
Managing Rural Water Systems

KEYS TO SUCCESS

*Why are some communities effective at providing safe drinking water, while others fail? **Róger Madrigal-Ballesteró** finds answers in Costa Rica.*

Every 20 seconds, a child dies as a result of poor sanitation. That translates to about 1.5 million deaths a year and doesn't include adults. Those children are the least fortunate of the 894 million people worldwide who don't have access to adequate fresh water and the 2.5 billion people without basic sanitation services. Lack of clean water and sanitation after the 2010 earthquake in Haiti, for example, led to a cholera epidemic that has now infected about half a million people.

In 1990, the United Nations made improved access to water and sanitation an international priority by including it in the Millennium Development Goals. The aim is to halve the number of people without basic water services by 2015. From a policy perspective, one of the major challenges is not just building wells, aqueducts, and drainage systems to serve rural communities. It's creating the local institutions and policies and maintaining those systems and infrastructure over the long term—the critical keys to success.

Understanding the conditions under which communities could organize themselves to manage their drinking water

systems is of paramount importance for water policies around the world. Along with colleagues at the Environment for Development Center for Central America—and with the support of Nobel Laureate Elinor Ostrom at Indiana University—I studied 41 rural Costa Rican villages to learn why some community-based drinking water organizations succeed in providing reliable piped water service, while others do not.

Decentralizing Water Management

In many rural communities around the world, villagers contest the policy prescription that all drinking water systems must be controlled by the central government or private actors. In Central America, a decentralized approach has developed, where approximately 25,000 community-based drinking water organizations are responsible for providing water in rural and peri-urban communities. But not all communities have the capacity to govern their local systems in a decentralized fashion.

From the 1960s to the 1990s, the central government of Costa Rica, with support from large foreign loans, invested significant sums of money to subsidize the construc-

tion of drinking water systems managed by locally appointed water committees. Under these local bodies, some communities have enjoyed great success: water and sanitation systems meet residents' needs, are being maintained and improved, and run smoothly. Others are degrading over time through lack of maintenance, are consistently short on money, and provide water that isn't clean or plentiful.

Determinants of Success

Our research results highlight that high performance of community-based drinking water organizations stems from various factors, such as characteristics of the water infrastructure, local enforcement of a set of working rules, accountability of local water board members to their own communities, and the capacity of local leaders to generate appropriate incentives to involve the community in sustainable solutions for collective-action problems.

The relevance of local accountability mechanisms suggests that in some settings, the most effective body to monitor and sanction (or reward) community-based drinking water organizations is the local community itself, not external actors, such as the central government.

In addition, creating a sense of ownership is key. Communities must be motivated to self-organize and become involved in the design of institutions, construction of infrastructure, and regular maintenance. This demand-driven approach leads to strong incentives for the community to pay the costs necessary to run the systems properly.

Policy Lessons

Our findings have important implications for Costa Rica's water sector and for similar, less-developed countries. The critical deficiencies in community-based drinking water organizations are that they may not

have accountability mechanisms or training requirements for local committee members. Public policies that support this sector must target these shortcomings.

The detection of these weaknesses needs to be systematic. Governments can achieve this by developing technically grounded benchmarking standards and public disclosure mechanisms, and using them to assess the relative achievements of community-based drinking water organizations over time. This approach will spur necessary improvements and increase the trust of consumers in their local providers.

The demand-driven approach demonstrates that community-based drinking water organizations can offer a service that satisfies the local people without financial support from the government. In some circumstances, instead of subsidizing infrastructure, which can create long-term financial dependency, the central government might support local communities by providing information through public disclosure programs and periodic performance assessments.

The experiences of these communities provide important guideposts as to how the United Nations, the World Bank, national governments, and NGOs can best deploy their resources to provide clean water and sanitation to the billions who today are living without them. These outside agencies can work with local communities to ensure that water systems are driven by local demand—but communities must organize themselves to create the institutions that will maintain the systems and enforce the governing rules long after the external actors are gone. ●

FURTHER READING

Madrigal, Róger, Francisco Alpizar, and Achim Schlüter. 2011. Determinants of Performance in Rural Water Community Organizations in Costa Rica. *World Development* 39(9): 1663–75.