

Forced Engagements: Water Security and Local Rights Formalization in Yanque, Colca Valley, Peru

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For vulnerable groups in society, water insecurity and deficient water availability for food production commonly reflect unequal distribution of water volumes, quality, and services within unequal power structures. Water security is necessarily a political dilemma. Policy debates, however, tend to naturalize and de-politicize this concept. Instead of recognizing that water security and distribution belong to the realm of human interests, choices, negotiation, and power plays, they are often represented as following universal economic, legal, and natural-scientific rules. In this context, there is a widespread policy assumption that formally recognizing local, customary water rights is one important element to grant water security for marginalized user groups. This paper challenges this assumption and examines the illustrative case of a Peruvian Andes community, Yanque. We scrutinize formalization policies that claim to enhance water security for marginalized communities regarding (1) material water allocation and (re)distribution and (2) water rulemaking, legitimate authority, and cultural-political organization—both elements that stand central in formalization processes. We discuss the complex relationship between formal and alternative “water securities” and the cultural politics of rights recognition and show that uncritical formalization of local water rights often leads to weakening rather than strengthening local water security.

Key words: water rights, formalization, legal pluralism, indigenous and peasant communities, Andes, Peru

Introduction

In many countries around the world, food security importantly builds on smallholders’ irrigation practices and production systems. Nevertheless, the water insecurity these smallholder groups face in a globalizing society is ever growing. In most cases, it is not the absolute availability of water that explains why marginalized communities and families have insufficient, insecure access to the resource and its benefit streams. Instead, there is growing awareness that water scarcity and insecurity for large groups in society reflect unequal distribution of water volumes, quality, and services, resulting from unequal power structures (e.g., Martínez-Alier 2002; Soussan 2004; Swyngedouw 2005). As the United Nations Human Development Report (UNDP 2006) emphasizes, the water

crisis is not the result of scarcity but of poverty, power, and inequality.

Consequently, the notion of water security is necessarily a political dilemma and requires politicization. In general terms, water security refers to people’s and ecosystems’ secure, sustainable access to water, including equitable distribution of advantages/disadvantages related to water use, safeguarding against water-based threats, and ways of sharing decision-making power in water governance. However, once “water security” is incorporated in national laws, development strategies or policy documents, it is often profoundly depoliticized—suggesting that techno-rationalized and managerial solutions can solve water scarcity issues, whereby all benefit equally. At the same time, the concept of water security tends to be naturalized. Rather than acknowledging that water security and distribution questions are part and parcel of the realm of human interests, intervention, and power plays, they are portrayed as issues that follow universal economic, legal, and natural-scientific rules and for which “naturally best, objective answers” are available (Boelens and Vos 2012).

In direct relation to this, there is a widespread assumption in policymaking that formalizing water rights is the key to increasing water security for local user groups—as also attested by international financing institutions’ worldwide support for numerous water rights formalization programs (e.g., Soussan 2004; World Bank 2012). One enduring supposition of modernist water policy programs is that standardized rulemaking

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will benefit all and produce efficient rights, mutually beneficial exchange, and rational organization. This is also central to the thrust for legal modernization (Assies 2009). Hernando de Soto, the influential Peruvian World Bank policy scholar, for example, explains that the lack of such universal norms in “closed” countries in the South is the main reason they cannot fully enter the world system of capitalist exchange. Thus, the civilizing mission of the academic community would be “to help governments in developing countries build formal property systems that embrace all their people” (De Soto 2000:180).¹

This paper examines how Peru’s water legislation follows this drive for modernization and formalization. The General Water Law of 1969 (amended by later decrees and the 2009 Water Resources Law) established a hierarchical administrative structure, formalizing water allocation and distribution modes.² By 2004, however, only 9,700 water licenses had been granted, quite a low number considering an estimated one million Peruvian water users (Guerrero 2006). That same year, the Program to Formalize Water Use Rights (*Programa de Formalización de Derechos de Uso de Agua* or PROFODUA) was established to foster the process. Whereas PROFODUA concentrated its work on the Peruvian Coast, mainly farmed by large-scale export oriented companies, in 2006 it started to grant formal water rights in the Andean highland regions (Hendriks 2010; Vera-Delgado 2011).

As exemplified by this paper’s case study in Yanque, in the Colca Valley, numerous user communities in the Andes have a broader view of “water rights” and “legitimate water authority” than notions that are grounded in State law alone. Water rights exist under conditions of legal pluralism, where rules and principles of different origin and legitimization co-exist and hybridize. Water rights are locally rooted and simultaneously assume the presence of law, defining themselves in contrast and relation to it (Boelens and Doornbos 2001; Guevara 2010). Peruvian law has, as a bureaucratic strategy, recognized and incorporated customary rights into formal frameworks. These have been institutionalized and codified to supplement official law and enhance its own legitimacy. Hence, both local and official orders base their existence on mutual interaction and strategic “recognition” and are partners to a forced engagement or “shotgun marriage” (Boelens 2009).³

In this paper, we elaborate on the notion of water rights as a bundle of water *use* rights (material allocation arrangements) and water *control* rights (decision-making arrangements) (see also Beccar et al. 2002; Roth et al. 2005; Schlager and Ostrom 1992).⁴ Similarly, water security intrinsically combines (1) issues of material water allocation and (re)distribution (“socioeconomic justice” expressed in, for example, water use rights) and (2) those of water rulemaking, legitimate authority, and cultural-political organization (“cultural justice” or “recognition,” particularly related to water control rights). In Peru, both aspects are the key targets of change in formalization processes. This paper’s main focus is to

conceptually and empirically scrutinize the claim—made by mainstream policies but equally by many critically engaged policy scholars and “pro-poor advocates”—that formally recognizing customary water rights will enhance water security for marginalized communities. We argue that the widespread (techno-rationalized and legalistic) recognition of local water access and water control rights contradicts existing use and allocation practices, authority, and management modes. Therefore, dominant groups’ interests in state and/or market biased formalization of local water rights may often weaken rather than strengthen water security, with a negative impact for food and livelihood security. We elaborate this argument showing the complex entanglements of formal and local rights, going beyond dichotomous conceptualizations of water institutions, actors, positions, and legal frameworks

This research forms part of the activities of the international Justicia Hídrica/Water Justice research alliance (for information on the alliance, see www.justiciahidrica.org). Research material—for which groundwork was laid during two decades of active involvement in and study of water societies in Peru and neighboring countries—was gathered during fieldwork in 2002-2007 and 2011-2012. The Yanque case was investigated in 2011, based on literature review, in-depth interviews, participant observation, organizing and attending workshops and water policy debates, and reviewing secondary data.

After conceptualizing local water security, water rights, and providing background on the Peruvian water rights formalization process, we introduce the case of Yanque in the Colca Valley, outlining local notions of water security, rights, and distribution as well as the principles and practices promoted by the PROFODUA intervention. The paper then examines the formalization of local water use rights by means of “recognition policies” relating to local rules and norms. In particular, it examines how customary law is often legalized not under benevolent policy strategies to support the poor but to tactically install “forced engagements” between official and local law systems in a mutual quest for societal legitimacy. The final section of the paper draws conclusions about the complex relationship among formal and alternative “water securities” and the cultural politics of recognizing water rights. Communities such as Yanque are deeply skeptical about these and engage in forms of non-compliance and resistance.

Water Security—Formalization of Local Water Rights

Different dimensions of and interests in water security are often mutually incompatible and cannot be pursued simultaneously (Dimitrov 2002). Water security for ecosystems and urban or agricultural development is not always compatible; a national policy focus on water for hydropower security and large dams may challenge local livelihoods; water security for mining companies in many countries endangers human consumption, health, and subsistence agriculture, etc. (Castro 2008; Lankford et al. 2013; Soussan 2004). Yet, such water

security notions and policies are commonly depoliticized and naturalized, mostly with a state- or market-centric bias (Bakker 2008; Bauer 1997; Lankford et al. 2013).

Studies on national water bureaucracy and the cultural politics of irrigation in Peru by Gelles (2000, 2010), Guillet (1992), Mitchell and Guillet (1994), Trawick (2005), Van der Ploeg (2008), and Vera-Delgado (2011), among others, have shown how such depoliticization and naturalization render invisible the ways in which policy measures are often instrumental to the controlling interests of state institutions, dominant market players, and local or national elites. They legitimize planned intervention (Long and van der Ploeg 1989) to foster outside control over local water affairs in Andean communities (see also Lynch 1988, 2012). In a similar way, Orlove and Caton (2010) and Boelens and Vos (2012) provide an overview of how the current globalizing Integrated Water Resources Management (IWRM) discourse has become hegemonic language in official Peruvian water politics. As a result, the water control and security problems and solutions they frame are often entirely different from the way that marginalized user groups and highland communities themselves define water (in) security (see also Guevara 2010; Urteaga 2010).

Dimitrov (2002) argues that security conceptions basically relate to four core elements: (1) who or what is to be protected (the referential object of security), (2) what they are to be protected from (threats or sources of danger), (3) how to protect them (means of pursuing security), and (4) who needs to do this (actors and institutions responsible for securing water access/control). These core elements differ fundamentally according to actors' interests and perspectives, often divided along class, ethnic, and gender lines and other power differentials. Consequently, market-based water security strategies around the globe—as the latest water rights privatization policies (Perreault 2008; Swyngedouw 2005) or Payments for Environmental Services (PES) (Robertson 2007; Sullivan 2009; Rodriguez de Francisco et al. 2013)—have encountered fierce resistance from local communities defending what they see as their water security and rights (Bebbington, Bebbington, and Bury 2010; Castro 2008; Hoogesteger 2012; Perreault 2008).

Such reactions also show that the definition and pursuit of “water security” by one entity or policy may often entail “water insecurity” by another. Therefore, we conceptualize the plural notion of “*divergent water securities*” as an intrinsically relational, political, and multi-scale relationship of access and control that takes shape in contexts of unequal power relations. Water securities are profoundly related to the pluralist, non-universal, dynamic notion of “*water rights*,” a conceptualization that profoundly differs from mainstream notions seeing “clear, uniform, and enforceable water rights” as tools and conditions for the rational exercise of state water control and/or exchange of water and services through market forces (Roth, Boelens, and Zwarteveen 2005).

As many authors have shown, understanding water rights in highly diverse countries as Peru—and in particular in the highlands—requires acknowledging the historical specificity

and embeddedness of water securities, rights, and collective user action in the country's complex ecological, cultural, and political settings (e.g., Baud 2010; Gelles 2010; Guillet 1992; Lynch 2012; Paerregaard 2013; Saldías et al. 2012). Far from being facile or consensual arrangements, water rights stem from ongoing internal struggles and harsh negotiations (e.g., Vos et al. 2006; Vera-Delgado 2011). In addition, water rights systems in the Andean highlands comprise dynamic sets of hybrid rules, rights, and organizational forms, joining local, national, and global rule-making sources and patterns (see, e.g., Guevara 2010; Hendriks 2010). As the aforementioned studies on water politics in Peru have attested, understanding users' reasoning and expression of rights is crucial for comprehending their water security claims and the ways in which local water control and defense of livelihood interact with national and global water/power arenas (Boelens 2013; see also Bebbington 2001; Bebbington, Bebbington, and Bury 2010; Van der Ploeg 2008).

The fact that local water securities and rights profoundly differ from (and may challenge) state laws and market-oriented water policies means that they are commonly seen as “unruly,” “disobedient,” and “intangible” (Boelens 2009), so officialdom often discursively labels them as “inefficient.” In 2007, for example, Peruvian ex-president Alan García (2007) launched a frontal attack in the national newspaper *El Comercio* on “uneducated” peasants and their advocates for impeding “development” and on the presumed backwardness of local ideologies frustrating modern (read: neoliberal) progress and the rational exploitation of Peru's natural resources. Parallel with this, the government applied for Inter-American Development Bank funding (\$200 million) to battle against Peru's “limited water culture” and “irrational water use” (Government of Peru 2007:3, 24). Standardizing water rights was the central thrust, among other actions by enacting a new Water Resources Law (in 2009), and “promoting a modern water culture among the people” by means of the program to formalize water use rights (PROFODUA, already started in 2004) (Autoridad Nacional de Agua 2009). This last measure would have to “make it possible to transfer water use, as a significant contribution toward efficient allocation and pricing” (Ministerio de Economía y Finanzas 2007: 11)—a standard element of neoliberal recipes. Although the plan brandishes the modern jargon of participatory, decentralized, integrated water management, users appear only in the last section of the plan, entitled “Risks”: “in particular, irrigation user boards... might reject the proposed reforms” (Ministerio de Economía y Finanzas 2007: 15). The plan concludes with the mandatory mention (a prerequisite for Bank approval), “Because of the nature of the actions supported by the Program, it will have no direct or indirect adverse impacts on indigenous peoples” (Ministerio de Economía y Finanzas 2007: 14). Simultaneously, however, the program mentions as one of the country's fundamental problems “informal water use and administration, especially for agriculture” (Ministerio de Economía y Finanzas 2007: 26). Considering that the diverse array of informal norms, rights, and organizations are *the basis* for peasant and

indigenous water cultures and water securities in the Andean region, how could they help but be affected? How could they not be affected when, as the Program explicitly states, only those water users who accept the standardized rules will be entitled to receive public funding? How could their collective rights and water securities not be affected, when the whole point is to weaken them and promote the individualization of water rights? In the sections below, we examine one illustration of this process with the case of Yanque in the Southern Andes.

Yanque: Water Rights and Water Security in the Colca Valley

Yanque, a community in the Colca Valley, is located at 3,417 meters above sea level in the Province of Caylloma, Arequipa, of southern Peru. Yanque features a complex, hybrid social structure built around local water security. Located on a semi-arid valley slope, the community experiences water scarcity for almost eight months of the year. Irrigation is pivotal for the survival of peasant families that over the centuries have developed a rich water culture with context-rooted water rights.⁵

Yanque has a population of 2,320 Quechua and Spanish speaking inhabitants (INEI 2007). Although two officially recognized Peasant Communities, Yanque Urinsaya and Yanque Anansaya, gained legal status in 1965 and 1967, these constitute a joint population and identify in relation and opposition to neighboring communities in the Valley. This division between two kin groupings (*ansaya* and *urinsaya*, “high” and “low” moieties; see Gelles 2000) is also reflected in the social organization for irrigation, which is expressed in the respective Irrigators’ Commissions (Comisiones de Regantes). Yanque Anansaya has five irrigation sub-systems: the Waranqante, Hatun Yaku, and Churkina canals and the Pampaqocha and Senqawas springs. Yanque Urinsaya has three irrigation sub-systems: the Mismi canal, the Qocha Pata spring, and the Chinini aqueduct and water tank (Valderrama and Escalante 1988). Peasants in Yanque irrigate according to two agricultural seasons. During the “*michka*,” irrigation is practiced before the early sowing of crops (beans, potatoes, peas, etc.) during the dry season (July and August) to harvest the crops in the mid-rain season (December and January). Irrigation for this crop is not distributed per water shifts, as the peasants who want to irrigate release the amount of required water by themselves from the main canals. During the “*tarpuy hatun*,” irrigation shifts occur in the main agricultural season, when crops such as corn, beans, barley, quinoa, and oats are planted between September and December and harvested in May and June of the following year.

Local water security is deeply anchored in local water control rights. The Yanqueños, like other Colca Valley communities, irrigate according to the *mita* distribution system, dating back to the Inca Empire. Distribution in the *mita* system is determined by a Water Mayor (currently known as a *regidor*) and involves preparing a water schedule by the agricultural cycle and irrigation sectors (divided per crop and

including fallow land).⁶ This is done at the start of the sowing season during a general assembly of the Irrigators’ Commission. Here, all water users from each sector gather to discuss a secure irrigation order, which is respected until harvest. The water distribution starts with the land plots nearest to the water source and continues consecutively from the top down. Each irrigation sub-system has its own Water Mayor, who distributes the weekly water shifts at the Irrigators’ Commission office according to the established irrigation intervals and writes them down in detail in his notebook. The first watering after planting is after 90 days, the second shift follows after 40 to 45 days, and the third one after 35 to 40 days, depending on the land characteristics and crop types. In general, a water shift is not measured by volume or time but allows the peasant to irrigate his or her plots as long as he/she needs (“until finished”), again, depending on the size, crops, and soil characteristics of the plot.

This traditional way of organizing irrigation, based on *saya* moiety division and with the Water Mayor as the ultimate distribution authority, has been made compatible (or rather, parallel) with the one prescribed by official water legislation; together they constitute a form of legal pluralism, resulting in a dualistic power structure. On the one hand, there are the authorities elected in accord with current legislation, such as the president, vice-president, and treasurer of the Irrigators’ Commission. On the other hand, local authorities are governed by traditional institutions, whose functions have been inherited and strategically adapted from remote times onwards and are governed by the Water Mayor (Gelles 2000; Valderrama and Escalante 1988).

This power duality shows among others in the fact that the Water Mayor continues to have the same authority over water distribution as he had before, and he is elected according to the same traditional procedure. Today, Yanque villagers refer to this water authority as a *regidor* and no longer use the traditional Quechua term *Yaku Alcalde*. However, his main tasks have not changed, which are, among others, to attend all public meetings (carrying the traditional staff of office), to elaborate the sequence of the *mitación* and organize water distribution, and to direct the hydraulic communal work *faenas*. He also hires a “crawler” (*rondador*), a community member who from August 10 to January of the next year lives in a hut in the highlands, watching the channel on a daily basis to monitor its course and prevent theft and wastage of water (Gelles 2000; Valderrama and Escalante 1988).

Duality is also manifested in the consensus among the water users that the president of the Irrigators’ Commission does not intervene in water distribution unless requested by the Water Mayor, in case of a conflict or problem that cannot be solved. Whereas the authorities of the Irrigators’ Commission are in charge of collecting water fees, convoking meetings, and maintaining contact with governmental organizations, some tasks, such as the punishment of transgressions and infrastructure maintenance work, are coordinated together with the local Water Mayor. Common punishments, usually decided by authorities of the Irrigators’ Commission and the

Water Mayor during a water user meeting, are the imposition of a fine, of community work, or (after multiple, severe transgressions) cutting off their access to water.

This expresses how water user families strategically combine their local normative rules with state law in order to gain access to national resources and support programs. Importantly, however, they are not handing over local normative power. As a Yanque water user affirms, “Well, we established the Irrigators Organization as required by the state, because otherwise the state will not support us with infrastructure and funding—but we keep distributing the water according to our own customs” (personal communication, November 19, 2011).

In addition to a finely tuned system of water distribution, their maintenance of common property irrigation infrastructure and communal canal cleaning (*yarqa hasp`y*) are key arrangements shaping local water security. This usually takes place in August before the next sowing season. Participation is differentiated according to each water user’s land size. People with two *topos* (0.7 hectare) have to provide one working day, those with four *topos* contribute two days, etc. Another important water security issue in Yanque and other Colca Valley communities is their cultural relationship with *apus*, the water deities represented by snow-capped mountains, home of the water springs. This is expressed in rituals twice a year in which the mountains are venerated for providing the families with water. The first ritual is in August before the sowing season, and the second payment is due in the rainy season.

In sum, Yanqueños have interwoven local water security practices in their daily lives and livelihoods to assure reliable, secure water distribution by considering and combining complex agro-physical criteria such as water availability, crop type, growing altitude, micro-climate, plot size, and soil type with infrastructure maintenance tasks, mobilization of collective labor, financial means, and intellectual inputs as well as cultural-ritual support from deities. Together, these guarantee not only water security but also social and food security. Water rights in Yanque consist of multi-layered bundles: rights to use and withdraw; rights to operate, supervise, and manage; and rights to control (i.e., define, regulate, and represent water uses and users). We see how in Yanque and neighboring communities water rights and distribution practices become manifest in water infrastructure and technology, normative arrangements, and organizational frameworks to operate and maintain the local water control systems. Beyond local law in a strict sense, technology, organizations, culture, economy, and ecology also fundamentally structure water access and control security of the Yanqueños.

Nonetheless, these water security arrangements, embodied in local water management and control rights, have been challenged by the Peruvian state’s modernization policies geared towards formalizing local water rights through PROFODUA. In 2004, the government signed the *Pacto Agrario Nacional* (National Agrarian Pact or PAN), also called the “Green Charter,” written by most agricultural producer organizations—the National Board of Irrigation Users,

the Peasant Confederation of Peru (CCP), and the National Agrarian Confederation (CNA). The Pact outlines Peru’s new agricultural policies. One of its central issues is “sustainable use of natural resources and environmental protection,” by which PROFODUA was created under the (former) *Instituto Nacional de Recursos Naturales* (National Institute of Natural Resources or INRENA) (Guerrero 2006). One important argument used by officialdom for creating PROFODUA is the demand by the *Junta Nacional de Usuarios de los Distritos de Riego del Perú* (National Board of Irrigation Users) for the State to grant greater water use rights security (World Bank 2012). However, it would be accurate to say that the “Green Charter” was in fact a prerequisite and condition established under the controversial United States-Peru Free Trade Agreement (Rebosio 2005). PROFODUA’s main objective is to adapt and formalize water use rights of Peru’s existing agricultural users, assigning water use allocations based on available resources, and ensuring *efficient, equitable, sustainable* water use. The main benefits for peasants promised by PROFODUA are granting *legal water security* to irrigation water users, enrolling them in the Administrative Register of Water Use Rights (RADA) and assuring water access with *equal* possibilities for all users through a document endorsed by the Water Authority (MINAG 2009).

To acquire formalized water rights, Supreme Decree No. 041-2004-AG, formulated four requirements: (1) a completed sworn statement and proof of identity, (2) full payment of water tariffs for the last five years, (3) a document accrediting land ownership,⁷ and (4) compliance with formalization requirements matching water volumes allocated to users’ irrigation distribution blocs (hydraulic blocs).⁸ Yet, while these requirements might seem easy to meet at first glance, they became the main obstacles keeping a significant part of the Colca Valley communities and families out of the formalization process. Moreover, they constitute subtle ways to “correct” presumably inefficient and “backward” water use behavior (e.g., to pay for five years uninterrupted water tariffs) by any users who did manage to meet the criteria. PROFODUA rationality follows Peru’s modernist water policy, which views formal registration and administration of water rights under universalistic criteria as a rational solution to confront water scarcity. In the next section, we examine its aims to promote not only more efficient water use to reduce water conflicts but also to grant local users legal security.

Formalizing Water Use Rights: The Contradiction between Local and Legal Water Management and Security

Context-rooted adaptation, complexity, and diversity of local, communal water rights and security, as outlined above, clearly contradict formalized state water rights. One such contradiction involves fixed volume-based water allocation calculations. PROFODUA’s mandate validates the field characteristics of plots and the available amount of water in order to calculate the volume available per year.

This calculation is based on the area's average water demand (based on current and historical data), associated in turn with the Cultivation and Irrigation Plan. If the available volume is less than the water demand by particular land properties, the license grants the available volume. If the amount of water available exceeds average demand, the license grants the average demand instead of the potential supply. In such instances, there is theoretically a water surplus, which leads to the possibility of granting further water licenses. This leads to one of the main critiques by Yanque irrigators: as one water user complains, "They [PROFODUA] have done a mathematical modeling far from reality. In practice, we face water shortage, but on paper we have water surplus because they assigned too little water to us. In reality, that is not the case; in reality, we do not have water surplus at all" (personal communication, December 10, 2011). Consequently, if errors are made, there is the severe risk of over-allocating water rights beyond availability, which triggers inter-user conflicts and insecurity or the risk of under-allocation, creating water scarcity and, again, water insecurity.

According to several informants, PROFODUA officials used a 1992-1993 climate diagnosis of Colca Valley water demand which was available at the office of the Local Water Authority. Consequently, the demand-supply calculation is flawed because conditions in the Valley have changed importantly since the early 1990s due to climate change. Water users are convinced that the volume assigned to them was not realistic (fieldnotes, December 2011; see also Bury et al. 2013; Lynch 2012).

Actual water availability and demand do indeed play an important role in determining the amount of water that would be formalized by license. Yet, water availability is extremely difficult to quantify in Andean zones with highly diverse micro-climates, fluctuating rainfall patterns in diverse altitudinal zones, deficient (and non-existent) volumetric flow monitoring capacity in inaccessible mountain areas. Moreover, as Hendriks (2010) explained, many Andean irrigation systems do not depend on one, single water source but are compound systems fed by multiple sources (such as springs, rivers, groundwater, mountain lakes) with fluctuating discharges and properties. Even more difficult is quantifying water demand, first because water rights volumes would need to take into account the extreme diversity of Andean soils, multiple-cropping systems, etc., and second, because not just agronomic but especially cultural and social relations heavily influence water demand. Water rights, in practice, tend to be patterned according to social security prioritization (e.g., priority for the elderly, for subsistence crops, etc.) and follow local (not legal) rights acquisition mechanisms (e.g., acquiring water access rights according to each family's labor contribution to system construction and upkeep, according to locally established negotiation agreements among communities and/or families, according to historical/territorial property claims, or according to local rules regarding inheritance and transfer of rights). As one water user explains, "The technicians from PROFODUA arrived, did a geographical mapping of

our fields, made an inventory of our channels, and asked us: what is your land area? Then they assigned water licenses. Regardless of several features, such as soil type, crops, the social status of the water user, etc., they calculated an average amount of water totally outside our reality" (personal communication, November 28, 2011).

Indeed, important local characteristics of a "water right" have not been taken into account by PROFODUA while calculating the yearly water rights volumes, as Yanque water users emphasized: "The whole calculation has been done at the desk, far from reality" (personal communication, December 6, 2011). Guevara (2010) and Hendriks (2010) also explain how, in order to comply with the data requirements of official water rights administration and planning, a totally *fictitious* water reality is created.

Though fictitious and not corresponding with actual water flows and demands, this water world on paper does have a major impact in many communities and is forcefully materialized through the design of the above-mentioned hydraulic blocs and their water allocation and political-administrative and legal structures (Boelens 2009). Consequently, formalizing water rights according to these presumably universally applicable water availability/demand calculations and assumptions poses a high risk of generating and formalizing water distribution inequalities, leading to conflict and insecurity, especially in the months of greatest shortage. Yanque water users already observed these effects in the early stages of the national water rights formalization program: during the First National Meeting of Female Water Leaders in Trujillo, in 2007, members of Irrigators Commissions mentioned growing conflicts among water users resulting from PROFODUA's practice of over-allocation, legally granting fixed water volume rights in contexts of insufficient availability (Vera-Delgado 2011).

Yanque water users noted a second important contradiction in the inflexibility of water licenses, which cannot be transferred or adjusted within the hydraulic bloc. In practice, it is common among local families to exchange water shifts for one agricultural year among community members (not to outsiders), sometimes in the form of reciprocal exchange relations and sometimes receiving financial compensation. Here, water users do not refer to market-based transfer flexibility, based on tradable water rights involving economic cost-benefit calculations. Instead, water security for water users in Yanque means the possibility to adapt to changes in the social and natural environment, particularly in relation to agricultural production conditions, and to adjust their water flows accordingly as an integrated part of their livelihood strategies. Formalized water rights are far from dynamic, since any change—either in water volume or name of the right-holder—is linked to a set of bureaucratic procedures at the office of the Administrative Water Authority. The Authority is 260 km distant from Yanque, requiring almost seven hours travel by public transport.

A third contradiction concerns the generalized local practice of communal water management versus the water licenses' individualization bias and practices. PROFODUA

granted water licenses per bloc, yet indicated every single water user's name, their individual land size, and personal water volume, instead of indicating the water volume for the total number of water users in one single resolution (fieldnotes, November 2011). Yanque families mention one immediate impact: the economic value of individual land properties with water licenses increased since purchasing land without formal access to water is unattractive. Even though Yanque community members consider that showing a water license is not enough to become a legitimate water user because they require compliance with other contributions related to community reciprocity and mutual support, they witness a tendency in which economically more powerful people try to avoid collective obligations associated with maintaining their water rights. One irrigator explained how his (relatively wealthy) neighbor refused to engage any further in community irrigation obligations after getting his license: "He does not respect our customs anymore, but does only refer to his water license. The community knows we are right, but since then we are in conflict" (personal communication, December 15, 2011). According to Yanque villagers, granting water licenses with specific water volumes to individual irrigators, even when they operate in a bloc, has increased individualism and weakened communal water management and control rights. Individuals increasingly claim their rights as private persons, neglecting the fact that local notions consider individual water rights to be part of, and embedded in, collective community water rights and obligations. The latter, villagers explain, are a prerequisite for day-to-day management and long-term system sustainability. One Water Mayor explains how through formalization, increasingly "... our customs around water management are becoming distorted; before our water distribution was linked to Mother Earth and linked to our traditional water celebrations. Slowly, this is being destroyed with water licenses. Especially the young people start to think just on their own water access and are losing the communal vision" (personal communication, December 1, 2011).

The trend towards more individualization weakens important ingredients of a water culture based on agricultural rituals and customs, one being replaced by water organizational structures responding to state law and private rights. Claiming water access according to formalized individual water rights changes communal organizing for water towards a "technocratization" of water claims by those individuals, worsening management cohesion and system stability.

A fourth important contradiction concerns the market-based notion of water use efficiency versus the variety of local notions of social water use efficiencies. During the past decade, the Peruvian Government has promoted privatization of peasant and indigenous communities' natural resources to foster productivity. Boelens and Vos (2012) and Urteaga (2010) explain how the new Water Resources Law (2009) promotes "efficiency"; the National Water Authority is charged with issuing "efficiency certificates" to efficient users and operators. PROFODUA works with the same definitions and norms. These certificates accord priority to "efficient" users

for obtaining new water rights. While official discourse praises presumably highly efficient agribusiness companies and mining enterprises, Andean communities such as Yanque are less able to afford "modern" irrigation technology and fear the predictable outcome of these new allocation rules. Formalization introduces private rights combined with concepts based on market-based water use efficiency, targeting large-scale agribusiness enterprises that, according to Yanque villagers, will deprive peasant communities of their livelihoods.

These examples demonstrate both actual and possible consequences of water use rights formalization. Modernist water allocation policies tend to deny local mechanisms of activating water rights and claim to define who is a legitimate water user under state law and who is not. The policy fails to consider context-rooted irrigation knowledge and water rights practices, which—though not necessarily equitable—have been adapted to territorial conditions, incorporating social and food securities as well as infrastructural and cultural criteria for water security. Particular notions of efficiency, market orientation, and individualization in Peru's formalization project contradict local water security notions and create more water insecurity. As Yanque families fear, these new policies benefit more powerful water actors, who find themselves favorably positioned to claim new water rights and qualify as efficient market-oriented users.

While aiming to grant legal water security to water users in the Colca Valley, licenses hold little local legitimacy among peasant families. Until now, most water in the Colca Valley was not assigned according to water licenses, but several authorities have confirmed that in order to tackle water scarcity in Peru and to manage supplies more "efficiently," only users possessing official licenses will be granted access in the future (Boelens and Vos 2012; Urteaga 2010). This would leave the most vulnerable even more vulnerable, creating a scenario of water conflicts in the near future.

Formalizing Water Control Rights: The Shotgun Marriage between Official and Local Water Rights Systems

Earlier, we observed that local water rights frameworks are not autonomous but assume the presence of state law, defining themselves in relation to it. But the law also grounds its existence and survival in the active functioning of multiple, locally particular sociolegal repertoires. State law is formulated to regulate water control throughout national territories, whereas local practices are context-based. Should the state totally ignore local constructs of justice and rights, its legitimacy would likely be challenged in the view of community members. To avert this possibility, in countries such as Peru, customary law has been institutionalized and codified by legislators to supplement official law. It is ironic that official justice has often been able to survive *thanks to* the legitimacy and "acceptability" of customary laws that were incorporated into the law (Schaffer and Lamb 1981). As a result, both local and official rights systems see for themselves an existential

need for mutual “recognition” and strategically partner in the above-mentioned “shotgun marriage.”

As outlined above, contradictions between official and local rules in Yanque show how formalization of local water *use* rights according to outside allocation rationality leads to distribution problems. Similarly, programs formalizing water *control* rights foster de-contextualization and de-politicization of local rules and rights, making them part of a *general* formal system which takes away their perceived suitability, relevance, and “fairness” in particular cases. Customary sociolegal repertoires as developed throughout history by the Yanque community make sense only in their dynamic context, whereas national law demands “order and stability.” Indeed, there is a danger of freezing or even “fossilizing” systems of customary rights by incorporating them into relatively static, universalistic state law, in which local principles lose their functionality and capacity for renewal. Moreover, formalization often subjects local rights frameworks to expert-dominated redefinition or assimilation and marginalization when legally recognized (Boelens 2009). As a user stated, “The state did not consider our water rights customs. They said, ‘Here are engineers who studied in Lima, the system they have learned is more efficient, more economical, and consumes less water.’ But these are not the criteria applied by our community. Understanding our community and its context is essential for water rights security” (personal communication, November 27, 2011).

As Peruvian legal and administrative history has often shown, only those rights and principles that fit into official legislation and policies are recognized, thereby muzzling the complex variety of “unruly rules.” The shotgun marriage, then, is above all a tactical one, forced from both sides while making it also unhappy and extremely complicated. “Marriage conflicts” cast doubts on the effectiveness of official recognition policies in safeguarding customary water rights, and the recognition process that discursively aims to provide water security and legal backing to marginalized groups often reinforces the latter’s water insecurities.

As enhanced by Peruvian legislation and PROFODUA, Colca communities’ water rights recognition is not in opposition to but fits quite well into modernizing policies. These programs aim to “equalize” and create a world after their own image. In these days, for example, the neoliberal state does not simply “recognize” customary rights or local cultures but reconstructs them (Assies 2009, 2010), reproducing its own relationships by differentiating between “good” and “bad” local rights. Although such governance projects speak of decentralization and respect for pluralism, the recognition of local norms and rights must not impinge on the model’s foundations, that is, not interfere with state power and/or market rationality. They open up political space for local rights acknowledgement and, simultaneously, discipline those who occupy them (Hale 2002). Acceptance of the organizational recipes and water rights frameworks that are prescribed by Peruvian water authority and promoted by programs such as PROFODUA is further fostered by making these preconditions for obtaining credit and financial support for projects.

Legal recognition not only has repercussions for those so recognized, but it particularly impacts people or management systems that *do not have* this new legal backing: as a direct consequence of non-recognition, they are suddenly excluded from basic services and rights and become explicitly illegal. PROFODUA officials have used this as a threat towards non-complying water users. And this is not an imaginary scenario. Del Castillo (2004) outlines the injustices committed in the vis-à-vis officialdom Pampas Verdes project, similar to many other projects in Peru. Pampas Verdes uses the Caracha and Urubamba rivers’ water to irrigate 218,000 hectares in the Nazca and Arequipa regions, for which local rights of some user groups were recognized. By building two dams, the territories of seven peasant communities were flooded, but since the latter had only local rights that were not recognized, their territories were now considered state property and invaded as “no-man’s lands.” Legalization for some is often accompanied by *criminalization, neglect, and outright encroachment* against others. Legal formalization projects as in Peru may be particularly dangerous for local communities when particular local rights are allowed, legalized, and institutionalized *at the expense of most others.*⁹

In Yanque, partly because of such dramatic experiences elsewhere in Peru and partly because of mistrust, most water users have engaged in subtle strategies of resistance. Simultaneously, they have remained vigilant about the conditions underlying their version of the “shotgun marriage” and the inclusion of (parallel) state institutions in their water control affairs—important decisions remain firmly in the hands of the community. Informants expressed the fear that water will be privatized once the licenses have been granted, that together with the water licenses water tariffs would increase, and that private companies would take over local management and replace the Irrigators’ Board. From such fears, they resisted PROFODUA’s mandates by not giving correct information regarding land properties, presenting incomplete documents, or by simply not showing up.

Communities like Yanque express opposition to an official legal-political system that preaches equality for all but uses this discourse to punish *deviance* from formal mandates while deepening economic inequality. Yanque water users also know well that formally adopting official nomenclature and water control patterns—expressed in their parallel water administrative structure—does not necessarily mean conforming to them. In many instances, this is the case for both water control rights and water use rights; as an irrigator phrased it, “The water distribution is still the same. With or without water license, we receive our water according to our customs and traditions and according to the decisions made by our Water Mayor. At the end, it is a document that we have been given, and it is only kept in our office—it is not applied at all” (personal communication, December 2, 2011). In Yanque, recourse to formal law and the use of official frames of organization is often a conscious strategy. Under the disguise, shield, and apparent adoption of outside rules, rights, and organizational constructs (Boelens 2009; Scott 1990), local rights and norms are developed and applied that (intangibly) act against official containment and control.

Conclusions

This paper debunks the widespread policy myth that formalization of water rights will necessarily enhance the water security of local communities and families. Our plea is not against formalization of local rights in general; legal protection may often prove to be crucial to defend marginalized water use groups against powerful intervening actors. Rather, this paper challenges both the state- and/or market-biased notions of allocating individual water use rights and the incorporation of stereotyped “customary law” into policies that leave fundamental power contradictions unchallenged. This has often led to subordinating local rights repertoires and criminalizing the wide variety of non-recognized norms and rights, thus expanding local water insecurities.

Similar to other mainstream water governance discourses, the water security debate is often depoliticized by naturalizing common goals while excluding the implicit values, ends, and supposed material interests of the state and market agents from policy discussions. State and market institutions require a predictable, uniform playing field for water governance; thus, local water rights autonomy—including water security conceptualizations such as those of Yanque water users—tend to be a primary obstacle for formal rulemakers and intervening agents. Their multi-faceted and dynamic character makes them intangible and un-recognizable in positivist bureaucratic and liberal frameworks. Commonly, the collective and territory-bound features of water rights, their hybrid origins, enormous diversity, and integration in community security structures make them difficult to reconcile with the ideals of centralist control and modernist property regimes.

Ironically, officialdom cannot afford to entirely neglect local water rights systems, so there is a forced engagement: overall state law—threatened to be unmasked as illegitimate—bases its survival on the ability of local rights orders to adequately respond to local needs and contexts. To avoid losing legitimacy in the eyes of a heterogeneous society, and also in response to demands and resistance by peasant and other marginalized water user groups, there are many cases in which national governments have expanded their concept of unique, omnipresent, national law and policy, as in the case of Peru. Commonly, the state has incorporated some elements of local rights systems into its melting pot of policy in ways that do not challenge the legal and power hierarchy. Such efforts to complement official policy imply simultaneous recognition *and* negation of diverse local water rights; they are not simply responses to demands by subjugated groups for greater autonomy but also facilitate control by the water bureaucracy and/or help neo-liberal sectors incorporate local water rights into the market system.

The case of Yanque in Colca Valley has shown that the dynamic manifestations of local water rights and security systems cannot be codified into blanket legal frameworks without jeopardizing their foundations. Local rights include a broad range of diverse (not necessarily equitable) practices that constantly reorganize their rules precisely to maintain their capacity to solve problems. Recognition policies often

create essentialist constructs that do not represent this dynamic character but point toward transformation of complex reality to make users’ water behavior tangible. Depoliticized governance models and mainstream water security discourses differentiate those local rules that are “rational” from those that are “inefficient.” By promoting “best practices” and “good governance” models, modernist water institutions aim at creating a water world after their own image. As in Yanque, many communities and families react to such intrusions of formal policy. Rather than simply acquiesce to formalization programs, they strategically adopt, selectively adapt, or demand legal recognition of greater autonomy to develop their own management rules. Like Yanque, many water user communities defend their water use practices, rights, and decision making frameworks to keep water security from being dictated by outside institutions, powerful agents, and markets.

Notes

¹De Soto (2000:174-175) argues that by (uni)formalizing property relations, the West historically has been able to overcome backwardness: “Shifting the recognition of ownership from local arrangements into a larger order of economic and social relationships made life and business much easier. Formal property freed them from the time-consuming local arrangements inherent to closed societies.”

²The hierarchical administrative structure for water management, formalizing water allocation and distribution modes, for instance, is based on the precisely prescribed Irrigation and Cultivation Plan calculations (Hendriks 2010). The Law also anchors a hierarchy of three different water use rights as keys to formalization: (1) the “license” (a permanent water use right), (2) the “permit” (a temporary use right in times of water surplus), and (3) the “authorization” (a use right related to specific hydraulic projects). The PROFODUA program concentrates on establishing licenses.

³Some parts of the theory sections of this paper are based on our chapter in Lankford et al. (2013).

⁴Water rights are “authorized demands to use (part of) a flow of water, including certain privileges, restrictions, obligations, and penalties accompanying this authorization, among which a key element is the faculty to take part in decision making about system management and direction” (Beccar et al. 2002:3).

⁵Unless otherwise referenced, the case data examined here come from own fieldwork, carried out in 2011.

⁶Our interviews, however, indicate four main reasons why the Valley’s water users could not meet the five years tariff payment requirement. First, land (non)cultivation is rotated to increase fertility, and water users do not pay tariffs during non-cultivation periods; second, most water users do not follow the bureaucratic procedures informing the Local Water Authority (*Autoridad Local de Agua* - ALA) about their non-cultivation cycle to get exemption of tariff payments during this time; third, in some cases, the Irrigators Commission only recently consolidated (e.g., in Ichupampa) and did not collect tariffs for five years in a row by the time PROFODUA arrived; finally, many land owners who migrated to larger cities rented out their plots and could not show any payments made by the water user tenants.

⁷Approximately 30 percent of the land owners have an individual land title, formally issued and registered in the public records. The remaining 70 percent have no or other documents—sale, inheritance, wills, notarial

acts or grant documents, etc. (Agreda and Mendieta 2007). In many cases of inheritance, there are no written testimonies, only verbal agreements, which usually are being respected by all community members.

⁸Irrigation blocs are hydraulic subdivisions of the Irrigators Commissions command area, based on the water source and the hydraulic structure. They are compact units, generally consisting of several hundreds of hectares, watered by the common water intake. Commonly, the State authority aims to grant each bloc, water for all its water users (Guerrero 2006).

⁹Often, in societies with structural inequalities as in Peru, dominant classes aim to naturalize their water law interests and rights framework as “Justice,” using the political-legal system to respond to particular rights conflicts that challenge their position, rather than addressing the basic class, gender, and ethnic contradictions underlying these conflicts. Thus, often, as part of the shotgun marriage, temporary (or ad-hoc) changes are introduced—to safeguard the structure of domination and its rule-making and -enforcing legitimacy—but without addressing primary contradictions involving reproduction of the societal class system. Fundamental contradictions remain, which soon triggers new conflicts—as ongoing water conflicts demonstrate.

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