The Influence of Large Mining: Restructuring Water Rights among Rural Communities in Apurimac, Peru

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This article shows that the impacts of mining interventions on communities and their water resources go beyond quality and quantity features; mining profoundly reconfigures customary and formal water control arrangements around, among, and within rural communities. It demonstrates the inherent contradictions that accompany these reconfigurations, many of which happen through processes of formalizing water tenure relations. Although formalization, as a state-endorsed legal instrument, may provide security to some user groups and communities by officially recognizing their uses, it also inevitably introduces new political-normative hierarchies between communities and, at the same time, erodes existing water sharing and management arrangements. The article illustrates these contradictions through an examination of the interactions between communities, the state, and the Las Bambas mining company in Apurimac, Peru. It highlights how new claims to water provoked by the mining company generate tensions with rural communities’ existing water management arrangements, ultimately threatening to make them and the logics upon which they are based disappear. A better understanding and consideration of actually practiced local water arrangements can lead to more respectful policies towards rural communities and help reduce tensions among water users in contexts of mineral extraction.

Key words: water rights, mining, formalization, Las Bambas, Peru

Introduction

Since the 1990s, sizable foreign investment in the mining sector has transformed Peru’s economy, with rising world-market ore prices turning large-scale mining into one of the country’s main economic activities (Hogenboom 2012; Torres 2007). According to the Ministry of Energy and Mining (MEM), the portfolio of mining exploration and expansion counts forty-nine large projects, representing an investment of $58.346 billion. The three regions that host the highest percentage of this investment are Apurimac (33%), Arequipa (16.4%), and Cajamarca (16.2%) (MEM 2016).

Even though mining is a main driver of the national economy, there are major controversies regarding this industry’s social and environmental impacts (see also Bebbington, Humphreys Bebbington, and Bury 2010; Bebbington and Williams 2008). The most tangible impacts that communities near mining operations experience relate to the degeneration and dispossession of water and land—the most crucial resources for community livelihoods (Bebbington 2013; Perreault 2014). Large-scale mining, because of the construction of open pits, requires the moving of huge amounts of soil, while also depending on permanent water flows for its operations (Budds 2010). Open-pit mining is typically located in watershed headwater areas (Bebbington and Williams 2008), which explains why mining interventions alter hydrological flows in terms of quantity and quality (Li 2016; Vela-Almeida et al. 2016). In addition to these profound material modifications of water sources and watercourses, large-scale mining operations also alter water control and governance arrangements, with mining companies often becoming the 

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This article presents a contextualized analysis of the process and implications of formalizing water rights and uses in communities near the Las Bambas mining project and operations, in the Province of Cotabambas, Apurimac, Peru. It explains the reconfiguration of sociomaterial arrangements to use and manage water provoked by mining operations. We show how earlier modes of sharing water are altered through new water management rationalities introduced with the entrance of mining operations. Resulting new institutional arrangements empower and privilege those communities and families who align themselves with the mining company, often at the expense of existing water governance and sharing arrangements. The article demonstrates the contradictions of such reconfigurations and illustrates how their net effect is a dangerous de facto concentration of water management powers in the hands of strong economic and political actors, like mining companies.

Methodology

The analysis is based on field work conducted in Apurimac during 2010 and 2011, with ongoing follow-up in subsequent years (2012-2016). Communities were visited in the Las Bambas mining company’s influence area (Fueraabamba, Pamputa, Huancuique, Choquecca, and Pumamarca) as well as in neighboring zones (Chila and Choaquere). In addition to reviewing literature; archives; and local, national, and international news, the fieldwork consisted of participatory observation, semi-structured and open interviews, participation in community assemblies, and regional forums. Fifty-two interviews were conducted: twenty-four with farmers and communities leaders; thirteen with government officials in Cusco and Apurimac (municipality and regional government, local water authority, and user boards); five with the mining company’s representatives; and ten with researchers, advisors, and NGO representatives. The support of the Bartolomé de Las Casas Andean Studies Centre (CBC), a research partner working in the region for several years, was crucial for the research. Going to the field together with CBC’s representatives helped us approach communities and start the research. Even so, conducting field research in the harsh, remote, and deeply marginalized highland region of Apurimac about the interventions of a multi-million dollar enterprise is inevitably influenced by the strong emotions and opinions that these interventions provoke. Particularly at the start of the research, communities’ attitudes—while being mostly open, warm, and friendly—towards non-local researchers could easily turn into distrust, for example, when a newly appointed community teacher stopped us from entering the school for a meeting that was planned with community leaders. Accusations of being anti-mine spies, or to the contrary of being secret mining agents, as well as questions about the funding sources of the investigation, influenced the atmosphere and contents of the research process. These suspicions and attitudes of distrust underscore the political sensitivity of the research topic. Water and livelihood questions lie at the heart of the strong polarization among and even within families over the rapid social, territorial, and livelihood transformations generated by one of the largest mining projects in the country, with experiences of loss and degradation mingling in complex ways with promises and high expectations of better futures (Sosa Landeo n.d.; Tanaka et al. 2007). Conscious of the stressful ambience, informal meetings at, for example, the Sunday market in Challhuanuacho were particularly important for approaching farmers and community leaders. Also, assisting the farmers when reading the formal documents given to them and collectively trying to understand environmental impact assessments (EIAs) and legalities concerning natural resource management and the mining operations of Las Bambas importantly helped to build confidence. Sosa’s Peruvian (and Andean) background fostered an empathic link with the communities, while at the same time, her affiliation with a foreign university facilitated interactions with interviewees (farmers, state officials, and company representatives); it triggered their curiosity about the research and made them eager to share their experiences.

In the next section, we present our conceptualization of water governance and water rights in smallholder farmer water management, highlighting our understanding of the legal dimensions of water governance processes in Peru. The fourth section presents some basic characteristics of the Apurimac region and the Las Bambas mining company. We use the fifth section to document the water sharing and management arrangements that existed before the arrival of the mining company; also we discuss the process and impacts of formalization, including the tensions it generates. We conclude that the recent formalization of water uses and rights in rural communities near mining operations imposes a new normative hierarchy that privileges the rights of those aligned with the mining company over those opposing it. This provokes frictions and conflicts among and within communities while also irreversibly disrupting existing sharing and management arrangements. Water formalization policies interact with historically and politically grounded notions and practices of water use to produce impacts that are not always easy to predict. In the context of large social, economic, and political inequalities, there is nevertheless a clear risk that formalization will erode existing water logics and governance arrangements. In conclusion, we argue that understanding and considering the important role of local water arrangements can lead to more respectful policies towards rural communities and may help to reduce tensions and conflicts among different water users in contexts of mineral extraction.

Examining Water Governance and the Formalization of Rights

Water Governance and Rights in Contexts of Local Management

“Outside” interventions such as those provoked by mining operations entail re-allocations of water as well as reconfigurations of water sharing and management arrangements.
Documented experiences of how this unfolds in the Andes of Peru show that making waters accessible to new outside actors often happens through the incorporation of these waters into state water governance institutions. This in general occurs with little regard for existing water management practices and arrangements (Lynch 2012; Trawick 2001), in spite of official policy discourses about the importance of recognizing communities’ rights. Indeed, the cultural diversity and epistemological complexity that characterizes existing water governance arrangements in the Andean highlands are inevitably eroded when inserted into one uniform, national framework explicitly aimed at the commensuration of different waters to make their comparison and exchange possible (Roth, Boelens, and Zwarteveen 2005). In actual practice, “recognition” of existing usos (uses) and costumbres (customs) entails aligning these with national-level norms, rules, and laws based on distinct imaginaries of private property (Urteaga 2010). The cultural and political logic of existing arrangements and the history, culture, and sense of place of particular water actors and their multiple values are not considered by national laws (Ingram 2011); recognition happens in the terms and logics of the recognizer, for example, the state (Gelles 2010; Guevara-Gil 2010; Guevara-Gil and Boelens 2010).

As we do not share the a priori belief in the desirability of the commensuration of water values and norms across places, our analysis of water governance and rights in the Peruvian Andes starts with the recognition that ways of dealing with, caring for, and sharing water are always an intimate part of history and territory. Our perspective is anchored in the realization that everyday water use, sharing, and management practices are always local: “Water is tied up with specific place-based ecologies involving community, culture, and identity and can be a symbol for security and self-determination” (Ingram 2011:245). Instead of conceiving water rights as legally ordained state norms, we define them as living social, cultural, economic, and political normative arrangements that are embedded in wider histories and ways of living and being (Lynch 2012; Paerregaard 2013; de Vos, Boelens, and Bustamante 2006; Zwarteveen, Roth, and Boelens 2005). It follows that we understand water rights as historically evolved logics of using, sharing, and caring for water that are embedded in more encompassing cultures of being and relating and part of wider social dynamics and power structures. This does not mean that we see “local” water rights arrangements as autonomous or isolated institutions: they dynamically interact with other normative and (state) legal frameworks to form plural and often hybrid rules, rights, and organizational forms (Boelens 2015).

Water uses, distributions, and the interpretation and implementation of rights inherently imply negotiations and sometimes contestations and conflicts, as different water user groups and sectors have divergent and sometimes opposing needs and interests. Negotiations and conflicts happen over the distribution of the resource but also over the values on which this distribution is or should be based (Ingram 2011; Zwarteveen 2015). The entrance of new claimants always entails a renegotiation of locally specific contents and definitions of “water rights,” or the existing mechanisms to access, distribute, and use water resources and decide about resource management (Guevara-Gil and Boelens 2010). This often results in redefining rules of access and inclusion (Roth, Boelens, and Zwarteveen 2005, 2015; Schlager and Ostrom 1992). In contexts of large economic, social, and political inequalities, such changes will often benefit those actors who are already better placed politically and economically. Existing imbalances among competing uses or perspectives may, as a result, worsen (Ingram 2011).

**Water Management and Formalization of Rights in Peru**

In Peru, the Water Resources Law 29338 that was enacted in 2009 affirms that water is publicly owned and cannot be traded. Legal water access and use is regulated through permits, authorizations, and licenses. The National Water Authority (ANA) is in charge of managing the country’s water resources. At the regional and local levels, Administrative Water Authorities (AAA) and Local Water Authorities (ALA) are the agencies responsible for granting and administering water rights in their respective jurisdictions.

In the case of the Las Bambas mining project, the Local Water Authority in Cusco, ALA Cusco, used to be the agency responsible for granting water and usage rights in the Province of Cotabambas, in the neighboring region of Apurímac. After 2011, this zone came under the jurisdiction of the Pampas Apurímac AAA, more particularly the ALA Medio Apurímac-Pachachaca. In addition to domestic and irrigation uses, this authority also grants permits for mining and industrial uses of water, among others. Permits, like other concessions, are specific for certain sources and uses. Before granting permits, the ALA/AAA is obliged to verify that sources are not in dispute and that granting rights will not deprive other users of water.

An important and noteworthy feature of the 23389 law is its explicit mention of respect for rural or indigenous communities’ customary water management uses and rights. The law thus recognizes communities’ rights to use water running through their land and water originating in the watersheds where their territories are located. This recognition happens through the formal incorporation of existing uses in national registers. The Water Resources Law establishes administrative obligations for formalizing these water uses, a process which starts with an application addressed to the Local Water Administrator. This application has to include land titles, cadastral and location maps, a register of the users, and a description of the villages where water is going to be used. In addition, the application needs to include a technical water study, which consists of a hydrological justification, planning and design, volumetric flow measurements, water demand assessments, and project components (e.g., reservoirs, distribution network), as well as a budget for the costs of field inspections and administrative resolutions.
The study has to be signed by a certified engineer, as rural communities are not considered sufficiently capable to carry it out by themselves.

The formalization of water rights, which is actively promoted through the National Program for Formalizing Water Use Rights (PROFODUA) (see MINAG 2009), is part of a larger attempt to modernize the Peruvian water sector. The government received sizable funding from the Inter-American Development Bank and the World Bank (Lynch 2012) to support the process, with the objective of standardizing water rights and “promoting a modern water culture among the people.” Through PROFODUA, as Boelens and Seemann (2014) show, the Peruvian government and the banks adopted an approach to water rights following supposedly universal economic, legal, and scientific rules (MINAG 2009; World Bank 2012). The idea behind this is that the formalization of local communities’ water rights will increase water security. Beyond just protecting customary rights systems, formalization will theoretically also provide the poor with the means to become richer: by making exchange and transfer of waters and water rights possible, formalization allows the poor to capitalize on their water assets. The work of the United Nations Commission on the Legal Empowerment of the Poor (CLEP) was a major source of inspiration for this line of thinking. Established in 2005 as the “first global initiative to focus on the link between exclusion, poverty, and the Law,” it explicitly aimed for, as its working title expresses, “making the Law work for everyone” (UNDP 2008:1). In the Commission’s view, formalizing local and customary rights “transforms security and opportunity from the privilege of the few to the reality of all” (UNDP 2008:22). In CLEP’s reasoning, formalizing tenure security is a prerequisite for the fight against poverty. In addition to increasing investments and the incentives to protect resources, formalizing property rights also provides clarity over intangible local, extralegal rights, which in turn will lead to a reduction in resource conflicts among farmers (De Soto 2000, 2002). “[F]ormal property is more than a system for titling, recording, and mapping assets—it is an instrument of thought, representing assets in such a way that people’s minds can work on them to generate surplus value. That is why formal property must be universally accessible: to bring everyone into one social contract where they can cooperate to raise society’s productivity” (De Soto 2002:355).

These ideas that inspired the Peruvian water policy reforms are rooted in liberal individualism (Roa-García 2014) and guided by notions of rational choice. They are anchored in the possibility and desirability of uniform rules and rights in the sovereign authority of the State (Achterhuis, Boelens, and Zwarteveen 2010; Roth, Boelens, and Zwarteveen 2005, 2015). Viewed through the lens of a liberal uniform rights’ system, existing communal use and allocation practices, authorities, and management modes (Boelens and Seemann 2014; Seemann 2016) come to appear as remnants of a non-desirable, heterogeneous and backward past; a situation to be remedied.

The Context: Las Bambas in Apurímac

The Apurímac region, which hosts the Las Bambas mining company, is located in Peru’s southern Andes and comprises seven provinces, eighty districts, and 377 rural communities. Apurímac has a rugged topography, combining high mountains with deep canyons. Two-thirds of its population is rural and Quechua-speaking. Apurímac is one of the country’s poorest regions: according to the 2012-2016 Institutional Strategic Plan for Apurímac, the poorest provinces in the region are Cotabambas and Grau—precisely where the mining company is located (Gobierno Regional Apurímac 2012). For 2010, the per capita income in Challhuahuacho—the district hosting the company—was about $62 monthly, 30 percent of the national minimum monthly wage, estimated at $203. According to Portilla (2005), Apurímac’s structural poverty is due to its geographical isolation and lack of effective economic programs and public policies.

The main economic activities in the region are livestock, particularly sheep and cattle, and small-scale subsistence agriculture. Practices such as trueque (barter) are widespread (Argumedo and Pimbert 2010), consisting of the exchange of products between communities from different ecological zones. Potatoes from high altitude are, for instance, exchanged for corn from medium altitudes. Agricultural and livestock activities rely on seasonal water taken by the farmers from rivers and creeks. There have been few public investments in irrigation infrastructure and domestic public water networks. The study area’s main water sources are the rivers of Challhuahuacho, Fuerabamba, Pumamarca, and Pamputa. Rivers also partially filtrate and feed existing springs from where people take water as well.

In legal terms, many communities located in the region are not recognized as comunidades campesinas (communities). Some are in the process of being formally recognized by the Public Register Office. The implication is that community titles of ownership are not formally endorsed but only exist in community registers or inventories (IAG n.d.) Land use here can be either organized communally or individually. It is often based on groupings of smallholdings known as laymes, with communities allocating land access and usage rights to families. After the land has been thus allocated, it may be inherited or rented out. Although not common, land sales do also happen, but only if the full community assembly approves.

Provincial government assessments report low agricultural productivity and insufficient and deficient roadways, irrigation systems, and health-care services as compared to other areas of the region. While the province of Cotabambas is rich in natural resources such as water and land, growing problems of pollution and over-exploitation generate a wave of resource-related conflicts in the Province. In our case study area, in 2007, 31 percent (13600 km²) of the district of Challhuahuacho (43996 km²) was granted to mining concessions.
During 2015 and 2016, there were several socioenvironmental conflicts provoked by the presence and operations of the Las Bambas mining company; some farmers from different communities were even killed by the police during protests. In September 2015, as a way to suppress social mobilization and execute control by military forces, the central government declared a month-long state of emergency for the region (La República 2015).

The Las Bambas Mining Project

Copper in the Las Bambas zone was discovered in 1911 by the Ferrobamba Limited Company, which abandoned the site and concession after some years. Over the following sixty years, there were several other initiatives to explore the concession, on behalf of both the government and private companies (Montes 2008). In 2003, as part of the Peruvian Government’s privatization policy, the Investment Promotion Agency (ProInversion) put the exploration of copper in the region out for tender. In 2004, the concession was awarded to the Swiss Xstrata Company, which later became Xstrata Copper, the world’s fourth largest copper producer. In 2013, Xstrata Copper merged with the international Glencore Group (Xstrata 2013), which sold Las Bambas to the Chinese MMG Limited in 2014. The ore deposits of the Las Bambas concession are Chalcobamba, Ferrobamba, Sulfobamba, and Charcas, located at 4,000 m above sea level in the provinces of Grau and Cotabambas (ProInversión 2005). Xstrata began its explorations in 2005, completing its pre-feasibility study in 2008 and the environmental impact assessment in 2010 (IAG n.d.) In 2015, the construction phase was finished, and operations started in 2016 (MMG 2014).

The concession area measures 35,000 ha, with an investment of approximately $423 million (Xstrata n.d.a.). It is a mineral reserve that contains an estimated 7.2 million tons of copper and a total of 12.6 million tons of mineral resources. The company estimated that it would be able to produce 2 million tons of copper in the first five years of operations (Las Bambas 2015). As a social contribution, $45.5 million of the $121 million of Xstrata’s offer for the exploration concession was allocated to the Las Bambas Social Fund.

About forty-nine communities are located around the Las Bambas project, six of which sit directly in the perimeter of the mining concession: Fuerabamba, Huancuire, Pamputa, Chichahuí, Pumamarca, and Conocacca (Gouley 2005). Because of its location on one of the deposits to be mined (SNC-Lavalin Perú 2014), the community of Fuerabamba needed to be relocated. Fuerabamba consists of approximately 500 families and occupies an area of 8,660 ha in the district of Challhuahuacho. Xstrata negotiated with community members to establish the conditions for the resettlement and the other benefits that the community would receive in return for agreeing to make place for the mining company (see Sosa Landeo 2012). We focus our analysis on how these developments affected water in both the resettlement area, as well as in the communities of Choaquere and Chila which would host the relocated Fuerabambinos. We first briefly explain how the company obtained its water permits.

The mining project received permits to use water in 2006. These permits were granted by the ALA Cusco and approved by the Cusco Water Users Board (a federated organization that represents all water users). Permits were granted for (1) industrial uses, to control dust emissions and maintain access roads to the project zones, and (2) mining uses, to mix water with additive lubricants for drillings. Water sources to meet both uses were springs, creeks, and part of the Fuerabamba River. These sources are located in the communities of Pamputa, Huancuire, and Fuerabamba. For industrial uses, some 47,331 m³/year were granted, while 120,418 m³/year were allocated for mining use. The total water use permit for the company was 167,749 m³/year. In addition to these productive use permits, the company also obtained rights to use water for domestic purposes—approximately 21,800 m³/year—intended for its personnel during the exploration stage. These volumes granted by the ALA are different from those forecasted by the detailed EIA for Las Bambas, prepared by Golder Associates (2010). The numbers in the EIA seem to more accurately reflect actual requirements of the project: it assesses total water needed for drilling to be 3467.5 m³/year for each drilling rig, with a total of 166 drilling platforms, and estimates water needs for emission control to be 49,640 m³/year (which is higher than the volume granted). For domestic uses, the EIA estimates that nearly 9,490 m³/year will be needed.

According to the company’s general manager, water would not become an issue during mining operations because the region is rich in water resources, and the company would only impact one of the region’s six rivers, the Fuerabamba River. Contradicting this optimism are the company reports that indicate that in 2012 it used a water volume of 160,976 m³ from different rivers: Fuerabamba 113,395 m³, Challhuahuacho 14,994 m³, and Pumamarca 25,884 m³, as well as 2,204 m³ from the Patumayo creek (Xstrata 2013). The farmers of Pamputa indeed noticed a decline in their water availability and also found that the color of the water changed. The water authority that granted the water permits to the company in 2009 shares the optimism of the general manager in its assessment that livestock production in the area will not be affected by the company’s water use. They see no grounds for conflicts over water emerging between the company and local farmers. Yet, the same authority does admit that conflicts can arise when extraction activities begin.

To prepare the area and sources for operations, the company received additional permits to use water and develop works along the Ferrobamba and Challhuahuacho rivers, as well as along some creeks located in nearby communities (Pamputa, Huancuire, Pumamarca, Choquecca-Antio, Quehuira, and Chila). In addition to these official water permits, the company also negotiated permission to pump water out of the Challhuahuacho River to be stored and used for its extractive operations during drought periods. The pumping zones are located in communities downstream from the
project, in the district of Challhuahuacho. The negotiations involved purchasing some 30 ha of land from a community for $2,200 per hectare.

Water Arrangements, Formalization of Rights, and Tensions within Communities

Water and Rural Communities Neighboring the Las Bambas Project

In the area, water access and use have always been subject to negotiation and struggle. The history of the Choquequere Puquio [a spring], in the highlands of the community Choquequere, provides a telling example. In 1939, farmers from three communities—Choquequere, Challhuahuacho, and Chila—fought for access to the water from this spring against farmers from the neighboring district of Haquira. After two days of clashes and strategic use of political networks, Choquequere and its allies succeeded in retaining their access to the spring. The Haquireños had to relinquish their aspirations to also access its waters (Alarcón n.d.) Years later in 1989, a new round of confrontations occurred in the zone around the springs. To strengthen their claims to the spring’s water, the leaders from Choquequere and the other communities emphasized that the waters had belonged to them since the 17th century. The importance of safeguarding, protecting, and caring for the Choquequere Puquio and other springs are thus well ingrained in the culture and memory of the communities.

Like other communities in the area, Choquequere allocates its various sources of water according to the specific uses and needs of its members. It also shares water flows with other neighboring communities, like Chila, and with the district of Challhuahuacho. For example, one of the springs located in the highlands of Choquequere—of about 11 l/s—is specifically designated for domestic purposes in Challhuahuacho, something that is recorded in an agreement signed between the municipality and the community. Likewise, the Ccaccatuni Puquio was given by Choquequere to Chila, which is also shared voluntarily via a local agreement. In exchange, Choquequere farmers can take gravel from Chila for construction works in their community. Another spring was earmarked for sprinkler irrigation for Choquequere, Chila, and Minascucho, working together under a project developed by the municipality of Challhuahuacho. From the same source, the Choquequere community promised to divert water for a Domestic Sanitation Board (JASS) project to benefit about fifty-three families.

According to the project representatives, so far there is sufficient water in the territories of Choquequere. The problem is the infrastructure to access and convey it to lands and people. Some families, for instance, access their water from the Ramon Puquio source by using buckets. Others take water from a acequia (creek) that originates from the Illahuatana spring, for their consumption and for their animals. During the dry months of the year, even the permanent sources may run dry, forcing people to look for water beyond the communities’ areas. Some take their horses and see where they can get water, collecting it in buckets and transporting it to their homes (Alegría Galarreta and Estrada Zúñiga 2010). In these drier periods, they need to ration water and use it carefully for some days until another source is found. Via the water projects to be implemented in the area, farmers expect to bring water closer to their homes. Hence, the plan is for every family to have their own faucet with safe drinking water and for about 35 ha of pastures and vegetables to be irrigated.

Communities register their water sources, including small lagoons, in their community books; they know exactly how many sources are available and for what purposes. The Choquequereños thus know that most of their sources are already allocated to different purposes or shared with other users. Yet, and as we show in more detail below, the formal status of these records, plans, and sharing practices are disputed, while they are also poorly captured in the baseline inventories of water sources performed by the mining company. Community members are also less sure about the quality of their water sources, a problem that may become more urgent when water qualities are increasingly influenced by mining operations. “There were engineers doing some studies, but we did not receive that information on the spot...they know it, but didn’t tell us,” some farmers remarked, referring to the EIA a consultancy company was performing for the mining company. “Then, the engineers left books here, we don’t know if the information is there…. There is a lot of information, too much, but nothing that we can understand…we don’t know how to even start.”

Communities’ Water Rights and the Formalization Process

As noted, a community’s resources and sharing arrangements—including cropland, natural pastures, non-agricultural land, barren land, springs, creeks, and rivers—are often duly written down in community books (or statutes). Yet, it is only if they are also registered with the government office of public records in main cities such as Cusco or Abancay that a community’s rights to their resources are formally recognized or that the resources themselves formally exist. The importance of this becomes very clear when an outside claimant, like the mining company, wants access to these resources. The lack of formal registration, for instance, caused a mismatch between the mining company’s inventory of Pamputa community’s springs (it counted thirty) and Pamputa’s own records, which list many more: three lakes, forty-nine springs, creeks, and wetland zones (Comunidad Campesina Pamputa 2010). Also, the lack of formal acknowledgment of Pamputa’s existing uses and rights allowed the ALA to grant the mining company permits to use some of its water flows—for instance the 4 liters per second from the Huasijasa creek—without the community’s knowledge or consent. In such cases, of which there are many, the sources the mine wants to use appear in formal records as unused sources, even when communities have been using them for a long time or when they are already committed to future uses.
According to the Water Resource Law, water sources must be registered with the Water Authority; it is not enough when waters are only registered with the community’s books. In practice, until 2010, communities as well as local authorities deemed it sufficient to register their uses and sources of land and water with public registers. Formalizing rights was not common practice; “No one does it,” explained the mayor of Challhuahuacho at that time. Even for drinking water projects, formalization only happened after projects began. This lack of formal registration was not a problem as long as water governance remained within locally recognized boundaries and as long as claims and rights were recognized and respected within these boundaries. It only became a problem when the mining company wanted a share of the waters and with the active promotion of the new water law. This is when representatives of the government started becoming more critical of customary water sharing practices and community registration. One water authority officer observed, “Granting water rights is the exclusive task of the ALA; nobody can have property over sources because water belongs to the state… the water law only recognizes the communities’ usos and costumbres, but that doesn’t make them the owners of water…."

Communities are nevertheless hesitant to formalize their rights because it is both cumbersome as well as expensive. As some of the farmers explained, “Formalization is very costly, about $4000, before it was even more expensive, around $7000.” When considering the high poverty rates in the region, it is clear that formalizing rights is something almost no community is able to afford on their own, without external sources of support. For example, as noted, the mining company proposed to pump water out of the Challhuahuacho River and store it for use in their operations during droughts. Pumping zones are located in communities downstream from the project and from the district of Challhuahuacho. The company held land negotiations with one community and agreed to have access to land and to the pumping zone. As a result, the community that engaged in negotiations had its water sources recognized and endorsed by the authorities, but those sources were shared with another community that was not aware of the negotiations or formalization process. The members of the second community did not even know whether they and their uses had been considered in the recognition process. What they found, as one farmer told us, is that the community with formalized rights “closes the pipe and keeps water from entering the canal.” Since there is no water anymore in the canal, they now have to look for other sources. The members of this community were not consulted about those negotiations and are now affected because they depended on those shared waters for their and their animals’ consumption.

The formal registration of rights also involves complicated procedures (described above). In addition, many communities did not see why they would need to formalize water rights: after all, they were managing their irrigation and domestic water resources on their own, and had been doing so for a long time, without ever receiving any state support. As water resources are located in their communal territories, communities considered them a part of their collective property. In this sense, Escalante (2010) is right in concluding that water never really became a public good in the Peruvian Andes: the “degree of control executed by the state was minimal or absent” (Escalante 2010:251).

Early in 2011, however, this changed, and state-supported processes of formalization were started in communities neighboring Las Bambas: Choaquere, Chila, and a few others. They began registering their water uses and rights with the ALA Cusco and later with the ALA Apurímac. Community leader testimonies reveal that their agreement to this process was importantly prompted by their desire to protect their water sources from the mining company, as two leaders from communities located within the area influenced by Las Bambas mining operations expressed: “Now with the mining company [in the area], we don’t know what might happen.” So, they felt it would be necessary “to get the springs recognized because over time, the mine may dry them up, or others may take the water if it is not recognized. When the mine comes, with this document, we will defend our water.”

Communities’ desire to more formally secure their future access to water sources was thus a response to a perceived (future) competition over their waters with Xstrata, which started mining operations in Las Bambas after the approval of their Environmental Impact Assessment. It is no coincidence that especially those communities which entered into direct negotiations with Xstrata engaged in the process of formalizing their rights. In part, these negotiations with the company earned them some income, which allowed them to pay for the costs of formalization. Hence, the communities of Chila and Choaquere obtained the money to start the formalization process through their land negotiations with Xstrata. Like other communities, they felt the need to have some kind of legal protection to secure their current and future rights to water. The community of Choaquere took active charge of the formalization process: “Now we are getting the ALA Cusco to register our water. This is under way. The engineers are collecting information on the sources and preparing blueprints, so water will be perfectly well recognized.”

Our conclusion is that the protection and respect of customary rights that the law promises is a rather empty one. In practice, the legal security is only for those who hold a difficult to obtain and expensive state water license or permit. When communities have not gone through the formalization process, their water resources are available to be given in concession to others (see Alegria Galarreta and Estrada Zúñiga 2010).

**Contestation and Disempowerment of Customary Water Rights Arrangements**

The resettlement process of Fuerabamba provides an interesting case to further shed light on the controversies and contradictions of water formalization rights. When we asked how the water was going to be distributed or shared with the
new settlers, nobody in the area had precise information. The community of Fuerabamba fully relied on the mining company to get the water they needed in their new resettlement area. As some Fuerabambinos revealed, they were confident that if problems with water would arise, “the company will buy water for us.” The president of the community referred to their good relations with the mining company to justify this confidence. It was based on the several years of negotiations that Fuerabamba and Xstrata had already engaged in, negotiations about the resettlement process and the facilities that the company would provide to the community in the new area. In 2010, Fuerabamba signed the agreement to relocate Fuerabamba’s 500 families to the community territories of Chila and Choaquere. The mining company bought about 250 ha of land in total from these communities and would construct a new town: “Nueva Fuerabamba.” To arrange these purchases, Chila and Choaquere held a series of meetings with the company to clarify communal land borders, establish the exact area of the land, and agree on prices. Representatives of both communities reported that water was not discussed in those meetings: the question of how Fuerabamba would be provided with water was not part of the discussions. In contrast, the General Manager of the company, by referring to the new area for the resettled families as “a ‘New York’ in Challhuahuacho” suggested that the new plan included all facilities. He said that although not discussed in the meetings, they had taken care of water and would get it to Nueva Fuerabamba (personal communication, 2011). In our discussions, leaders of Choaquere pointed out that this water would have to be taken from elsewhere since their sources were already allocated.

The confidence of Fuerabamba in the company’s willingness and powers to look after them seemed justified when the process of getting water rights was set in motion. In December 2011, the president of Fuerabamba requested authorization to carry out water studies in the area. This was the beginning of a process that would eventually result in Nueva Fuerabamba obtaining its water rights license for drinking purposes. The process was supported by the engineering and construction company GMI, part of the Graña and Montero Group, one of the biggest companies in the construction sector in Peru. This same company was responsible for the construction of the mining site of Las Bambas. Paid and commanded by the mining company, it was agreed that the engineering company would carry out the legally requested water and feasibility studies in support of Fuerabamba’s water rights’ application. After submitting the formal request, the law allows a period of seven months to finish all the studies needed to get the license. Yet, already one month after the application in January 2012, no doubt because of the engineering company’s fast work, Fuerabamba delivered the water studies to the water authority and asked for its water rights to be approved. The process, however, did not go unchallenged.

As noted, many of the water sources are located in the territory of the community of Choaquere. Choaquere opposed the allocation of water rights to Fuerabamba. The farmers of Choaquere feared there would not be sufficient water for all and were reluctant to agree to interventions that would compromise their water sources without previous consultation. The respective water sources were already under pressure, as they were shared with two other communities and the district of Challhuahuacho, with additional pressures arising from several future water projects that were already planned for irrigation, livestock, and domestic purposes. Choaquere argued that in not considering all present and future uses, the consultancy company’s water studies overestimated availability. The community’s doubts were backed up by the municipality of Challhuahuacho. The municipality suggested that Fuerabamba meet its water needs with water from sources different than the ones used by Choaquere.

Choaquere issued an official appeal against the studies and the proposed allocation of water rights to Nueva Fuerabamba, partly on account of the fact that it was not involved or consulted. They asked for the intervention of the ombudsman office to verify whether the process of establishing the study and the proposal was correct. Choaquere also questioned whether it was legally possible to grant water to a non-existing entity. Nueva Fuerabamba, after all, had not yet been allocated any legal status, neither as a community nor as a residence. The water authority transferred the issue to Fuerabamba for them to respond to these complaints. Backed up by the studies of the engineering company, Fuerabamba responded that there would be enough water for everybody to share. In the meantime, officials also started questioning the legal status of the disputed sources. Choaquere presented a request for getting state-endorsed water rights over its springs in 2011. However, this request was rejected by the authority because it did not include the respective “proper water studies.” The implication was that Choaquere did not hold any official water rights.

Because of the dispute and opposition to allocate water rights to Fuerabamba, the water authority organized a number of visits to Choaquere to inform them about the allocation and the full extent of the potential water rights for Fuerabamba. Meetings were also held between the mining company and the communities, including Choaquere, where, besides water issues, the company was reminded about the promises it had made to help developing projects in the area. The representatives of the company, although emphasizing that those communities were not part of the company’s impacted area and therefore were not entitled to compensation or projects, promised that they would consider the communities’ demands.

Choaquere continued its opposition against the allocation of rights to Fuerabamba, even intensifying it when it became clear that Fuerabamba not only wanted the water that was flowing from the springs but also claimed rights over the springs themselves. Farmers from Choaquere were considering protesting and blocking the road that connected Challhuahuacho and the mining operations with other regions like Cusco if these plans were to materialize.

The case illustrates how the promise of formal rights, together with the protection and support it received from the mining company, gave Fuerabamba a clear advantage over
other users. As a local legal advisor commented, “In daily practice, the customary rights of a community—Choquere—cannot be paired with the water rights given by the state to a second community—Fuerabamba, particularly since the latter constitutes a strategic actor for the mining company. This actor will get all the attention, advice, and logistic support needed to materialize formal water rights, even if that means affecting other communities’ rights.” As noted, it is crucial for the company to deal with Fuerabamba’s needs and the consequent resettlement process because the development of the mining site depends on this. The process of formalizing Nueva Fuerabamba’s water rights lasted for more than a year, with several changes in the communities’ board of representatives. There were several meetings between the water authority, the communities, and the company to discuss the water intake for Fuerabamba and development projects for the farmers. During these discussions, tensions were alleviated, and Choquere agreed to share its water flows, which led the water authority to conclude that the “problems were solved.” There were no further details given about any agreements regarding water sharing with Fuerabamba or others. The representatives of the mining company simply reported that there was “no more opposition in the area” and agreed to support several development projects in the communities, including Choquere. At least for the moment, Choquere was yet another community that seemed to be “convinced” by the economic support and development opportunities offered by the company—in any case, it did not have the force to continue its protests.

The water authority approved the water studies presented by Nueva Fuerabamba, certifying that 371 L/s would be available for diverse community purposes. This cleared the way for Nueva Fuerabamba to enter into the administrative process of getting its formal water rights.

**Conclusions**

This article presents a contextualized analysis of the influence of large-scale mining on the reconfiguration of water governance arrangements through the formalization of water rights. Focusing on the implementation of the mega mining project Las Bambas in the region of Apurimac, Peru, we illustrate the complexities, intricacies, and contradictions of the formalization of water rights in the communities neighboring mining operations. While some communities and families strategically resort to formalization as a legal protection for their security of tenure against present and potential future demands of competing stakeholders, there are many who decide against it because it is a very costly and cumbersome process. Our examples in fact suggest that the mining company is often the source of the funding, and technical advice communities need to be able to actually start the formalization process. This is ironic, as the mining company itself has clear interests and stakes in the resulting re-definition and re-distribution of waters and lands, as it needs these resources for conducting its operations.

The arrival of the mining company, through the formalization of water rights, thus reconfigures existing water governance arrangements among communities and between communities and the state. Existing arrangements evolved over years: they are based on experiential assessments of availabilities and of needs and are anchored in wider relations of co-dependency and mutual help between and within communities, like the voluntary agreements for sharing water flows and springs. While not without their own problems and conflicts, these logics of sharing are now being superseded by new ones in which the ability to pay for technically determined assessments of quantities becomes the basis of rights to water. As noted, the water sources that the community of Choquere had in their territories and used for different purposes were not respected because the community could not meet the technical requirements to officially formalize them.

Confronted with the combined legal, economic, and political force of the mining company and the state, communities have relatively few powers to protect and hold on to their own rights’ systems. This becomes particularly evident when they are confronted with company-supported neighboring communities which claim their waters: communities with state-endorsed rights are in a much better position to defend their claims. The example of the Fuerabamba resettlement’s incursion into the territories of Chila and Choquere is a clear illustration of this. It shows how formalization may lead to the gradual decontextualization of water rights from histories, places, and cultural dynamics. Instead of protection, formalization erodes the existing rights of rural communities if a competing claim enjoys the support of a mining company and the formal legal system. The formalization of one community’s rights often entails the exclusion of other communities from previously shared territories and water sources (see also Boelens and Seemann 2014), with the simultaneous existence of different distributional logics increasingly leading to conflicts, both about who has or should have access to the resource and about the normative grounds on which access should be based.

We conclude that the recent formalization of water uses and rights in rural communities near mining operations imposes a new normative hierarchy that privileges the rights of those aligned with the mining company over those that oppose it. The formalization of customary water rights is a process full of contradictions, especially when triggered by the demands of an economically powerful extractive industry; formalization undeniably entails profound redistributions of water and land and reconfigurations of existing logics of sharing and managing water. It may imply the irreversible erasure not just of existing rights’ systems and associated usos and costumbres but also of shared community histories and vernacular knowledges. The processes and impacts of water rights formalization need to be seen as part of ongoing and new dynamic interactions and struggles between communities, and between communities and mining companies, over access to and control over water and land. The state is never a neutral legislator in these interactions but actively favors
some users and uses over others as part of an overall strategy of development and economic growth. Beyond the discourse of “customary rights protected by law,” there is therefore a need to look at the actual results of formalization in terms of how it transforms or erodes existing customary rules, rights, and organizational arrangements. Which actors and interests are behind processes of the formalization of water rights, who benefits from such processes, who loses?

While in earlier days, communities established their own water governance principles, rights, and mutual responsibilities, now with the rearrangements in the area of Las Bambas, not just the rights but also the ontological and epistemological existence of communities’ waters stem from and are articulated in the terms of state-endorsed and technically-produced documents. How this matters is very much an empirical question. What is clear, however, is that with the loss of customary rights systems, also a wealth of knowledge about how to best care for and equitably share water risks disappearing. This is precisely the knowledge that may prove instrumental to counteract and resist the accumulation of water and its control in the hands of those who can pay for it or to develop and support more democratic and environmentally respectful ways of governing water.

This research stresses the need to understand and consider the already existing local water rights arrangements among rural communities, which determine the actual practices of water usage and governance at intra- and inter-communal levels. Mining and other extractive interventions usually take place in rural areas where formalized state rules and rights have low legitimacy, application, or even seem to be absent. It is fundamentally important to realize that these interventions do not come to operate in “legally and institutionally empty spaces,” but rather in contexts that are full of local arrangements, histories, institutions, and dynamics. Understanding and respecting the importance of these normative systems, recognizing the meaning and values of water beyond its material quantity and quality conditions, and avoiding the decontextualized imposition of state formalization processes can contribute to reducing tensions and conflicts among different water users.

Notes

1 We reserve the concept of “formalization of water rights” for the act and process of legally recognizing customary (“vernacular” or “local,” peasant and indigenous) water rights by the state water authority (cf. Benda-Beckmann, Benda-Beckmann, and Spiertz 1998; Boelens and Seemann 2014; Roth, Boelens, and Zwarteveen 2015; Seemann 2016).

2 The names of the interviewees have been omitted to protect their identities.

3 The Commission, hosted by the UNDP, was co-chaired by Hernando De Soto, Peruvian economist and World Bank consultant.

4 Livestock activities in the region were also related to violent events of cattle rustling (Valderrama and Escalante 1992)

5 The degree of infiltration varies depending on the characteristics of the aquifer in the area: limestone and permeable rock (SNC-Lavalin Perú 2014).

6 Groups of plots are assigned to every family for agriculture and livestock purposes (Xstrata n.d.b.)

7 About 72.6 percent of the territory of Apurimac has been granted to mining (Alegría Galarreta and Estrada Zúñiga 2010).

8 Among others are RA 070, 080, 081-2012, and 0028, 0029-2013 ANA-ALA-Medio Apurimac.

9 Communities from Cusco, after getting the state water rights issued by the ALA, also registered them with the public registers “to be more powerful while facing interventions of third parties” or users (Escalante 2010:245).

10 RA 271-2012 and RA 0344-2013-ANA-ALA-Medio Apurimac-Pachachaca

11 See Defensoría del Pueblo (2012).

12 Because of the Las Bambas mining developments in the district, the population grew with its commercial activities having new water demands from restaurants, hotels, and shops.

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