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Chapter 2

MAKERS OF WATERSCAPES: WATER ABUNDANCE, DISCOURSES AND THE MARKET IN THE ICA AND PAMPAS BASINS, PERU

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ABSTRACT

In this chapter the author analyzes how the upstream Pampas basin (Huancavelica) was socially constructed as a water-abundant region to justify building a diversion canal that would conduct water to fulfill the increasing water need for agro exporting Ica. While surface and ground water users downstream agreed on the necessity to build this infrastructure, the upstream communities contended that it would hamper

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their livelihoods and ecosystems. The article explores the material and symbolic aspects of this water conflict in central Peru.

It is of course much easier to build a dam
or drill deep for water than to undertake
the kind of education and social mobilization
that the transformation [of thinking] calls for;
but that way lies disaster.
Ramaswamy R. Iyer (2008).

INTRODUCTION

Since the 1950s, Iqueños in the central coast of Peru have contended that the upstream basin had the water they needed for agriculture. At that time, the Choclococha canal that conducted water from the upstream Pampas river basin had disastrous consequences for upstream peasant communities located in Huancavelica, whose ecosystem and livelihoods were dramatically transformed. Despite these facts, sixty years later diversion canals are still an option to fulfill the increasing water need for agroindustry in Ica. As many other water conflicts currently triggered by the increasing global search for commodities, this one particularly demonstrates that water is a contested terrain because it not only entails competence on physical resources[1], but also implies symbolic contests to define who has better grounds for water access. This paper deals with the way ideas on water scarcity and abundance in the Pampas and Ica basins construct waterscapes. Drawing from Political Ecology and Anthropology, here I argue that mythical construction of Huancavelica as an abundant water region is aimed at using water from the upstream Pampas basin to irrigate lands in Ica for agro export.

Research for this article was conducted during 2011-2013. Data was collected from first sources in Huancavelica and Ica through informal and structured interviews to water experts, regional authorities, engineers, local water leaders and farmers. I also relied on field observation and recording field notes in Huancavelica. Similarly, I went through secondary sources, such as archival and statistical data found at the regional Office of the Ministry of Agriculture and the Carhuancho community, both in Huancavelica. I also reviewed related literature. Although in this paper I focus mainly on some

[1] See Boelens and Zwarteveen, 2003; Boelens, et al., 2005; Mollinga, 2008; Boelens et al., 2010.

peasant communities of Huancavelica located in the upstream Pampas basin, the results leads us to conclude that the basin approach is necessary to understand how political, social, economic, ecological, and technological changes in the upstream are intrinsically related to transformations downstream, and vice versa.

Here, I first draw on the anthropological and political ecology study of water scarcity and abundance. Secondly, I describe the water struggle between Ica and Huancavelica departments (downstream and upstream basins) that followed the mythical construction of the upstream as a water abundant region wherefrom to transfer water for agroindustry coastal lands. Then, I analyze how discourses on water scarcity and development downstream are contingent to the discursive crafting of water abundance. Here, I focus on the state intervention in the process of myth-making. Finally, I offer some conclusions regarding the role of the state in generating the conflict between Ica and Huancavelica.

WATER SCARCITY

Water scarcity and abundance are produced by particular material-symbolic dynamics driven by local, national and international forces with political and economic power differentials that contend different representations, cultural practices and politics regarding water. In what follows, I deal with ideas of water scarcity and abundance to unveil how they are shaped by cultural practices, economic and political interests to determine specific ways in which water should be distributed in the specific area of the Ica and Pampas basins.

Johnston (2005) considers that water scarcity may occur at any level of supply or demand. Accordingly, it depends on several aspects that are not only material. The fact that it can be socially, culturally and politically constructed together with the fact that it depends on several factors such as climate, soil, etc., contributes to its inherent contingency. As such, its importance lays not only on its material aspect but also on the fact that it "might reflect the economic ability to pay for water, or the customs, social conditions, and relationships that privilege access to some while withholding access from other" (Johnston 2005: 136). Therefore, water scarcity is "a consequence of social relationships and historical and contemporary transformations within the struggle for water control" (Ahlers, 2008: 8).

For Political Ecology "such inequitable hydro-social configurations" are "fundamentally socially produced" (Swyngedouw 2009: 57)[2]. Historically, water scarcity has been used to foster particular political and economic interests (i.e., market opportunities for investment, energy scarcity to develop hydroelectric power, water mismanagement to make necessary the development of new administration and policies that allow public subsidy on private sector) (Bakker 2000; Johnston 2003, 2005; Ahlers 2008). Johnston (2005) criticizes the alarming voices within the United Nations System and International Financial Institutions, such as the World Bank and the International Monetary Fund, that raise the issue of water scarcity to promote a particular recipe to overcome the urgency: "At times, the scarcity is created as a by-product of resource decision making that prioritizes one use over another. At other times, the perception of scarcity is manufactured to fuel and further various political agendas" (Johnston, 2005: 140).

Based on case studies, Bakker (2000), Ahlers (2008), Mehta (2003, 2007), and Budds (2008, 2012) demonstrate how scarcity is socially constructed to benefit certain political and economic processes. Bakker (2000) describes how the 1995 drought in Yorkshire, England, was the perfect excuse to re-regulate and privatize water. Corporate mismanagement of potable water –she calls it "governance failure"- set the stage for a re-regulation that obliterated the state and empowered the market. Ahlers (2008) shows how drought in the north of Mexico was the result of an increasing water demand due to commercial agriculture, the extension of the garment industry (*maquiladoras*), and other uses. Due to the withdrawal of a state subsidy, peasants felt severely the drought. Mehta (2007) demonstrates how in the peninsula of Kutch in the district of Gujarat, India, scarcity is usually attributed to low rainfall and frequent droughts, for which decision makers relied on the Sardar Sarovar Project, a large multi-dam project constructed on the Narmada river for irrigation and hydroelectric purposes. Scarcity was discursively naturalized to respond to the interests of powerful actors interested in the construction of the dam. This not only obscured the anthropogenic nature of droughts due to increasing water consumption, but also concealed historical local responses to deal with temporal droughts. Finally, Budds (2008, 2012) analyses La Ligua valley located in central northern Chile, to prove how scarcity is socially contested. While those living on the valley floor and in the downstream valley assert that scarcity is caused by users located in the upstream valley (who use

[2] See also Swyngedouw, 2006, 2007.

extensively ground water to irrigate their lands for export agriculture), the later think that water scarcity is impossible in Chile. As usual, a reservoir is seen as the solution to scarcity. Here, the framing of scarcity as a result of hydrogeological conditions obscures the fact that is was caused first and foremost by increasing water consumption for agricultural export.

The case analysis here shows that the particular social construction of water scarcity in Ica is intrinsically connected to the social construction of water abundance in Huancavelica. During the late 1990s, PETACC[3] and other stakeholders in Ica proposed a hydraulic model similar to the one that overcome the 1950s' water crisis in Ica. The canal was supposed to transfer water from upstream Huancavelica to downstream Ica. Little consideration was given to the actual water demand upstream, eventual impacts on the ecosystem, and/or future water imbalances. Here, I argue that both water scarcity and a convenient "water supply approach" were part of the discursive construction of water abundance upstream to justify the intervention to transfer water to Ica. The discursive game emphasized the importance of supplying water to Ica, a burgeoning agricultural region that will bring about 'development'; and, simultaneously, portrayed Huancavelica as a water abundant "*terra nullius*". In the next section, I will trace the relationship between water scarcity, development and discourses.

WATER SCARCITY, DEVELOPMENT AND DISCOURSES

The political manufacture of water scarcity in Ica and water abundance in Huancavelica recalls Ferguson's (1994: XIV, my italics) argument when analyzing the development industry in Lesotho:

> "Development" institutions generate their own form of discourse, and this discourse simultaneously constructs Lesotho as a particular kind of objet of knowledge, and creates a structure of knowledge around that object. Interventions are then organized on the basis of this structure of knowledge, which, while "failing" on their own terms, nonetheless have regular effects, which include the expansion and entrenchment of bureaucratic state power, side by side with the projection of a

[3] PETTAC is the acronym of Proyecto Especial Tambo Ccaracocha. It is a state technical institution in charge of the Pampas Project. It was created in 1990 as a decentralized institution of the National Institution for Development (INADE).

> representation of economic and social life which denies "politics" and, to the extent that it is successful, suspends its effects.

Political ecology has explored the intermingling relationship between development and water[4]. In talking of dams, Baghel and Nusser (2010) mention that just after political independence South Asia postcolonial governments envisioned the construction of dams as a token of modernity[5]. It was assumed that the domination of nature legitimized modern governments. Nowadays, they state, "such gigantic technological hydroscapes continue to symbolise human dominance over nature, lauded as they are as icons of modernity and national prestige" (Ibid.: 231).

The structure of knowledge created around the idea of water scarcity may contribute to create perceptions of scarcity (and abundance) which influence social practices and political decisions that aim to transform waterscapes in order to achieve "development". Historically, hydraulic infrastructure, as a response to discursive water scarcity, has been pretty much linked to development. The construction of discursive devices to socially legitimize the necessity of water infrastructure to achieve progress contributed to processes of state formation[6]. From the 1980s on, neoliberals associate development to the boost of the private sector and the market economy for which the state should provide the foundations (i.e., hydraulic infrastructures).

This does not mean that water scarcity is something unreal[7]. Undoubtedly, it can have catastrophic consequences. Social construction of water scarcity point basically to two social phenomena that might be useful to distinguish: relative or absolute scarcity can have anthropogenic causes and can also be discursively constructed[8]. Here I contend that water scarcity (and abundance) as an idea and a discursive device (Nader 1997) could have similar catastrophic consequences, not only because it allows the transformation of nature for "progress", but also because it could endanger those who are not favored with such deeds[9]. Representations deployed through discursive strategies may generate effects of truth with political and social

[4] Escobar 2010, Martinez Allier 1998, Arrojo 2010, Swyngedouw 2009, Lynch 2013.
[5] See also Reisner 1993, Khagram 2004, Prakash 1999.
[6] Wittfogel 1957, Reisner 1993, Swyngedouw 2015.
[7] See Baghel and Nusser (2010) for an analysis of the Bakhra command area where a new irrigation infrastructure was unnecessary due to the existence of canals. Here, water scarcity was completely made up.
[8] See Swyngedouw 2009.
[9] See Wali 1989.

consequences[10]. In fact, "while physical hydrological conditions can produce water scarcity, the discourses of 'scarcity' and 'abundance' are used to mobilize different […] interests" (Budds 2008: 72), that are usually detrimental to some. In this regard, "Particular attention […] needs to be paid to social power relations (…) through which hydro-social transformations take place. This would also include *the analysis of the discourses and arguments* that are mobilized to defend or legitimate particular strategies" (Swyngedouw 2009: 57, my emphasis). Here lies the importance of an analysis of discourses that contribute to understand how "discursive strategies […] create 'effects of truth'" that transforms reality (Alonso, 2006: 35). In the next section, I describe the upstream basin in the Huancavelica department.

HUANCAVELICA AND THE PAMPAS BASIN

It is interesting to notice how things have turned around for the people of the Ica and Pampas basins. While the Ica valley has long been known as an agricultural region where particularly wealthy aristocratic families led commercial agriculture (Ore 2006), until the 1970s in the department of Huancavelica located in the upstream basin, lands between 4,000 and 5,000 meters above sea level were used only for self-sustaining agriculture and herding. This imbalance created a specific power relation between downstream and upstream that transcended the material aspects of it. From 2000 on, transnational and mixed agribusiness companies established huge plantations of asparagus, vines, and other export crops in Ica (Damonte 2011). The extensive use of ground water pressure by export agribusiness (Muñoz 2011) is transforming both the landscape and the aquifer, which is running out of water (Ore, et al. 2010, Progressio 2010). This picture is changing the historical power imbalance between these regions because as water becomes a valuable item power is in the upstream basin, and those who had meager lands with plenty of water are now seen as holding the most precious good.

Huancavelica is located in the middle Peruvian Andes. With a population of 475,693 inhabitants (INEI 2009), and 309,262 rural population, it is the poorest department of Peru with a poverty incidence of 66,1%. It was severely hit by the political violence of the 80s and 90s, which has significantly

[10] See Alonso 1988, Mitchell 1991, Urteaga 2012.

influenced its meagre development[11]. Huancavelica has a complex and diverse geography, with five natural regions going from the 1,900 to the 5,000 meters above sea level. Only the Mantaro basin has thirty ecological areas. Main activities are subsistence agriculture and herding, with crops that are cultivated at the highest altitudes[12]. Land owners are Peasant Communities[13] and small farmers. Legally recognized peasant communities reach 573, whereas those with land deeds are only 505. Pastures cover between 27% and 37% of the regional territory[14] (Aquino 2011: 69). Herding is performed in the Puna, where wetlands ecosystem makes possible to raise cattle, sheep, pigs and goats but especially *llamas* and *alpacas*, whose production reaches 473 thousand animals. For this reason Huancavelica is regarded as the third producer of *alpacas* and *llamas* in Peru (Ibid.).

Huancavelica shares river basins with other regions. Its political territory is not only part of the Pampas river basin (Tayacaja, Huancavelica and Angaraes and the northeastern zone of the Castrovirreyna province), but also of the Ica and the Mantaro river basins. This geographical fact is an important component of a historical conflict that worsened as Ica has run out of water. Quantitative data about water supply in the shared basins of Huancavelica are scarce, at the best, confusing, unreliable, and outdated[15]. Nonetheless, annual rainfall has been calculated on 683.9 mm, of which 50% evaporates, 10% infiltrates and 40% is water runoff. Huancavelica also has 4003 lakes in the Atlantic side and 225 lakes in the Pacific area that feed six basins[16]. No information on water flow exists.

Contrary to the idea that Huancavelica is a water-producing region, not all provinces of Huancavelica enjoy water abundance. In some areas such as

[11] It has attracted many State social and development programs funded by international cooperation agencies and the state.

[12] Products, such as green peas, potato, maize, coffee, avocado, peaches, orange, lemon, barley, broad bean, and wheat.

[13] Peasant communities are indigenous communities that were legally recognized since early 20th century. Legally, they have been named differently, from "comunidades de indígenas" to "peasant communities".

[14] Although, according to Postigo (2005: 9), pastures cover 76.3% of Huancavelica's surface.

[15] This has happened as regards to hydrological balances and water quality, with serious consequences because the State continues granting water Rights on water that actually is not available, and the problem is that the State cannot prove that the place does not have water anymore because it lacks scientific evidence. Dourojeanni (2011) asserts that "information is necessary for water Management at every level", but the problem remains that the information and registration systems are weak, do not exist or are obsoletes.When scientific information does exist, the State does not use it for decision making.

[16] De La Cruz 2010.

Castrovirreyna, Acobamba, among others, water is scarce even for human consumption, and farmers have had to rely on rain fed agriculture[17]: "Water scarcity generates conflicts. The upper part of Castrovirreyna and Huaytará has claimed Ica's water users' organization should pay them a water fee and share water with livestock and fishing areas" (Postigo 2005: 15).

In spite of this critical reality, mythical construction of Huancavelica as a water abundant region forms an important aspect of the water conflict with Ica. Actually, the idea of absolute scarcity downstream and abundance upstream, together with lack of hydrological information has contributed to the development of projects to divert water from Huancavelica to the Ica valley since the 1950s[18]. The problems this infrastructure has posed for the environment and highland indigenous communities in Huancavelica are manifold[19]. Transformation of nature led to transformation of communities, who had not only to relocate their town and dwellings but also to develop new economic activities that did not depend much on the use of wetlands flooded by the Choclococha system. The construction of the Ingahuasi collector canal, which was part of the Pampas project[20], would risk Carhuancho peasant community, as well as wetlands ecosystems that allow *alpacas* reproduction. All this configures a critical water scenario for several highland communities in Huancavelica as we shall see next.

WATER CONFLICT BETWEEN ICA AND HUANCAVELICA AND THE STATE INTERVENTION

Current water conflicts between Ica and Huancavelica departments are mostly the result of, on one hand, a burgeoning agribusiness development and an aggressive and uncontrolled water exploitation in the Ica basin[21], and, on the other hand, the unrelenting commercialization of *alpaca* fiber that

[17] Augusto Olivares Huaman, vice president of the Regional Government of Huancavelica. Personal communication, February 2012.

[18] Special Project Tambo Ccaracocha (PETAC in Spanish) has annually reserved approximately 492MMC water from the Ccaracocha and Choclococha lakes and tributaries located in Huancavelica to irrigate Ica valley for agricultural export (Macassi 2009).

[19] See Quispe 2008b, Macassi 2009.

[20] The "Pampas Project" includes several hydraulic works, one of which is the Ingahuasi collector canal. It is part of the so called "Choclococha Desarrollado". See Ore 2010.

[21] Oré 2006, 2011; Muñoz 2011, Bayer 2007, Progressio 2010, Pastor 2007, Macassi 2009, Quispe 2008 y 2010, Cardenas 2012, Guevara 2016.

demands an extensive use of water upstream for pastures. Generally, when a water user physically controls a water source it is difficult for users in the middle or downstream basin to balance the situation (See Iyer 2008, Budds 2008). This is not the case in the history of Ica-Huancavelica water conflicts because even though Huancavelica physically controls the sources of water, political control has mostly remained on Ica's side.

Historically, water scarcity in Ica has been one of the main concerns of both national and regional governments. Since 1966 approximately 23 national and regional bills have passed to control water "crises" (see Annex N° 1). Despite evidences of the aquifer vulnerability, the promotion of export agriculture during the 1990s led the government to pass *Decreto Legislativo* N° 653[22], and *Decreto Supremo* N° 048-91-AG to promote ground water use in Ica. Extensive groundwater use for agroindustry during the 1990s raised concerns for aquifer depletion. The *Autoridad Nacional del Agua* (ANA) has found that "water demand largely outdo water supply (surface water and the exploitable reserve of groundwater)" in the Ica aquifer[23]. This explains why 17 of the 23 bills to control the water crises were passed from 2000-2011[24]. A local water officer in Ica complained: "legal rules differ from reality: on one hand groundwater wells are banned, but on the other investment is promoted".

State concern for Ica's water condition is closely linked to Iqueños' political connections with different governments. In 1990, during Alberto Fujimori's first term, the then Ministry of the Presidency launched a Special Project called Tambo-Ccaracocha (PETACC) by *Decreto Supremo Nº 021-90-MIPRE* and *Decreto Legislativo Nº 556*, which was issued the last days of Alan Garcia's first term (1985-1990), when Rodolfo Beltran Bravo was Minister of Presidency.

In March 2011 an asparagus exporter who I interviewed commented of then minister of Agriculture, Alfredo Benavides: "he is one of "*us*", he is from Ica. That is why Proinversion[25] will prioritize any activity coming from Ica, from rio Seco." During Benavides's term in office the project referred to by

[22] Ley de Promoción de las Inversiones en el Sector Agrario.

[23] Current administration of the Autoridad Nacional del Agua (ANA) has devoted a special attention to a diagnosis of the aquifer depletion in Ica. For more information, see http://boletin.ana.gob.pe/main.php?K=8&id=104.

[24]Coincidentally, ANA states that the groundwater exploitation in the Ica aquifer went up from 2002. In the Villacurí aquifer water table went down 1.5 meters per year particularly since 2002. In the Lanchas aquifer the exploitation of groundwater doubled from 2005 up to now. See: http://boletin.ana.gob.pe/main.php?K=8&id=104.

[25] Proinversion is a public institution in charge of investment promotion.

the exporter was approved. The exporter remarked that the recently elected regional president had also committed himself to the Pampas project and had declared a state of "water emergency" in Ica. Finally, he was sure that then president Alan García (2006-2011) would pass a *Decreto Supremo* to waive all the legal obstacles for the development of the Pampas project before he left office. And so he did[26].

The Pampas Project was aimed at building infrastructure in regulated waters of the Ccaracocha and Choclococha lakes, located in Huancavelica, to increase irrigated water supply for agricultural development in Ica. The works included increasing the storage capacity up to 100 MCM of the Choclococha dam (by 6.5 m high and 320 m long), building 73 kilometers of the collector canal Ingahuasi, which maximum capacity is 15 m/s, rehabilitating 11.678 Km of the Choclococha canal and 467 m tunnels of the Choclococha system, training of water users to guarantee the sustainability of the project, and the infrastructure maintenance plan (Quispe, 2008a; Macassi, 2009).

From August 2003, without due consultation to Huancavelica regional government and stakeholders, PETACC, the institution in charge of the Pampas project, was transferred from the Central Government (INADE) to the Regional Government of Ica[27]. From then on, it has been managed by a Directive Board with representatives from the Central Government, the Ica Regional Government and the 'civil society'[28] of Ica. Peasant communities in Huancavelica unmistakably thought that their waters were being ceded to Ica by decree. Indeed, 22 days before president Alejandro Toledo's[29] end of term, in July 6th 2006 Manuel Manrique Ugarte[30], Ministry of Agriculture at that time, issued a Decree[31] whereby through the construction of the "Ingahuasi collector canal" a water volume of 52,00 MMC from the Ingahuasi sub basin would be reserved for two years in favor of PETACC (Ica Regional Government). Not only did he reserve a considerable water volume for Ica, but

[26] A lawyer from Huancavelica, Ivonne Macassi, asserts: "The Garcia administration had a political commitment to the Integral Project Choclococha Desarrollado. To the end of his term, he passed two decrees Nº 001-2011 and Nº 002-2011 bypassing environmental regulations. Luckily, they were considered illegal." Personal communication. October 2012.

[27] On the basis of the *Decreto Supremo Nº 021-2003- VIVIENDA*, the *Ley de Bases de la Descentralización*, and the *Ley Orgánica de Gobiernos Regionales*.

[28] See Ferguson (2006) for a critique of the term civil society.

[29] Alejandro Toledo was president of Peru from 2001 to 2006.

[30] Manrique issued the Decreto Supremo 22 days before the end of Alejandro Toledos' administration. He was a member of the Logia Masonica. In 2007, the Ica's branch of the Logia Masonica incorporated Manrique as a member.

[31] Decreto Supremo 039-2006-AG.

the day before through *Resolución Ministerial* 0586-2006-AG he also changed the limits of the Ica Irrigation District, with two subdistricts Ica and La Achirana-Santiago de Chocorvo, in order to include the Choclococha system for "trans-boundary purposes".

The end result of the hydraulic project was clear for huancavelicanos, particularly herders from upstream communities: "this kind of engineering works only responds to the agricultural needs of the coast, not to the highland communities' water use for herding, neither to the necessities of the middle and upstream basins" (Macassi, 2009: 12). State intervention openly supported Ica's water need for agribusiness by legally approving the construction of the Pampas project to the detriment of local upstream communities. What interests me here is the assemblage of discursive devices in order to accomplish the intervention. In the next section, I turn to the way water scarcity is socially constructed by different water users in Ica.

MAKING UP WATER SCARCITY IN ICA

Surface water users are the only ones who blame agricultural exporters of depleting the aquifer for greed. The president of one sector of La Achirana canal clearly states: "By enlarging agricultural frontier, agribusiness has worsened the water problem because their big farms use wells 24 hours a day. That is why the level of the wells has diminished". A resigned leader of La Achirana canal explains "surface water users blame agro-exporters[32] of diminishing water level because they use water 24 hours…but it is the way it is, in the end capital is the one who rules".

Agroexporters rarely explain Ica's water scarcity in terms of the extensive use of groundwater for agroindustry. The ultimate cause of water scarcity for them is inefficient water management, which they think characterizes surface water users. A leader of the JUASVI, organization of agro-industrial groundwater users, says: "Inefficiency of the Surface Water Organization (Junta) passes on the aquifer recharge. The problem is inefficient use of surface water that passes on the depletion of the aquifer. Agro-exporters are not the only ones to blame in this conflict, but also the inefficient management of surface water users". Actually, they do not complain from water scarcity because they know technology can solve the problem within their farms: "each

[32] Here, he meant agro exporters from Pueblo Nuevo, where there are 121 groundwater wells.

company should store water…the solution to the problem is here. 'We' must build recharge wells. Agrokasa, for instance, has invested S/.70,000[33] soles in its project. 'We' are talking of a renewable resource. Water scarcity is not a problem for agro-exporters." Likewise, a representative of the Beta agroindustry farm explains:

> "Scientifically, the problem is not water scarcity but inefficient water management. For example, Ramón Llamas points out: "if I use water to produce something that is not profitable, then I am using water inefficiently". Why shall I use expensive water to produce an inexpensive good? Then, *the problem is not water scarcity. Water should just be well managed*"[34].

For them no evidence exists to assert that there is a water scarcity problem in Ica; "there is not scientific data", they state[35]. This is consistent with their argument that an important volume of water flows to the sea: "We have gone to the tale of the Ica River and we have verified that plenty of water gets lost in the sea"[36]. They argue that falling water table has created the illusion of water scarcity in Ica. Scientific evidence is missing to demonstrate that water is scarce, they think. For them, the situation is not dramatic[37]. Among one of the many technical solutions they manage is recovering water flows to the sea[38]. But the fact is that some users really feel water scarcity. Surface water users who have been impacted by the aquifer depletion are precisely those who cannot afford technological improvements. An officer in charge of surface water says: "there is no water availability; each year the level diminishes one meter: the 5th and 6th sectors (of La Achirana) seldom irrigate. There is even one peasant community, Señor de Luren, with 3000 Ha who wants to irrigate 800 Ha with excess water but can't. Pueblo Nuevo, Pachacutec and Tate are critical zones in terms of water availability". Los Aquijes, Pueblo Nuevo and Santiago are the most affected Ica districts because of falling water table[39].

Blaming each other for water problems in Ica turned out to be a deadlock, so groundwater (export companies) and surface water users (farmers) decided

[33] Approximately, $30,000 dollars.
[34] Emphasis added.
[35] Representative of the JUASVI.
[36] Representative of the JUASVI.
[37] Representative of Fundo Beta.
[38] For instance, Agricola Manuelita agroexport company.
[39] Engineer Mendoza, in charge of ground water.

to face the situation together. During the last years, Río Seco, La Achirana and Yacurí water user organizations have been gathering together to develop projects to avoid water collapse in Ica[40]. This does not mean that agro-export companies would abandon technological projects in their farms. By diversifying solutions, agro-exporters face relative scarcity while at the same time avoid confrontations with surface water users, who are the real victims of water scarcity.

Ica regional government encouraged this initiative, for it could get more allies to propose a definite solution to water scarcity and present a unified regional front in its negotiation with Huancavelica. According to regional authorities in Ica water will deplete at any moment for water scarcity is a reality[41]. Although they identify different causes[42] of water scarcity, they all agree that the development of Ingahuasi project in the Pampas basin could solve it, as happened with the Choclococha canal during the water crisis in the 1950s: "between 1959 and 1970, surface water was exhausted in the coast due to raining problems. Those years the Choclococha Developed Project and the Pampas Project came up"[43]. A leader of La Achirana says: "we overcame the 1950s water crisis by developing an extension of La Achirana canal"[44]. A medium-sized farmer agreed upon the project: "people move the river several times"[45]. Ica's authorities strongly believe that water should be transferred from Huancavelica to Ica and the canals should be extended[46].

Under a water supply approach, the Juntas of La Achirana-Santiago de Chocorvos, La Achirana (surface water) and JUASVI (groundwater) contend that PETACC should develop the Pampas project. As the goal is to expand the agricultural frontier, this project is an important part of the plan. A leader of the Junta of La Achirana explains: "due to the deficit of the Aquifer we have to make infrastructural projects to bring in more water to Ica. The Junta of groundwater users and the Juntas of surface water users are united to face the

[40] Junta de Usuarios [Water Users Organization] La Achirana.

[41] For instance, regional authorities assert that only one of the five lakes in Ica is recharging superficially.

[42] Some mention that the cement of the canals and technical irrigation do not permit the recharge of the aquifer by gravity, others point to the cut of *huarango* forests during 1930s-1950s to cultivate cotton which affected infiltration; some blame climatic changes, others points to the overexploitation of the aquifer due to lack of rains, while others note that the problem is lack of forest protection.

[43] Local Water Authority, Ica, 2011.

[44] Interviewed on January, 20th, 2011.

[45] Interviewed on January, 20th, 2011.

[46] See Newspaper La Voz de Ica (2009).

problem and therefore have elaborated joint projects"[47]. JUASVI, on the other hand, explain that to the extent that for them it is a technical problem, the solution they propose must be also technical. "The goal is to raise surface water supply. Projects, such as the one of PETACC, must be boosted. The idea is to generate more development. With Pampas alone, agricultural expansion would be limited. That is why public-private alliances are important."[48] In order to convince the upstream communities of the benefit of the Ingahuasi project, "we have to generate confidence, empathy, in order to open the negotiation door. We have to develop highways to connect Ica with the upstream basin, strengthen business ties to give them more possibilities"[49]. An exporter from the Beta Farm agrees on the fact that agribusiness has created an economic dynamic between Huancavelica and Ica[50]. For him "the Pampas (Ingahuasi) project is the solution and some institution should be in charge of its promotion".

Local discourses to set up better grounds for water access also imply a process of identity formation to establish who need water and for what reasons. Most authorities and water users in Ica believe that upstream basin communities do not use water intensively, for which water is not necessary: "We have analyzed that water is being lost. Up there, they raise a few goats, pastures are all frozen, it is freezing up there, forget it…their plan is to be compensated, a retribution for the water of the lake that we will use, that is the plan of a few political [local] leaders."[51] Most people in Ica agree that the population of the upper basin is a small group of scattered people up in the mountains because most of them have migrated to Ica, where they are offered jobs and education:"there is nothing up there". However, when they were asked if upstream communities use water the response was: "they take half water of Choclocha (canal), they use a lot of water that is meant to be for Ica and besides they do not pay for it"[52]. A leader from the Junta of La Achirana-Santiago de Chocorvos claimed: "Huanvelica discourse is that Iqueños take

[47] Interview to Jose Bartolin, president of La Achirana Water Users Organization. January 20th, 2011.

[48] Interview to the technical manager of the JUASVI (Ground water Users Organization of Villacuri), that reunites agro-industrial water users.

[49] Interview to the technical manager of the JUASVI.

[50] He goes further and states that Peru should follow Colombia to pass a bill that ban people to live in places located more than 3500 meters above sea level.

[51] Water authority of the Autoridad Autónoma Agua(AAA, Tambo).

[52] Ica water user, March 2012.

their water. But they also use water; Huancavelica has signed a covenant with a Chilean company to set up a trout farm in the Choclococha lake."

ICA'S DISCOURSE ON WATER ABUNDANCE IN THE UPPER BASIN

Discourses on water abundance upstream have been intensely political, as were also used during the electoral campaigns. During 2011, Iqueño congressman, Eduardo Cabrera, presented the project N° 143-2011-CR for the construction of irrigation canals for Ica, including the Ingahuasi canal. At a meeting in Ica, he insisted on the necessity of building the Ingahuasi canal because it would bring development. No reference to upstream water users:

> "Now we have to build not only the Villacuri canal but also the Ingahuasi canal, which is very simple. Let's talk of numbers. Currently we have the Choclococha lake in the upstream basin that supplies approximately 160M cubic meters…Ingahuasi has 70 km according to the project. But it could have 146 km. As an open basin it would collect more water given that the area where the Choclococha lake is located is rainy, with which we could have 180 cubic meters. With losses, we would get 100 cubic meters coming in the Choclococha canal."

PETACC presents the upstream basin as an area of abundant water supply. The EIA of the Pampas Project states:

> "lakes are important water bodies in the area. The Choclococha lake has 10 km long and 2,0 km wide, with more than 200 depth. It has a storage capacity of 62,16 MCM. In the upstream basin there are more than 20 lakes of different size and storage capacity. The Pampas river has permanent runoff; its flow has been reduced by the water transfer from the Choclococha lake to the Ica river basin through the Tambo-Ccaracocha project" (Lahmeyer Agua y Energía, 2007: 25).

When describing the Ingahuasi canal, PETTAC points out that it will "collect the runoff produced by the rains over 4500 masl, and will conduct it to the Choclococha lake for storage" (Ibid.: 71), and "the third part of 23 stretches of the canal is located in wetlands and ravines" (Ibid.: 27).

According to a water supply approach, PETACC considers water sources, runoff and precipitation. The project calculates annual precipitation in the upstream basin reaches an average of 814.4 mm. When describing the climate, the report mentions that it is "moderately humid and cold", but stresses that it has a "*slight water deficiency during the year* and a great water excess with a low thermic concentration during the summer" (Ibid.: 32). Finally, it remarks that the "non-regulated basin that is transferred to the Choclococha canal has an extension of 105 km2 and an annual average of 45.79 MCM. The regulated basin in the Orcococha (92 km), Choclococha (149 km), and Ccaracocha lakes and the Ccaracocha canal (56 km) has an extension of 297 km2 and yields approximately 113.89 MCM annually" (Ibid.: 33).

Although the project notes the upstream basin's potential for water supply, it barely mentions that water bodies are actually and increasingly being used by local people and other users: "Rivers are used for domestic uses, livestock, fishing, and rearing trout" (Ibid.: 25). Neither has it explained whether that water is being used, by whom and how. By disregarding actual water uses and volumes, the project ignores the fact that a water balance should consider supply and demand at different times. By stressing water abundance, the EIA hides the fact that the proposed Ingahuasi canal "surrounds the Palomo glacier which is located at 5.188 meters above sea level. The Ingahuasi canal would collect *water coming from wetlands and pastures of seven communities located along the 73 kms of the canal*." The transfer of 52 MCM of water from the Pampas basin to Ica[53] would make "these waters […] unavailable for the use of local communities[54] that have almost 146,000 *Alpacas*, *Llamas* and sheep. Together with the communities of the Ascension district in Huancavelica which would also be affected, the livestock adds up to more than 199,300 heads of cows" (Bayer, 2008: 1). The next section accounts for the importance of water for herder communities in the upstream basin.

PEASANT COMMUNITIES, ALPACAS AND THE MARKET

Peasant communities are the majority of the population in Huancavelica, occupying approximately 900,000 hectares or 70% of the region. Most

[53] By Supreme Decree 039-2006-AG, 52 million cubic meters of water were authorized to be transferred from the Pampas basin to Ica through the Ingahuasi canal project.
[54] That is, Carhuancho, Choclococha, Santa Inés and Pilpichaca.

important natural resources are part of their territory, such as pastures[55], lakes, and wetlands, among others[56]; which favors *alpaca* and *llama* production. However, recently mining projects have occupied the headwaters in some areas, thus placing at risk communal lands[57] and water sources[58]. Cattle raising areas are located in Huancavelica, Castrovirreyna, Tayacaja and Huaytara, and they depend mainly on ground water flows (Postigo 2005, 2008). For this reason, wetlands are not only a land use system but mostly a water use system.

Even though Highlands (*Puna*) ecological systems meet the necessities of *alpaca* rising, this activity was not practiced in some indigenous communities of the Pampas basin up until the 1970s. Census documents dating 1956[59] and 1965[60] with information on Carhuancho[61] productive activities did not mention *alpaca* herding but small animals used for self-consumption and few *llamas*. In fact, *alpaca* production started in the 1970s during the Military government of Velasco Alvarado[62]. Therefore, it is the State who began to promote this commercial activity among Huancavelica communities[63]. State and NGOs' intervention not only changed previous herding practices, water consumption, and ecosystem management, but also allowed an emergent local awareness of the ecosystem's importance for herding.

[55] Postigo (2005) calculates that 92% of pastures are in communal lands.

[56] Although under the state law water sources are considered a public good, some of them are physically located in communal lands and, as such, are communally reckoned as a common good.

[57] Six thousand hectares of pastures have been ceded to Buenaventura mining company in the headwaters of the Carhuancho, Taccsana, Qatunmachay and Vinopascana rivers (Guerrero 2011: 23).

[58] Macassi 2009.

[59] Ministerio de Trabajo y Asuntos Indígenas. Dirección General del Asuntos Indígenas. División de Proyectos 1960.

[60] Ministerio de Trabajo y Asuntos Indígenas. Dirección General de Asuntos Indígenas. 1965.

[61] Carhuancho's history of place formation is rather old. It can be traced up to the 17th century, when upon a request from Lucas Mallma and Sebastian Quispe, the Marques de Valdelirios recognized their ancient possession of the Puchaca and Carhuancho lands. See: Macassi 2009, Suárez 2009.

[62] Macassi 2009.

[63] When the market price of *alpaca* fiber rose, NGOs like DESCO, and private companies took part in developing an alpaca fiber industry for exporting wool, for which they offered not only financial aid but also capacity building. Several projects for promoting *alpaca* herding have been developed in Carhuancho and other highland communities in Huancavelica (see Macassi 2009, Aquino 2011). NGOs such as DESCO and VECINOS PERU, and the government itself have propelled Alpacas herding in this area.Nowadays, state-led project "PROALPACA" has been transferred from the central government to the regional government.

Between 2006 and 2009 approximately 120 families raised an average of 300 *alpacas* in Carhuancho (Macassi 2009), whereas in Pilpichaca -a community of 500 inhabitants- the number of *alpacas* per household was between 29 and 292 (Postigo 2008). The increasing number of animals requests great extensions of pastures. Pilpichaca is 35,903 ha, of which 28,901 are grasslands[64]. Carhuancho has 38,409 hectares, of which 36,583 ha of natural pastures are used for raising *alpacas*. Carhuancho is currently divided in to five sectors, one of which -"Carhuancho Centro"- is where herding takes place in seven valleys[65] with wetlands and natural pastures (Macassi 2009). But it has not always been like this[66]. Community members keep on transforming "the environment in a dynamic interplay that includes species domestication, pasture management, and climate change" (Postigo 2008: 536). Pastoralists have also contributed greatly to landscape change by enlarging wetlands through irrigation canals. Likewise, the state-run National Program PRONAMACHS built irrigation furrows "to increase the infiltration of runoff, foster grassland development, and control erosion" (Ibid: 544). Physical as well as socioeconomic changes influence herding and ecosystem management in the upstream basin, but also communal identity.

Since the 1990s communal structure in Carhuancho has been shifting to develop commercial strategies for herding. First, they created a Special Committee for Farming and Communal Issues and during 2000 a Committee for Commercialization was created. Given the water conflict with Ica, they also created a Special Committee of Communal Affairs and Defense of Water Resources. Before 2005 prices of *alpaca* fiber were going down, so the community decided to shear not one but three times a year and once again changed its structure to create a Commercialization Committee to avoid intermediaries. Nowadays, they have an *alpaca* farm with 300 animals valued in US$20,000 dollars[67] and a mini hydroelectric power station for its store. All these transformations yielded fruit. From a production of 122 quintals of *alpaca* fiber in 2006, they reached 150 quintals in 2010. That year, sale of *alpaca* fiber produced an income of nearly 130,500 nuevos soles[68]. The

[64] This number is based on data from Postigo, 2008.

[65] Catunmachay, Carhuancho, Taccrapampa, Pacchapata, Pampahuasi, Orccunhuasi, Accohuasi, Yuraccccorral, Muyupampa, Ccolpahuaycco, Arrieropampa, Yanaccollpa, and Trapiche (Macassi 2009).

[66] In Pilpichaca, for instance, internal pastureland borders have changed through time (Postigo 2008: 539).

[67] Their incomes have replaced communal fees. See Aquino 2011.

[68] Approximately, US$50,000 dollars.

intervention of Arequipan fiber companies, such as Prosur, Texao, Fibra Andina, Alpasur, Clamasac, Santa Isabel, among others (Guerrero 2011) not only boosted the development of commercial herding in Carhuancho, but also forged asymmetrical commercial links with peasant communities in Huancavelica[69]. This recently developed industry[70] prompted the extension of pastures in the upstream basin and therefore increased water consumption in the wetlands, though this is an 'informal' use as it is not recognized by the state. Likewise, in 2005 Pilpichaca's contract with Salchicheria Alemana company had an impact on livestock production, which they were forced to augment in order to comply with the agreement. Not only they had to increase production, but also grasslands and water diversion for managed pastures (Postigo 2008). Aquino (2011) points out that, according to the Ministry of Agriculture, the overuse of pastures was about 149% even in 2004.

The dependence of Carhuancho and other upstream basin communities of Huancavelica on the global market can be viewed as an example of 'glocalization' (Swyngedouw 2003). Wool corporations such as Michell, Sarfaty, Prosur, among others; and agricultural and sanitation laboratories, such as Sanivet, Bayer, and Agrove Market[71] share commercial links with upstream communities. As a result, the increasing water use has actually influenced space formation. On the other hand, the development of commercial herding has contributed to the creation of a communal block of Carhuancho's families' vis-à-vis external threats, such as the concession of pastures to mining companies or the construction of canals for transferring water to Ica. Engineer Jorge Quinto Palomino, former official of the Huancavelica Regional Government, argued: "people know that Carhuancho is well organized concerning the sale of the *alpaca* fiber, that is, they have looked for a market to directly sell the wool to Arequipa's companies. And I think this is the fundamental reason whereby they opposed the plan to build the Ingahuasi canal".[72]

[69] Even so, Carhuancho families prefer direct links with Arequipa's companies because the avoidance of intermediaries in the productive chain resulted in an increasing profit margin. Three years ago the price of Alpaca's fiber in Huancavelica was about 8 *nuevos soles*, whereas Carhuancho sold it to US$12,00 dollars.

[70] Which happened to coincide with climate changes. See Postigo 2008.

[71] See Aquino 2011.

[72] In Macassi 2009.

ECOSYSTEM MANAGEMENT AND WATER USE IN THE UPSTREAM BASIN

In Huancavelica pastures are accessed through the community. Although legally the community is the owner of the land, a group of extended families possesses it. According to customary rules, the extended family, in turn, grants access rights to recently formed couples and individuals to pasture their herds (Diez 2010). The Pilpichaca and Carhuancho communities are organized around herding, for which mobility is essential. Pastures are collectively and family owned. Families use communal pastures by paying a communal fee. Usually, a family owns one or two areas of pastures which they rotate to prevent soil degradation.

During the wet season animals are moved to downstream areas, whereas in the summer they are kept in higher grasslands to use the wetlands or managed pastures (Postigo 2008). Herders´ knowledge of the diet, routines and grazing places for *alpacas, llamas* and sheep has been historically crafted. Water management is also an important aspect of pastoralism. Herders change pasture areas according to water availability, build irrigation canals for improving pastures and wetlands management, and prevent overgrazing (Ibid.). Local knowledge is thus responsive to climatic[73], physical, socioeconomic and political influences.

The maintenance of ecological systems for subsistence agriculture, as responsive to traditional economic practices in the highlands, was molded through the modernization process they have been through. Landscape changes as well as the transformation of communal identity are evident in upstream communities like Carhuancho. They not only built a mini hydroelectric power office, but also formed a Special Committee for Communal Affairs and Defense of Water Resources in Carhuancho community.

The unprecedented economic development of communities such as Carhuancho is not the only reason that explains their position against the construction of the Ingahuasi collector canal. It partly stems from the experience the Choclococha community faced during the 1950s. Choclococha's relocation due the construction of the dam in the late 1950s - which annually diverts 492 MMC to Ica through the Collector Canal of 53 km-

[73] See Postigo (2008) on the effects of climate change in pastoralism in the Pilpichaca community.

, together with the destruction of pastures and livelihoods, echoes every time the PETACC tries to convince them of the benefits of the Pampas project. The traumatic experience of Choclococha community also extended to Carhuancho, which split into two parts thus impeding not only the traditional *alpacas* transit, but also routes and social space (Macassi 2009). Communal southern areas, such as Ccello, Chanlala, Huaracco, Ccaraccocha, where wetlands and natural pastures abound, were extremely altered by the use of heavy equipment and the construction itself. In addition, the division of the community by the collector canal contributed to the desertification of the downstream part of Carhuancho because the canal impeded the surface run-off to the streams[74] (Ibid.). Guerrero, an important leader of Carhuancho, points out: "[The Choclococha canal affected] the whole barrio of the Huaracco Annex, which is no longer apt for herding. This has led local people to take up mining, migrate to the cities or work to maintain the canal infrastructure. Approximately 15,000 to 18,000 hectares were undermined. Communities were forced to restructure their economic activity, their livelihoods". (Macassi 2009: 38).[75]

The decline of pastures in the areas surrounding the infrastructure, transformation of the ecological system of the lakes, disappearance of the Parionacocha Lake due to silting of sediments in the canal, changes in water flow, reduction of the infiltration water function and aquifer recharge, degeneration of wetlands and natural pastures, decline of pastures performance for herding, loss of hydro biological and terrestrial wildlife, etc. are some consequences of the construction of the 1950's Choclococha canal(Macassi 2009).

Ingahuasi canal collector threatens to affect not only several water sources, but also mountains and wetlands where water is produced.[76] Three main impacts would be the disappearance of the ecological water flow of the

[74] For an account of the functioning and importance of wetlands for water production, see Gunawardena, Gopal and Kotagama, 2012.

[75] See also Verzijl 2012.

[76] For instance, it would alter the Vinopascana river, tributary of the Carhuancho river, and would collect water from the Paccha Huaycco, Anccoripa, Otorongo, Puca Raja rivers; diverting waters of the Rumirumi river with which the Yanaccocha lake is fed. It would also cut the Portachuelo, Quello isquina and the Otorongo rivers, close to the Palomo mountain branches. Similarly, it would cut the Carhuancho river and the Accohuasi and Acconochayuq rivers natural flow. The canal would also affect water filtration to the lower areas because its route surrounds the skirts of the Palomo, Ayllas, Salvador and Cocha orcco mountains. It would also cut the Cecca Pallcca, Pulchuhuasi, Tutupununan and other rivers and streams before heading to the Choclococha lake (Macassi 2009).

upstream Pampas river (Choclococha lake), sedimentation of the Parinacocha lake, and the reduction of the recharge of the aquifers (Quispe 2008a). All this would indeed alter the wetlands, lakes and other water sources where endangered wildlife and other species abound (Macassi 2009), and where communities such as Carhuancho and Pilpichaca develop their livelihood. It is not surprising then that upstream communities were against the construction of the Ingahuasi collector canal. As happens with the construction of water megaprojects, water is alienated from its environment and the local people, and as a result "this environmental alienation generates and shapes local conflicts and crisis" (Johnston, 2005, 141).

In 2006, Carhuancho, Choclococha, Santa Inés and Pilpichaca communities and its regional, national and international allies -among who were lawyers, engineers, ecologists and activists-, outlined a strategy to block the construction of Ingahuasi Canal. They filed a lawsuit before the Latin American Water Court (TLA[77]) against the PETACC, the central government and the Regional government of Ica for violating its water rights, its right to a sustainable use of natural resources, and indigenous people's rights. On grounds of violation of the International Labor Organization (ILO) 169 Convention on the rights of Indigenous Peoples, enforced in Peru since 1994; and the on Convention on Wetlands (Ramsar Convention) of 1971[78], Carhuancho demonstrated that PETACC, and, therefore, the State, had broken the law and infringed international treaties. The construction of the Ingahuasi Canal by PETACC not only lacked due consultation, but also would affect wetlands, water sources and livelihoods of highland communities in Huancavelica. Although this Tribunal is not legally binding to the Peruvian State, its decision turned out to be key for Carhuancho and the Huancavelica Regional government. After mere consideration, in October 2007 the Tribunal decided that PETACC was responsible for the destruction not only of the natural water system but, most important, of an ecological system that was essential for the subsistence of highland communities. In addition, it censored Peruvian state officials, Ica's authorities and PETACC for their lack of compromise in meeting their national and international obligations to the detriment of life, health and nature. So far, PETACC is attempting to use more subtle strategies to convince those in the upstream basin to carry out the project.

[77] TLA is the acronym in Spanish for Tribunal Latinoamericano del Agua.
[78] Peru subscribed The Ramsar Convention in 1991 through *Resolución Legislativa* 25353.

The analysis here shows that local communities basically oppose to the naturalization of the mythological construction of the upstream basin as water-abundant to cover downstream water scarcity caused by agribusiness. Through this discursive device, state authorities aimed to derive water from the Pampas basin to fulfill agroindustry water necessities to the detriment of pastoralist communities. Most of all, what Huancavelicanos ultimately oppose is the "imposition of a scarcity framework that uses the language and analytical tools of the market to assess water problems and to support preferred solutions" (Johnston 2005: 148).

DISCUSSION

The social manufacture of water scarcity in Ica is contingent to the discursive construction of water abundance in the upstream basin. These discursive devices were at the service of global, national and regional economic and political interests aligned with downstream users, and simultaneously detrimental to the highland communities located in the upstream basin. Hence, the conflict between Ica and Huancavelica comes up not because of physical water scarcity or abundance, but because of the crafting of symbolic arguments to back up a unidirectional decision to grab water from upstream and support downstream agroindustry regardless of water balances and ecosystem impacts. Nonetheless, when talking of water scarcity in Ica a distinction should be made as to who is the real victim of it. While water scarcity is a contentious reality for surface water users especially in some sectors of Ica, ground water users do not really face it because their access to technology allows them to grab more water despite the aquifer depletion. Even so, both sectors would benefit from a hydraulic work such as the Pampas project. For this reason, a regional unified front of Ica's surface and ground water users led the regional government to claim to the central state the need to transfer water from the upstream basin where water supposedly abounds.

The role of the state is key here as its policies led to the depletion of the aquifer downstream and overgrazing upstream. In fact, far from applying a coherent policy, reckless random state practices following a neoliberal rationale promoted market oriented modes of production both downstream and upstream. But this apparently articulated economic policy, based on a mere water supply approach, omitted an evaluation of water supply and demand in the basins. The analysis here demonstrates how the neoliberal state promoted

export activities both downstream and upstream with no consideration of the water balance.

Even though in Huancavelica at some point the state actively propelled commercial herding in upstream communities, at the end the porosity of the state vis-à-vis powerful productive forces in Ica made it unresponsive to local upstream water claims. While here we have showed why the state bent towards Ica, it is necessary to comprehend the history of exclusion, political violence, and cultural differences that characterize the relation between Ica and Huancavelica. Paradoxically, state intervention also had unexpected consequences as it unwillingly empowered upstream communities to stop the construction of the deriving canal to Ica through different strategies, including one to surmount the national level through an international trial against Ica, the state and PETACC. The trial where international treaties were used to ground communal water claims also served to rephrase their water rights, protect livelihoods and defend their -newly market oriented- mode of production. Thus, the conflict simultaneously reached the global space to circumvent the state and transformed local water meanings in the process of making waterscapes.

ANNEX N° 1.

Legal regulations related to the water crisis in Ica and Villacuri aquifers

Year	Bills/Regulations	Content
1966	Ley N° 15921	Mientras no se ejecuten los estudios técnicos para evaluar la situación en el valle de Ica, se prohíbe la perforación de pozos[79]
1969	D. Ley N° 17752-Ley General de Aguas	Art. 28°.- Los usos de las aguas se otorgan mediante permiso, autorización o licencia.
	D.S. N° 274-69-AP-DGA	Reglamento del Título IV de las Aguas Subterráneas del D. Ley N° 17752, Ley General de Aguas.
1970	R.S.N° 468-70-AG	Mientras no se mejoren las condiciones actuales de los acuíferos, queda prohibida la perforación de pozos dentro del Valle del Río Ica.

[79] The TAHAL Project was carried on based on this bill, which mentioned that the increasing exploitation of water resources had long overpassed an acceptable level thus risking the sustainability of the water table.

Annex 1. (Continued)

Year	Bills/Regulations	Content
1991	D. Leg. N° 653- Ley de Promoción de las Inversiones en el Sector Agrario.	Norma y promueve la inversión y obtenciónde aguas subterráneas.
	D.S. N° 048-91-AG	Promueve el mejoramiento y tecnificación de los sistemas de riego existente, así como la utilización de las aguas subterráneas (Art. 106) Art. 109°.- El usuario que por su propia cuenta y riesgo invierta para la obtención de aguas subterráneas no sufrirá menoscabo alguno en su dotación de agua surface por el volumen de agua que pudiese obtener de dichos pozos.
1997 – 1998		Primer Inventario de Recursos Hídricos Subterráneo
2001	Resoluciones Administrativas N° 059-063-2001-CTAR-DRAG-I/ATDR	Regularización de Derecho de Uso y/o Explotación
2002		Segundo Inventario de Recursos Hídricos Subterráneos y Estudio Hidrogeológico.
2003	R. Adm. N° 022-2003-GORE-DRAG-I/ATDRI	Ampliación de Plazo de Regularización de Derecho de uso y/o explotación de las Aguas Subterráneas.
2005	R. Adm. N° 038-2005-GORE-DRAG-I/ATDRI	Se prohíbe por dos años, la perforación de pozos tubulares y nuevos en reemplazo de pozos a tajo abierto y tubulares para alumbrar aguas subterráneas. Los pozos que no cuenten con su respectiva licencia, deberán regularizar su derecho en el plazo de 120 días calendarios. Se establece el sellado de pozos caducados por reemplazo, en el Departamento de Ica.
2005	R. Adm. N° 055-2005-GORE-DRAG-I/ATDRI	Se amplían las restricciones efectuadas en la R. Adm. N° 038-2005, al sector de Pampas de Villacurí.
	R. Adm. N° 103-2005-GORE-DRAG-I/ATDRI	
2006	R. Adm. N° 049-2006-GORE-DRAG-I/ATDRI	Las personas y/o empresas cuya actividad es realizar obras de captación y/o explotación de aguas subterráneas, tienen un plazo de 6 meses para que puedan obtener su licencia.
	R. Adm. N° 053-2006-GORE-DRAG-I/ATDRI	Aprueban la zonificación por distritos del Estudio Hidrogeológico del Valle de ica – Villacurí.

Year	Bills/Regulations	Content
2007	Resoluciones Administrativas N°s 059 y 150-2007-GORE-DRAG-I/ATDRI	Se prorroga la vigencia de las Resoluciones Administrativas N°s 038 y 103-2005.
	D.S. N° 025-2007-AG	Medidas para la conservación y preservación de aguas subterráneas a nivel nacional: Los solicitantes de suministro de energía eléctrica que requieren dicho suministro para el funcionamiento de pozos de explotación de aguas subterráneas, deberán entregar previamente a dicho concesionario copia de su licencia de uso de agua.
2008	R. Adm. N° 001-2008-GORE-DRAG-I/ATDRI	Prohíbe la perforación de nuevos pozos para alumbrar aguas subterráneas en el valle de Ica y Pampas de Villacurí. El reemplazo de pozos solo procederá respecto a pozos operativos debidamente autorizados. Plazo: 60 días para que los propietarios de pozos que no cuenten con su licencia de uso de agua, puedan regularizar su derecho.
	R.M. N° 061-2008-AG	Establece veda para el otorgamiento de nuevos usos de aguas subterráneas por el plazo de dos años, quedando prohibido ejecutar todo tipo de obra destinada a la explotación de recursos hídricos del acuífero del valle del río Ica y Villacurí.
2008	R.M. N° 0554-2008-AG	Excluye al Distrito de Ocucaje de la Veda declarada en la R.M. N° 061-2008-AG. Precisa que la veda no comprende a los pozos para fines poblacionales. Aprueba el inventario de pozos utilizados al 2007.
2009	R.J. N° 0763-2009-ANA	Incluyen Acuífero de la Pampa de Lanchas en la Veda para el otorgamiento de nuevos usos de aguas subterráneas.
	R.J. N° 0327-2009-ANA	Ratifica declaratoria de veda de los acuíferos de Ica y Villacurí.
2010	R.J. N° 081-2010-ANA	Hasta la fecha solo se puede regularizar el uso del agua de los pozos registrados e inventariados que tengan la condición de utilizados. La Resolución dispuso el cambio de condición a utilizados, de aquellos pozos utilizables y no utilizables, que al momento de su incorporación en el inventario de pozos del 2007 se encontraban operando.
2011	R.J. N° 330-2011-ANA	Ratifican condición de veda de los acuíferos de Ica, Villacurí y Lanchas. Prohíbe la perforación de pozos así como el otorgamiento de autorizaciones de ejecución de obras o derecho de uso de agua subterránea así trate de solicitudes en vía de regularización.

Elaborated by: Eder Lara and Doris Valdez, 2012

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