ARTICLE

Government-civil society co-management contracts for rural water services: lessons from India

Namrata Chindarkara, Yvonne J. Chen and Dennis Wichelns

Lee Kuan Yew School of Public Policy, National University of Singapore, Singapore; Independent International Consultant, Bloomington, Indiana, USA

ABSTRACT

The primary source of water for most residents of India’s nearly 640,000 villages is a handpump that extracts water from a shallow aquifer and is shared by several households. The handpumps require regular maintenance, given that mud, silt, salinity of groundwater, and usage degrade the moving parts over time. The challenge for state water authorities is to keep up with the operation and maintenance (O&M) of numerous handpumps. State water authorities have, therefore, shifted to contracting out the O&M activities to non-state actors including civil society organizations (CSOs) and private contractors. This study compares handpump O&M service outcomes of a co-management contract between the state water authority of Gujarat, India, and a community-based CSO with that of a standard contract between the state water authority and a private (non-CSO) contractor. We find the quality of handpump repair and maintenance in villages served by the CSO contractor to be better than that in villages served by the private contractor. Repair times for handpumps used by lower caste households are significantly lower in CSO-served villages suggesting that engaging CSOs can bring about equity in access to water. We also find that service quality significantly reduces the time spent collecting water thus increasing the overall welfare of rural households. We conclude that innovative contractual relationships such as co-management contracts between states and CSOs can prove to be an effective tool in providing, managing, and expanding public services, and enhancing the welfare of rural households.

ARTICLE HISTORY

Received 2 August 2018
Accepted 23 November 2018

KEYWORDS

Co-management; community-based CSO; water management; natural experiment; developing countries; India

Introduction

Providing adequate access to water in rural communities remains a challenge across much of India. Only 35% of rural households have access to drinking water within their premises. About 43% have access near their premises (within 500 meters) and 22% have access away from their premises (beyond 500 meters) (Census of India,
Several state water authorities in India have endeavored to improve access to water in rural areas by installing large numbers of village handpumps, facilitated by the development of indigenous, low-cost handpump technology (Baumann and Furey, 2013). Handpumps extract water from an aquifer and are typically shared by multiple households within a village. They require regular maintenance, given usage by multiple households, and mud, silt, and the salinity of groundwater which degrades the moving parts over time. Lack of maintenance can cause handpumps to break down forcing rural residents, especially women and children, to collect water from far away sources.

A challenge for state water authorities is to maintain the large number of handpumps owing to their geographical spread and lack of in-house trained labor. This has resulted in an operation and maintenance (O&M) model, in which governments contract out repair and maintenance services to non-state actors such as private contractors and civil society organizations (CSOs) (World Bank, 2016).

In recent years, there has been an emergence of governments contracting with CSOs in both developed and developing countries. In developing countries, in particular, the concern with public service delivery is lack of accountability, lack of incentives to perform, and poor monitoring (Devarajan and Reinikka, 2004). Issues of absenteeism among public services providers such as teachers and health workers, and poorly maintained public infrastructure such as broken water supply and sewerage systems, are therefore common. To overcome these challenges, governments in developing countries have begun to contract out public services such as sanitation, public infrastructure maintenance, healthcare, and social services to CSOs (Smith, 2007). This is a significant policy shift, as CSOs which previously were called upon primarily to remedy government failures, are now seen as competent agents and providers of public services (Bryce, 2006). Examples include contracting of public health services to CSOs in several developing countries including Bangladesh, Cambodia, and India (Bhushan, Keller, and Schwartz 2002; Loevinsohn and Harding, 2005).

As governments increasingly rely on non-state actors to provide public services and achieve public policy goals, hybrid models of contracts are evolving, especially so in the domains of environment and sustainable development policy (Steurer, 2013). Co-management is one such hybrid model in which government and civil society actors aim to achieve common objectives, supply public services jointly, or manage common pool resources through formal contracts or agreements (Steurer, 2013). Hybridization comes from the fact that while there are hard and soft regulations such as formal legal contract and public procurement, there are also features of collaboration, partnership, and sharing of domain-specific resources to achieve a common goal (Steurer, 2013).

Co-management, as an alternative arrangement in public service delivery, is defined as a collaborative arrangement between the government and civil society sector to produce and deliver public service together. In this arrangement, CSOs are mandated with the production of public services in partnership with public organizations (Brandsen and Hout, 2006; Brandsen and Pestoff, 2006). Co-management goes beyond mere legal arrangements of power sharing between the state and civil society actors and involves mapping of essential management tasks and problems to be
solved and capacity-building of the beneficiaries or local communities for enhancing their problem-solving skills (Carlsson and Berkes, 2005).

Whether state–non-state co-management contracts are indeed effective in the rural water supply sector is the focus of this study. This study compares handpump O&M service outcomes of a co-management contract between the state water authority of Gujarat (a state in India) and a community-based CSO with that of a standard contract between the state water authority and a private (non-CSO) contractor. Our study, setting is unique where contracts are awarded to CSOs and private contractors (non-CSO) through a competitive tendering process. Findings from our analysis offer important lessons for state water authorities as well as public managers in how contracts for public service delivery need to be designed and implemented to benefit both end-users and service providers.

**Determinants of the effectiveness of co-management contracts**

Literature underscores a few essential constituents of effective co-management contracts. One of the key determinants of the effectiveness of co-management contracts is institutional capacity (Howlett and Ramesh, 2017). Levels of capacity include analytical or technical competence, managerial competence, and political competence. Technical capacity refers to concrete skills to be able to conduct the task at hand or solve the assigned problem. Managerial capacity comprises of leadership, coordination, staffing, funding, and so on within the organization. And political capacity involves understanding the needs of the beneficiaries being served as well as other stakeholders, and ability to build trust and legitimacy. Success of co-management would likely depend on ways in which actors involved in the governance relationship either complement or supplement these capacities.

Two other determinants of the effectiveness of government-CSO contractual relationships are—mutuality and organization identity (Brinkerhoff, 2002). Mutuality refers to interdependence between partners and entails commitment to shared goals and objectives. Organizational identity refers to the distinctive and enduring features of the partnering organizations. Brinkerhoff (2002) argued that for government-CSO relationships to succeed, organizational identity needs to be maintained and not surrendered over the duration of the contract. This implies that the mission and core values of an organization remain consistent, and its comparative sectoral advantages are sustained.

In a co-management relationship, one would expect there to be a high degree of both mutuality and organizational identity, similar to what Brinkerhoff (2002) termed as a “partnership.” Governments and CSOs have closely aligned and converging goals of public service delivery, which minimizes agency problems and consequently better serves public interests (Bryce, 2006; Slyke, 2006; Witesman and Fernandez, 2013). CSOs tend to have better knowledge of needs and priorities of the communities they serve (Khanom, 2012; Siddiqi and Oever, 1998) and can, therefore, bring about equity and accountability in providing services to the community, whereas also increasing participation and empowerment of community members (Brinkerhoff, 2002). As CSOs typically serve at the grassroots-level, they are also instrumental in
resolving the last mile problem and ensuring that public programs and services are accessible to all (Khanom, 2012).

The co-management setting: O&M of village water handpumps in rural Gujarat

The primary focus of our study is to examine the effectiveness of government-CSO co-management contracts by drawing upon the case of rural water supply in the Indian state of Gujarat. In this section, we delve into the characteristics of the contract between the state water authority of Gujarat and a CSO to make the argument that it exhibits the features of a co-management contract.

In the arid and semi-arid regions of Gujarat, surface water is scarce and households largely depend on groundwater. Access is achieved mainly through community handpumps, as most households in the district do not have piped water connections. Recognizing the importance of handpumps, the Gujarat Water Supply and Sewerage Board (GWSSB) has installed nearly 10,000 handpumps across the state to improve village water access (Panda, 2005). The handpumps require regular maintenance as the mechanical parts deteriorate over time due to salinity and foreign particles, and also because they are shared by several households. Therefore, even with the installation of more handpumps, access to water can be unreliable if they are not serviced on a regular basis. It is administratively difficult for GWSSB to monitor and conduct handpump maintenance across the state. Thus, it invites tenders and contracts out the maintenance work on an annual basis.

Our study area is the Sabarkantha district (sub-administrative region of a state). Contracts are awarded for each sub-district (sub-administrative region of a district) in Sabarkantha, such that within the larger district (Sabarkantha) several different contractors may be engaged (one contractor in each sub-district). A single contractor may or may not be awarded contracts for different sub-districts.

The Self-Employed Women’s Association (SEWA), a trade union of self-employed women established in 1972, has about 600,000 members in the state of Gujarat. It runs the “Women, Water, and Work Campaign,” whose mission is to provide rightful access to clean drinking water to every rural household. To achieve this, SEWA mobilizes and trains its women members to repair village water handpumps as a way to create an income-generating opportunity for them and also to improve the quality of maintenance service. In the Sabarkantha district, our study setting, SEWA has been training women to repair handpumps since 1999. To bid for GWSSB tenders, SEWA established a trust called “Khedut Mandal” (Farmers’ Association) in which all the repairwomen have a direct stake.

Mutuality between GWSSB and SEWA was affirmed by the shared common goal of providing access to clean drinking water to rural households. GWSSB’s need to decentralize maintenance of handpumps and SEWA’s unique organizational identity, mission and capacity converged in late-1999 when SEWA won its first contract in two sub-districts of Sabarkantha—Bayad and Dhansura. The GWSSB-SEWA relationship went beyond mere contractual arrangements of delegating O&M tasks. Both organizations leveraged their domain-specific resources and capacities to complement
each other. SEWA repairwomen initially lacked the technical training to bid for the
tenders. However, the organization’s strengths and capacities lay in coordinating
efforts at various levels including at the very grassroots level and conducting dia-
logues and negotiations with the state government and water authority. Through
these, SEWA was able to convince GWSSB that women can be capable technicians if
provided adequate training. SEWA also utilized its managerial and political capacity
to hold regular dialogues with GWSSB to make the needs of the community known
to decision-makers (Panda, 2005). On the other hand, GWSSB’s capabilities were in
setting standards for O&M and building capacity. It assisted SEWA in conducting the
training sessions and ensuring that its repair and maintenance standards were met.3
GWSSB thus invested substantial resources into capacity-building of SEWA repair-
women, which enabled them to bid for the tenders and also successfully
secure contracts.

The GWSSB-SEWA relationship was thus an outcome of mutuality, leveraging of
complementary organizational capacities, and SEWA’s strong community-oriented
organizational identity and resembles that of a co-management contract. To our
knowledge, these characteristics are not shared by contracts between GWSSB and pri-
ivate contractors.4

SEWA won contracts to service handpumps in all the villages in the Bayad and
Dhansura sub-districts from 1999 to 2003, except in the year 2000. Since then, how-
ever, SEWA has only won contracts in the Bayad sub-district. The most recent service
contract awarded to SEWA prior to our survey was in September 2013 for Bayad
sub-district.

Study design and findings

The objective of our analysis is to examine whether government-CSO co-management
contracts are more effective in delivering rural water services compared to standard
contracts between governments and non-CSO contractors. Our study design com-
pares O&M outcomes for households and villages serviced under a co-management
contract with those serviced under a standard contract. The contracts were awarded
through a tendering process, which provides us a natural experiment setting to
undertake the comparison.

Every year, GWSSB invites contractors to submit tenders for the handpump O&M
contracts through a secure e-procurement system. Factors that determine whether a
submitted tender is successful are (1) the quoted price and how closely it matches
GWSSB estimates, (2) whether the contractor is willing to bear or share the cost of
incidental and transportation for the repair workers, (3) the value-added services
provided, such as the number of overhauls per handpump (regular maintenance not
connected with breakdowns), and (4) prior service record if any. To prevent contrac-
tors from resorting to backdoor negotiations to get their tenders approved, an annual
audit of contracts is conducted. Auditors have the authority to reject a submitted or
approved tender if they suspect that the process was not fair and transparent. The
process of securing a contract is, therefore, free from structural bias, due to the ten-
dering procedures and monitoring by the auditors.5 The variation in service quality
induced by this tendering process thus provides a unique natural experiment setting to examine the effectiveness of government-CSO co-management on handpump O&M services.

In December 2013, we surveyed community handpump end-users and key informants (village local government officials or public servants such as teachers and health workers) living in two adjacent sub-districts in Sabarkantha, namely Bayad and Dhansura (shown in Figure 1), which were serviced by two different contractors assigned through the tendering process described above.

In that year, the contract in Bayad was given to SEWA. To reiterate, the unique attributes of SEWA are, first, it is a membership-based trade union of self-employed women and India’s largest CSO. Second, it makes access to water, management of water resources, and maintenance of water infrastructure salient through various initiatives under its “water campaign.” And third, the distinguishing feature of SEWA contractors is that its handpump repair team comprises entirely of women members, known locally as “barefoot mechanics.” The contract in Dhansura was given to a private contractor (hereafter referred to as non-SEWA contractor).6

We selected a total of 20 villages—10 SEWA serviced and 10 serviced by non-SEWA contractors. For selecting the end-user households, we first mapped and geocoded all GWSSB handpumps in the selected villages. This was done with the

---

**Figure 1.** Location of the Bayad and Dhansura sub-districts in the western Indian State of Gujarat. Source: Indianetzone (2016)
assistance of the village local government (Panchayat). The selection criterion for end-user households was that they must depend on a GWSSB handpump as their main source of water. We randomly selected 10 households in each village at varying distances from the GWSSB handpumps they mainly use. We excluded households that may have their own private handpumps and therefore did not fall under the GWSSB O&M contract terms. Our total sample thus consisted of 200 households that relied on GWSSB handpumps. We geocoded each household to accurately compute the distance between the household and the GWSSB handpump they mainly used.

In addition to the households, we interviewed two key informants in each village to collect village-level data and information describing the overall quality of O&M services. These key informants were either Panchayat officials or public servants such as teachers and health workers living and working in the village. We also collected qualitative data on 15 SEWA repairwomen asking them about their motivations to pursue handpump repair work.

Our survey collected detailed evidence on the quality of handpump repair services delivered by SEWA-trained contractors and their private counterparts in neighboring villages. Using appropriate statistical techniques, we examined the effectiveness of the GWSSB-SEWA co-management contract based on (1) the reported frequency of pump breakdowns, (2) the time taken to fix a pump once it breaks down, and (3) the average time spent collecting water in both the dry and wet seasons.

For our study setting to qualify as a natural experiment, there should be no systematic differences between SEWA-serviced and non-SEWA serviced areas. To confirm this, we compared difference in means across key individual, household, and village characteristics between SEWA-serviced and non-SEWA serviced households/villages using our household and key informant survey data. These included individual characteristics: age, gender, and education of the person most responsible for collecting water for the household; household characteristics: caste of household head, number of household members <17 years of age, farm income, assets owned, availability of alternative water sources, distance to GWSSB handpump, and ownership of electric water pump; and village characteristics: number of households, whether village has access to piped and well water, lowest household income, and average irrigated land size.

Applying statistical tests for comparing two-sample means, we found that, on average, SEWA-serviced households had fewer alternative sources of water, had more dependents, and a higher proportion were from lower castes. However, these differences were statistically significant only at the 10% level. Importantly, we observed no statistically significant difference in the distance to GWSSB handpumps or in any of the other household characteristics between SEWA serviced and non-SEWA serviced households. We observed no statistically significant differences in the average age, education level, and gender of the person most responsible for collecting water for the household. None of the village-level characteristics were observed to be statistically different between SEWA and non-SEWA serviced villages.

Furthermore, we compared sub-district-level geographic, demographic, and socioeconomic characteristics across Bayad (SEWA-serviced) and Dhansura (non-SEWA serviced) using data from the 2011 census and administrative data (Census of India,
2011a, 2011b; Swain, Kalamkar, and Kapadia 2012). We found that the two districts share similar rainfall, temperature, and land gradients, which are important factors determining access to groundwater.\footnote{Average annual rainfall is 838 mm in Bayad and 894 mm in Dhansura. Average annual temperature is about 27 degrees Celsius in both sub-districts. Both sub-districts are on the North Gujarat plain with Bayad at 106 meters above mean sea-level and Dhansura at 129 meters above mean sea-level. Further, both sub-districts are in the North Gujarat Agroclimatic Zone as classified by the Department of Agriculture and Cooperation, Government of India, which implies that they also share similar soils and cropping patterns (Department of Agriculture and Cooperation, 2015).} Most importantly, focus group interviews with villagers and village key informants in the sampled villages suggested no presence of CSO contractors other than SEWA.\footnote{Based on these analyses, we concluded that individual, household, village, and sub-district characteristics across SEWA-serviced and non-SEWA serviced areas were almost identical. We then conducted a regression analysis using data from household and key informant surveys. Our main independent variable was whether the household or village was serviced by SEWA. Outcomes variables used to operationalize effectiveness of O&M services included frequency of pump breakdowns, time taken to fix a pump once it breaks down, and average time spent collecting water in both the dry and wet seasons. We controlled for relevant individual, household, and village characteristics to rule out any bias coming from observed differences. Therefore, any differences in our outcome variables of interest—assessment of service quality and the time spent collecting water—are attributable to differences in O&M services of GWSSB handpumps between SEWA serviced and non-SEWA serviced areas.}

The main findings that emerged from our analysis are:

1. SEWA-serviced households reported a higher probability of having the pump repaired within one week after it is broken. More importantly, handpumps used by lower caste households were likely to be repaired more quickly by SEWA contractors compared to non-SEWA contractors. The result on lower caste households supports the equity argument of engaging community-based CSOs in rural water management and them being more closely aligned with and have better knowledge of needs and priorities of the communities they serve (Khanom, 2012; Siddiqi and Oever, 1998).

2. In SEWA-serviced villages, on average, the person most responsible for collecting water spent 0.3 h less per day collecting water in the dry season and 0.2 h less per day in the wet season taking into account the distance to handpumps. As discussed earlier, the imposed cost of water collection involves distance, the frequency of pump breakdowns, and the time required to obtain repair. When a pump breaks down, households need to seek alternative water sources or resort to a pump that is located further away, which is also a significant cost. Our results indicate that service quality also influences the time spent collecting water. In particular, prompt handpump repair might significantly reduce the average time spent collecting water, in both the dry and wet seasons thus increasing the overall welfare of rural residents.
3. In the qualitative interviews, when asked for reasons why they took up handpump repair work, all 15 SEWA repairwomen cited “service to women and society” as one of the reasons if not the primary reason. This reinforces the mutuality and organizational identity dimensions of the co-management contract. Both GWSSB and SEWA share the common goal of serving the society while the unique motivations of SEWA repairwomen to improve women’s lives underscores the organizational identity dimension of the co-management contract. The results can thus be interpreted as a composite effect of government-CSO co-management contract on handpump repair services including mutuality and organizational identity.

Conclusion

Our analysis compares the handpump O&M service outcomes when the state water authority enters into co-management contracts with a CSO versus when services are contracted out to a private contractor. We find that the CSO contractor, that is SEWA, provides better quality service than the private (non-SEWA) contractor. Specifically, the co-management contract with SEWA significantly reduces time to collect water in both the dry and wet seasons and reduces the time to attend to pump breakdowns, thus further reducing the imposed cost of water collection. In addition, there is a significant reduction in repair time for handpumps used by lower caste households in SEWA serviced villages suggesting that contracting out services to CSOs may indeed bring about equity in access to public goods and services.

Our findings highlight the critical role played by community-based CSOs in improving public service delivery. Clearly, the capacity of the actors involved in the co-management contracts matters. Qualitative evidence suggests that both GWSSB and SEWA recognized their respective strengths and shortcomings and complemented each other. There was mutuality in the outcomes they wanted to achieve and this benefitted the service providers, that is, GWSSB and SEWA as well as the end users. Mutuality thus stands out as a significant determinant of the effectiveness of the co-management contract. Further, SEWA repairwomen were motivated by their unique desire to improve lives of rural women thus highlighting organizational identity as another important dimension of effective co-management contracts with CSOs. Our analysis thus lends empirical support to the three important dimensions—capacity, mutuality, and organizational identity—of effective government-CSO co-management contracts for public service delivery such as O&M of village water handpumps.

From water and rural development policy perspectives, our findings imply that it is not only important to expand water infrastructure to reduce the burden of collecting water on rural households and enhancing welfare but also equally important to ensure that the infrastructure is properly maintained through innovative government-CSO co-management contractual relationships. GWSSB’s efforts to contract out the O&M of village water handpumps to a CSO such as SEWA is a positive step in this direction and could act as a model to follow in providing other public services such as sanitation and waste management in similar contexts.

Our findings also speak more generally to contracting out public services in developing countries. Particularly for services where the goals and objectives of
governments and CSOs are likely to overlap significantly, such as social services, humanitarian assistance, or community development, co-management contracts can prove to be effective. Besides mutuality, governments can a priori identify core capacities that would be needed to achieve the end objectives and make those explicit in the contract terms. In situations where CSOs lack or have weak core capacities, it would be worthwhile for governments to invest in building their capacities as a long-term strategy for more effective public service delivery.

Notes

1. Specifically, the India Mark II and India Mark III handpump designs.
2. The four government-NGO relationship types are: partnerships (high mutuality, high identity), co-optation (high mutuality, low identity), contract (low mutuality, high identity), and extension (low mutuality, low identity) (Brinkerhoff 2002).
3. A typical training session spans over three days and consists of theoretical understanding of the functioning of handpumps and practical sessions where prospective SEWA repairwomen can assist on an actual repair job (Chen and Chindarkar, 2017).
4. Information gathered through interviews with SEWA members and GWSSB officials.
5. Information gathered through interviews with SEWA members and GWSSB officials.
6. Focus group interviews with villagers and village key informants in the sampled villages suggested no presence of CSO contractors other than SEWA.
7. We sampled the key informants by identifying the head of each village Panchayat and then interviewed one additional public servant based on his/her referral.
8. These 15 women consisted the sampling universe of the actively working SEWA technicians at the time of the survey.
9. Groundwater level observation wells are not located in individual sub-districts. Therefore, disaggregated groundwater level data are not available.
10. We could not obtain a list of non-SEWA contractors operating in the two sub-districts. However, in our qualitative information, we find no indication of the presence of NGO contractors other than SEWA.
11. We could not interview non-SEWA handpump repair contractors to corroborate the motivations. However, we posed the same question to other randomly selected women from the same villages as the SEWA contractors. These women were engaged in wage earning activities such as farm labor and non-farm labor (other than handpump repair work). None of them referred to contribution to the larger community as a motivation for taking up wage work.

Acknowledgments

We thank Ms. Reema Nanavaty and Ms. Bharti Bhavsar from the Self-Employed Women’s Association (SEWA) for providing us the opportunity to conduct this research. We thank Dennis Wichelns, Sonia Akter, and seminar audiences at the Lee Kuan Yew School of Public Policy Research Seminar for their helpful comments. We thank Ms. Shilpa Sathe for her excellent research assistance. The findings, interpretations, conclusions, and any errors are entirely those of the authors.

Disclosure statement

No potential conflict of interest was reported by the authors.
**Funding**

We are grateful for the financial support offered by the Lee Kuan Yew School of Public Policy and the Institute of Water Policy at the National University of Singapore.

**Disclaimer**

A longer and more technical version of this study is forthcoming as a book chapter titled “Impact of State—Civil Society Co-management Contracts on Water Supply in Rural India: Evidence from a Natural Experiment”.

**ORCID**

Namrata Chindarkar [http://orcid.org/0000-0002-6401-401X](http://orcid.org/0000-0002-6401-401X)

**References**

Baumann, E., and S. Furey. 2013. *How Three Handpumps Revolutionised Rural Water Supplies: A brief history of the India Mark II/III, Afridev and the Zimbabwe Bush Pump*. St. Gallen, Switzerland: Rural Water Supply Network.

Bhushan, I., S. Keller, and J. B. Schwartz. 2002. “Achieving the Twin Objectives of Efficiency and Equity: Contracting Health Services in Cambodia.” ERD Policy Briefs Series. Manila: Asian Development Bank.

Brandsen, T., and E. V Hout. 2006. “Co-management in Public Service Networks.” *Public Management Review* 8 (4):537–49. doi:10.1080/14719030601022908.

Brandsen, T., and V. Pestoff. 2006. “Co-production, the Third Sector and the Delivery of Public Services.” *Public Management Review* 8 (4):493–501. doi:10.1080/14719030601022874.

Brinkerhoff, J. M. 2002. “Government-Nonprofit Partnership: A Defining Framework.” *Public Administration and Development* 22 (1):19–30. doi:10.1080/pad.203.

Bryce, H. J. 2006. “Nonprofits as Social Capital and Agents in the Public Policy Process: Toward a New Paradigm.” *Nonprofit and Voluntary Sector Quarterly* 35 (2):311–8. doi:10.1177/0899764005283023.

Carlsson, L., and F. Berkes. 2005. “Co-Management: Concepts and Methodological Implications.” *Journal of Environmental Management* 75 (1):65–76. doi:10.1016/j.jenvman.2004.11.008.

Census of India, Government of India. 2011a. Households Classified by Source and Location of Drinking Water.

Census of India, Government of India. 2011b. Sabarkantha District Census Handbook.

Chen, Y. J., and N. Chindarkar. 2017. “The Value of Skills – Raising the Socioeconomic Status of Rural Women in India.” *Development Policy Review* 35:229–61. doi:10.1111/dpr.12207.

Department of Agriculture and Cooperation, Government of India. 2015. (Vol. 2015).

Devarajan, S., and R. Reinikka. 2004. “Making Services Work for Poor People.” In *Service Provision for the Poor Public and Private Sector Cooperation*, edited by G. Kochendörfer-Lucius and B. Pleskovic. Washington, DC: The World Bank.

Howlett, M., and M. Ramesh. 2017. “Achilles’ Heels of Governance: Critical Capacity Deficits and Their Role in Governance Failures.” *Regulation & Governance* 10:301–13. doi:10.1111/rego.12091.

Indianetzone. 2016. Map of Sabarkantha District. Accessed June 30, 2016. [https://www.indianetzone.com/49/sabarkantha_district.htm](https://www.indianetzone.com/49/sabarkantha_district.htm).

Khanom, N. A. 2012. *Partnership for Development: Alternative Approaches to Poverty Alleviation in Bangladesh*. Newcastle upon Tyne: Cambridge Scholars Publishing.
Loevinsohn, B., and A. Harding. 2005. “Buying Results? Contracting for Health Service Delivery in Developing Countries.” Lancet 366 (9486):676–81. doi: 10.1016/S0140-6736(05)67140-1.

Panda, S. M. 2005. “Women’s Collective Action and Sustainable Water Management: Case of SEWA’s Water Campaign in Gujarat, India.” International Research Workshop on Gender and Collective Action. Chiang Mai, Thailand.

Siddiqi, N., and P. V. D. Oever. 1998. Report on Consultative Meeting on Partnerships: Joining Hands with Government and Non-Government Development Organizations and Local Communities. Washington, DC: World Bank Social Development Department.

Slyke, D. M. V. 2006. “Agents or Stewards: Using Theory to Understand the Government-Nonprofit Social Service Contracting Relationship.” Journal of Public Administration Research and Theory 17:157–87.

Smith, S. R. 2007. “NGOs and Contracting.” In The Oxford Handbook of Public Management, edited by L. E. L. Ferlie, Jr. and C. Pollitt. New York: Oxford University Press.

Steurer, R. 2013. “Disentangling Governance: A Synoptic View of Regulation by Government, Business and Civil Society.” Policy Sciences 46 (4):387–410. doi: 10.1007/s11077-013-9177-y.

Swain, M., S. S. Kalamkar, and K. M. Kapadia. 2012. State of Gujarat Agriculture 2011–12. Anand, Gujarat: Agro-Economic Research Centre, Sardar Patel University.

Witesman, E. M., and S. Fernandez. 2013. “Government Contracts with Private Organizations: Are There Differences between Nonprofits and For-Profits?” Nonprofit and Voluntary Sector Quarterly 42 (4):689–715. doi: 10.1177/0899764012442592.

World Bank. 2016. Smallscale Water Projects - Rural and Peri-Urban. Accessed November 25, 2016. https://ppp.worldbank.org/public-private-partnership/ppp-sector/water-sanitation/small-water-providers.