This research on groundwater governance in peri-urban areas of Lima considers political, economic and social factors. The research focused on two sites where Community Based Organizations (CBOs) and individuals have direct access to groundwater. The research found that the competing relationships between the stakeholders involved in groundwater governance jeopardizes water security of peri-urban areas and the whole Lima region.

GROUNDWATER GOVERNANCE IN LIMA

Key messages:
- The increase in groundwater extraction over the last two decades for industrial purposes in the Lima region has led to water insecurity for its inhabitants and the possibility of new water diversions/transfers with significant environmental impact.
- Water reforms related to groundwater have affected community based organizations (CBOs), yet have had little impact on private companies. The lack of legal recognition of CBOs affects a large number of water users, both socially and economically.
- Supporting CBOs and individuals who manage groundwater wells for drinking purposes can be key for achieving water security and sustainable water governance in the Lima region, and also suggests an alternative to increasingly centralized management.

RESEARCH BACKGROUND AND CONTEXT

Lima’s urbanization included the expansion of the Service of Drinking Water and Sanitation of Lima (SEDAPAL) drinking-water supply and sanitation network over the past forty years. SEDAPAL described this expansion as a human rights approach because it was aimed to enable water access for the population of Lima while making drinking-water management more technically efficient. One outcome was the closure of numerous wells that had previously been managed by CBOs.

In many communities, this had the effect of separating the population from their water sources. These communities are largely formed by migrants from Peruvian regions of the Andes, whose worldview and water control practices are often reflected in the traditional management of these wells. Through literature review of relevant research on the topic and through interviews with key informants, this research coincides with other studies in the region that found that
such associations and linked management practices fostered social cohesion for these communities of migrants. Thus, it also concludes that the communities’ social capacities and relations are potentially damaged with a transition away from CBOs.

Figure 1 shows the process of centralization of drinking-water supply for the main groundwater extraction locations, represented by dots of different colors and sizes depending on the volume of water extracted in certain areas. The figure illustrates how groundwater governance shifted from independent networks of “conjunctive”/integrated management to a centralized management around the Atarjea, the main water treatment plant and headquarters of SEDAPAL. This evolution had a strong impact on peri-urban territories, especially for people who depend on groundwater management for drinking purposes in the Lima Region, whose “influence areas” have decreased over time.

However, the expansion of SEDAPAL has not affected corporations that extract groundwater for industrial purposes and do not pay for SEDAPAL for this water use. Private enterprises in the industrial sector continuously filed claims in order to avoid paying their water tariffs to SEDAPAL, which caused the National Superintendence of Sanitation Services to release a new tariff structure and management goals in February 2017.

That document aimed to regulate the overexploitation and indiscriminate use of groundwater in Lima which had reached a total of 57.1 million cubic meters of groundwater use in 2016. Figure 2 shows a progressive increase of groundwater intakes which happened during a time with a lack of industrial groundwater regulation.

While industrial groundwater use has progressively increased, the number of community water wells for agricultural production and drinking water has decreased. This points to management of the aquifers based on economic criteria, which differs radically from the official institutional approach, that claims it to be a “strategic reserve” of water for the Lima region, focused on the human right to water and other goals.
RESEARCH APPROACH AND FRAMEWORK

Conceptual Framework: The analysis of groundwater management experiences of different Community Based Organizations (CBOs) used a Socio-Ecological System (SES) Framework and was informed by the influential work of Elinor Ostrom and others. It specifically focused on the role of key actors of peri-urban groundwater governance systems, and their performance in specific situations of water well closures from a social, economic and political perspective.

The study is further supported by discourse analysis of administrative data and archival review of SEDAPAL, and the Autoridad Nacional del Agua (ANA), including 30 semi-structured interviews with key informants (public institutions, community leaders, water system users, social movement leaders and researchers), conducted between May and August 2017.

Research Question: How does the appropriation of groundwater sources and the centralization of groundwater management impact water security in peri-urban areas of Lima?

RESULTS & DISCUSSION

Privatization vs. water security

This study analyses the impact of groundwater management centralization in peri-urban groundwater governance through the analysis of key actors’ performances, claims and contexts in specific cases of CBOs resistance to centralization. It considers their language, relations and procedures within their sociopolitical and ecological context. From the interviews performed in the field, the actors can be grouped in two main groups that display different discourses in their argumentation on how the aquifers should be managed.

On the side of peri-urban civil society, community leaders frequently question decisions made by the authorities and their role in drinking-water supply. Their concerns are related to: a) legitimacy of SEDAPAL to unilaterally control groundwater; b) economic adequacy of water tariffs; c) loss of responsibilities to preserve water sources; d) ecosystem degradation due to intensive extraction of industries and SEDAPAL; e) lack of legal tools to support, formalize and empower existing local water management systems.

Nevertheless, official statements from the main water organizations do not refer explicitly to the loss of control and access to the local population’s water. Rather, water users who want to keep control of their wells argue that they want to do so for water security purposes.
They claim that their governance model has helped to respond efficiently to droughts and to supply water to peri-urban populations who otherwise have little access to drinking water. In the Lurín river basin, the role of many CBOs remains key for the entire Lima region, but community leaders of this area declare feelings of helplessness against the plans of SEDAPAL: to close their community-managed water wells and substitute the current groundwater supply for drinking for a new water transfer from the Rimac basin.

On the institutional side, SEDAPAL and other public institutions proclaim the positive effects of homogenizing the water supply network: it intends to make water and sanitation accessible to the entire population and to ensure the regulation of groundwater use in case of emergency. Through different social and discursive practices to reach peri-urban populations, public water institutions try to put together new forms of social relations and systems of knowledge and meaning based on principles of water security. The difference is that the discourse of the official entities is linked with notions of water management efficiency criteria and human rights, instead of the autonomous access and management of groundwater claimed by CBOs. The asymmetries of powers in this confrontation are manifest, given the fact that most of the CBOs accepted SEDAPAL’s argumentation and chose to close their water wells and connect their livelihoods to the central water and sanitation network.

The study focused then on the CBOs who fought to stick to autonomous groundwater management. They established links with unions such as the Sindicato del Servicio de Agua Potable y Alcantarillado de Lima (SUTESAL) and articulate with them a common discourse that argues that SEDAPAL’s discourse varnishes the ongoing process of privatization of water in the Lima Region. Key informants from these CBOs declare to be in constant adaptation to legal changes but also to natural and social alterations, which they claim to be an evidence of the dispossession of people’s autonomy and freedom to access water resources, gradually appropriated by SEDAPAL. This process diminishes political power of other actors in relation to water management, increasing the vulnerability of the population, especially in peri-urban areas, as they depend on a single system controlled by a single group.

Water and sanitation policies in Lima have been transforming according to paradigms of efficiency and regarding water access as a human right. This research shows that a more fulsome engagement with human rights would need to consider the protection of the rights to the commons, who successfully have been managing water for many years through a socioecological approach and ensuring water security in the region. In this sense, centralized urban and water policies impact peri-urban livelihoods by reducing the potential for social collaboration that residents build from groundwater management.

Water reforms that affect dramatically peri-urban community organizations generate high social costs and jeopardize water security in the region. Hence, the political, social and economic dimension of drinking-water management requires a holistic vision of groundwater governance in the formulation of programs and projects, as well as in its implementation.
REFERENCES