and instituted disciplinary measures to produce compliance for payment. It further reasserted the status quo of the state as an unresponsive provider. It produced villagers who disciplined themselves through payment collectors and alterations to village scale water supply infrastructure. Through community participation villagers further hybridized water governance reforms. This paper contributes to community participation scholarship by demonstrating that community participation continues to evolve in response to neoliberal reforms, and does so in ways that are contradictory to project goals (e.g., the state's responsibility as welfare provider in conflict with its role as clean water provider), villagers' own interests (e.g., VWCs do not labor for free, but water access is reduced), and deactivates collective responses to a bad situation. Our research shows that community participation is no more stable in its ideals and practices during implementation than in the post-project phase after implementing NGOs have departed (McKinnon, 2007; O'Reilly, 2007). Community participation sets the parameters for further re-regulation. As neoliberal reforms unfold over time, they create additional regulatory responses at different scales, that in turn, create ongoing regulatory responses. The case of rural Rajasthan water supply shows that water governance reforms do not stagnate, but are in a constant process of regulation and response, as multi-scaled actors re-negotiate their relationships to each other.

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