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Historicizing more-than-human knowledge practices around water in the Lake Poopó basin, Bolivia

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Abstract

This article develops a more-than-human and historicizing perspective on the co-creation of water knowledge in and around Lake Poopó, Bolivia, an Andean wetland area of international importance threatened by desertification. Through a combination of historical and ethnographic sources, it particularly focuses on the knowledge practices of the Uru or Qot Z'oñi communities who are recognized as "people of the waters and the lakes" and live as an ethnic minority in this dramatically transforming water basin. Starting from contemporary efforts to protect Uru water knowledges, it traces how shifting more-than-human entanglements and (neo)colonial encounters have produced, excluded, and transformed these knowledges.

Key-words

Lake Poopó, Uru Qot Z'oñi, Bolivia, water knowledge, knowledge co-creation

1. "Since we are from the lake, we know everything": a historical and more-than-human perspective on local water knowledge[2]

> The knowledges, wisdom and ways of life linked to water, as traditional living spaces and ways of subsistence of the Uru Native Nation (Qha's - Qot Z'oñi), are declared Intangible Cultural Heritage of the Plurinational State of Bolivia. (Article 1, Bolivia: Ley No 1255, 2019)

In 2019, the knowledge systems of the indigenous communities of the Uru Native Nation were enshrined in a national law, which had been co-designed by the communities and public institutions. The Uru nation or Qot Z'oñi are believed to be the earliest inhabitants of the Andean central high plateau, yet today constitute an ethnic minority distributed in different groups across Bolivia (where they are recognized as one of the country's 36 "native nations"), Peru and Chile. The Uru self-identify as "people of the waters and the lakes" and organize their lives nearby the bodies of water that cross the Andean plateau, from Lake Titicaca, through the Desaguadero river into Lake Poopó and the rivers Lauca and Barras, which enter in the Salt flat of Coipasa. Today labelled as the TDPS (Titicaca–Desaguadero–Poopó–Salares) system, this forms the so-called "aquatic axis" along which the Uru historically settled. Because of the system's endorheic character,

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[2] This contribution would not have been possible without the commitment and participation of the Uru Qot Z'oñi communities Puñaka, Vilañeque, and Llapallapani; the Centro de Ecología y Pueblos Andinos (https://cepaoruro.org/)—in particular the collaboration with Francisca Condori and Carol Rocha; and the financial and academic support of the Independent Social Research Foundation (https://www.isrf.org/).

which means that its waters have no outlet to the ocean, it becomes particularly vulnerable to salinization and pollution.

Over the last decades, the water system upon which the Uru's livelihoods, culture and identity depend has undergone dramatic transformations. High evaporation levels, river diversions to satisfy urban, agricultural and mining demands, as well as sedimentation of urban and mining-related waste have speeded up natural transformation processes. Desertification hit a critical point in 2015 when Lake Poopó dried up almost entirely (Figure 1). Bolivia's second largest lake used to cover over 2,000 km^2 and was recognized as a national heritage site and ecological reserve in 2000, followed in 2002 by its designation as a wetland area of international importance under the Ramsar Convention for Wetlands. While water levels have slightly increased in recent years, and the lake has experienced similar substantial droughts in the past, scientists consider its recovery unlikely. This has made the lake a posterchild of climate change disaster, although this focus risks downplaying the impact of centuries of unregulated mining and decades of growing urban and agricultural water consumption (Perreault 2020).

The legal recognition of Uru knowledge practices is directly motivated by the effects of Lake Poopó's accelerating desertification. Without pretending to save the lake, the legal codification of the Uru's "knowledges, wisdom and ways of life linked to water" as heritage does express how these practices vitally support their intimate bond with Lake Poopó. Indigenous Knowledges, as Potawatomi scholar Kyle Powys Whyte explains, "have an irreplaceable value as guides for structuring how [Indigenous peoples] will prepare for, adapt to, and mitigate future sustainability challenges" (2018, 67). The challenges faced by the Uru, and particularly the sub-group of the Uru of Lake Poopó (who used to be referred to as Uru Murato), seem enormous, and possibly unsurmountable. Organized in three tiny, dispersed communities (Puñaka, Vilañeque, Llapallapani) comprising 750 inhabitants, this sub-group used to live from the lake as fishers and hunter-gatherers of waterbirds (notably flamingos) and bird eggs.

The legal codification of Uru knowledges entails risks widely discussed in anthropological and political ecology literature regarding the unawareness, devaluation or simplification of "Traditional Ecological Knowledge" or TEK within Western science and governance (Nelson & Shilling 2018). Seeking commensurability between the epistemological and ontological diversity and complexity of human-water relations with modern knowledge and management schemes, Local (or Indigenous, or Traditional) Ecological Knowledges tend to be systematized as "static, timeless, and hermetically sealed" (Cruikshank 2005, 10). In this way, they can become a strategic device that can be "transmitted as rules or formulas" (Ulloa 2019, 71). However, they remain difficult to capture in legal instruments. At the same time, the Uru's 2019 law also provides possibilities and concrete tools "enabling local resource users to play a role in deciding what forms of knowledge were most useful to them, and how" (Horowitz 2015, 237). Insights from political ecology, political ontology, multispecies ethnography and environmental history are key to developing a more critical and empowering approach to prevent the reductive codification and appropriation of local knowledges.

Crucially, such an approach requires an historical and entangled perspective on local water knowledges. Firstly, Cruikshank insists that these knowledges need to be understood in terms of "socially situated" and "porous" knowledge practices shaped through historical encounter, both with other humans and human projects – particularly with Western exploration and governance schemes – and with transforming landscapes (2005, 10). Secondly, such knowledge practices must be understood in terms of "more-than-human" entanglement. They are produced through and integrated in intimate relationships that exceed modern knowledge practices appreciated and institutionalized by Western science (Horowitz 2015; de la Cadena 2015). In that sense, they are co-created with biophysical or spiritual entities, including plants and animals, water, wind, ancestors and other places and "presences", sometimes honored as protective or even sacred beings (Cavalcanti-Schiel 2007: 7; Cottyn and Zenteno 2023). Through this double approach, in tune with O'Gorman and Gaynor's outline for a "more-than-human histories" research agenda (2020), local ecological knowledges emerge as the historical, situated outcome of more-than-human co-creational practices.

This article develops a more-than-human and historicizing perspective on the co-creation, accumulation and transformation of Uru water knowledge in the Lake Poopó basin. In terms of multispecies dynamics, Uru water knowledges are co-created through concrete practices in alliance with the different waters, winds and animals that shape the lake. "We know how to row, assemble the veil, then a little later how to hunt *parihuana* (flamingo), rabbits, … since we are from the lake, we know everything" (Uru of Lake Poopó community member, cited in Callapa 2020, 26). These alliances exceed what tends to be termed as 'ecosystem services.' For the Uru, Lake Poopó is much more than a wetland ecosystem. They consider Lake Poopó as Qota Mama or Mama Qucha (Mother Lake) which protects them "like a father and a mother", constituting the source of their livelihoods, culture and knowledges (Callapa 2020, 28; field notes August 2022).

In terms of historical dynamics, I am interested in how shifting more-than-human entanglements and (neo)colonial encounters have shaped Uru knowledge practices around water. These practices are situated within an intimate, but far from static bond between the Uru and Lake Poopó, in which other indigenous communities, scientists, public authorities, water, fish, aquatic plants and birds, salt and pollution (amongst other entities) participate. The creation and transformation of this bond and the knowledge practices which underpin it resonate with Cruikshank's analysis of the effects of the "commodification" of sentient landscapes. The reduction of landscapes to property that can be dispossessed and "natural resources" to be rationally governed confronts Indigenous peoples with a "double exclusion, initially by colonial processes that expropriate land, and ultimately by neo-colonial discourses that appropriate and reformulate their ideas" (2005, 259).

Engaging with these theoretical and empirical insights, I build on anthropological research in the Lake Poopó basin by Schwarz (1996), Barra *et al*. (2011), and De Munter *et al*. (2019), and on the co-creational projects of FUNPROEIB Andes (Callapa 2020). As part of an ongoing collaboration with the NGO Centro de Ecología y Pueblos Andinos (CEPA) in Oruro, I conducted archival research and field work from July to September 2022.[3] I consulted the collections of the Judicial Archive of Poopó, the Departmental Government of Oruro, the National Institute for Agrarian Reform in Oruro, CEPA, the Municipal Library of Oruro, and the national ethnography museum MUSEF. Together with CEPA, I attended four community meetings, and co-organized an oral history workshop with authorities and members of the three Uru communities of Lake Poopó.

The article gives insight into how the Uru-Lake relationship emerged as a survival and resistance strategy in the context of colonial material and symbolic reorganizations that pushed Uru communities off the land and on the lake. Secondly, it traces how this bond became increasingly more vulnerable in the face of environmental changes and new (and failed) encounters since the 20th century with Western scientific and institutional schemes. The article closes with a final reflection on the potential and challenges of a more inclusive knowledge exchange around water in a context of advanced desertification.

[3] This research was funded by an Independent Scholar Fellowship of the Independent Social Research Foundation (www.isrf.org)

Figure 1: Lake Poopó on January 15, 2016. Credits: NASA Earth Observatory images by Jesse Allen. Wikimedia Commons

2. "Living without law or reason": Water knowledge co-creation as a survival and resistance strategy

According to their origin myth, the Qot Z'oñi or Uru are the descendants of the Chullpas who lived in darkness with only the light of the moon and the stars, until the appearance of the sun, which burnt many of them. Only those Uru who managed to escape into the water would survive, explaining their intimate relation with Lake Poopó as a source of survival. While the Urus had always been living with the lake, this bond was actively appropriated as a strategy to respond to multi-layered processes of discrimination (Barra *et al*. 2011, 2).

Ethnohistorical research such as by Nathan Wachtel and Gilberto Pauwels demonstrates how the seemingly timeless association with water is the outcome of colonial reorganizations, with potentially pre-colonial roots (Wachtel 1978; Pauwels 1996, 2006). It suggests an early colonial heterogeneous spectrum ranging from poor Uru families mainly organized in and around the lake to richer, landowning and agriculture-oriented ones. Over the course of the 16th and 17th centuries, that image gradually simplified through acculturation and marginalization, also shaken up by a massive demographic decline that contributed to a stark stratification (Wachtel 2001, 335-360). Eventually, most Uru assimilated with Aymara communities while only the poorest population was grouped into the category of Uru. Under colonially-instigated processes of othering, these remaining Uru were stigmatized as less civilized, or as Ludovico Bertonio wrote in his Dictionary of the Aymara language in 1612, "a nation of Indians the most despised of all, usually sinners and less intelligent" (Wachtel 1978, 1130).

To the remaining Uru, who lived dispersed across the *altiplano*, lakes became a space "of forced confinement, but also of resistance, since the urus used to escape the obligations imposed by the conquerors by hiding in the lake, which would mean more freedom in the long run, but less rights" (Barra *et al*. 2011, 32). Resonating with James Scott's notion of "the art of not being governed", this made these lakes illegible spaces of "permanent revolt" (Wachtel 1978, 1140) against colonial authorities (2014). To stay out of the reach of colonial and Aymara exploitation, many Uru families retreated to the lake where they organized their community within the *totorales*, the high and abundant bushes of a common aquatic reed plant (Schoenoplectus californicus). Their refuge "living without law or reason and without paying tax, because they are as if hidden," prompted interventions to pull these rebellious Uru out of the water to subject them to tax payment and evangelization, most strikingly illustrated by an expedition organized in Lake Poopó and documented by a report from 1688 (Mendoza 1943, 52). The report registers around 60 families, although there is mention of more families living even further away on the lake, who refused to accept any form of fiscal or religious subjugation.

From the 1688 report and other colonial documents an image emerges of the lake as an "untamed" frontier of civilization, resonating strongly with the ecological dimensions of marronage. Similar to how enslaved people and maroons in the US South "used their unique knowledge of the landscapes and waterscapes to extend a fugitive and transient freedom" (Hosbey & Roane 2021, 70), the Uru living on Lake Poopó strategically developed and deployed situated knowledge practices to organize their communities on and around the lake. They did so not only by generating knowledge about, but also in alliance with diverse lake inhabitants, most notably the *totora* plant. *Totora* offered camouflage in the form of a dense bushy terrain with "streets" through which the Urus had learned to navigate (Gutiérrez 2014). Used for construction material to build floating islands, houses and rafts, *totora* is also used to weave hats and utensils, and provides a source of nutrition because its roots can be harvested and its bushes hide bird nests from which the Urus gather eggs.

That Uru water knowledge, which emerges from more-than-human co-creation with the landscape rather than from human codification of the landscape, is illustrated by how the Uru deal with the lake's extreme variability. Lake Poopó is a shallow lake, which makes it susceptible to cyclical changes. Small variations in wind, precipitation, and water inflow easily translate into stark changes of lake's extension, as well as its shape, depth and location (Pillco & Bengtsson 2006). The Uru learned to cleverly exploit the lake's inherent mobility in their navigation, hunting, gathering and fishing activities by developing profound

knowledge of the seasonal cycles of the wind, *totora* growth, bird nesting, and birdfeather molting.[4] The *jalsuri* – the sacred underground springs that feed the lake – are assigned a key role in stewarding this variable hydrographic system. Knowledge requires practices of care, such as the rituals dedicated to water spirits as well as to the wind in order to renovate the interwovenness of Uru-lake.

> [W]isdom and knowledge, is [also] the sacred places. First, you don't go there just like that, but you always have to go to the shores of the lake, you have to love, ask for permission from the Mama Qucha, from the jalsuris, that's the knowledge. (Uru of Lake Poopó community member, cited in Callapa 2020, 26)

Over time, these knowledge practices have fed into essentialist – at times romanticizing, but mostly stigmatizing – depictions of the Uru as an inherent part of the lake. The Uru's reliance on the lake was framed by colonial authorities in dualistic terms – land as civilized, versus water as ungovernable. The Uru had to be settled onshore, and were sometimes granted land titles, because "it is impossible to preach the gospel in this lake [Poopó]" (Van der Berg, cited in Callapa 2020, 66; Wachtel 2001, 369). To the more agriculture-oriented Aymara communities, this relation offered an excuse to appropriate land controlled by the Uru. Aside from the lands granted to "rebellious" Uru pulled from the lake, early colonial documents demonstrate that the *ayllu* of Puñaka, for instance, had purchased land titles from the Spanish Crown for an area comprising the entire lake.[5] Particularly from the 19th century onwards, Aymara-Uru tensions over access to land rose. Episodes of drought pushed Uru families on the land and motivated Aymara communities and "businessmen" to seize dry stretches for cultivation, even though this was officially state property (Mamani and Reyes 2005: 54-55; Morales 1913, 3). Judicial sources indicate how Uru communities were denied access to any land, initiating long and often violent cycles of conflict with neighboring communities.[6]

What had emerged as a survival and resistance strategy, the label of "people of the water" culminated in the denial of historical rights of the Uru people. This discrimination materialized in displacement, unfree labor relations under Aymara control, extreme levels of poverty, and cultural assimilation with the dominant Aymara culture (Barra *et al*. 2011). By the 1930-1940s, the last Uru families remaining on the lake were forced to settle on land after alternating floods and droughts destroyed most of the *totora* (Miranda *et al*. 1992). Deprived almost entirely from any arable land, this sub-group of the Uru of Lake Poopó settled on the shores of the lake, surrounded by politically and economically dominant Aymara communities. While water scarcity and contamination started to undermine the co-creation and transmission of Uru water knowledges, these landscape transformations also shaped a context for new, unequal encounters with scientific and institutional knowledge practices.

3. "An appropriate relation between man and the natural resources": Scientific water knowledge without Uru knowledge

Guided by a Western epistemology of "taming" nature, Lake Poopó became the object of scientific knowledge production driven by neo-colonial aspirations to unlock the vast resources of Latin America's recently independent countries. Alcide d'Orbigny was one of the first European travelers in South America to mention Lake Poopó – referring to "the Lake of Pansa" as a "vast dead-end reservoir" with permanently salty and evaporating waters and relatively densely populated surroundings (1844, 309). In an effort to survey the Andes' unexploited opportunities, expeditions were set up to evaluate the lake's potential for navigation and irrigation. Ironically, one of these early expeditions, led by Neveu-Lemaire in 1906, even used a local fisherman's boat named after Christopher Columbus to explore the lake (1906). Another study was ordered

[4] Interviews by CEPA, 2017, and workshop 19 August 2022.

[5] Dossier "Proceso Uru Murato TCO", Tomo 1. INRA Archive, Oruro.

[6] Several conflicts from the 1840s to 1880s led to judicial proceedings registered in the Judicial Archive of Poopó. See Fondo República, Cajas 21 (exp. 1), 28 (exp. 24), 41 (exp. 7), 43 (exp. 9), 46 (exp. 13), 68 (exp. 65).

by the Huanchaca Company of Bolivia to plan new railways serving the company's mining districts (Créqui Montfort 1904).

During these expeditions, Western scientists reported on their "discoveries" of reclusive Uru communities in the Lake Poopó basin, described by German geographer Carl Troll as "small remnants of primitive inhabitants that are still to be met with on the Altiplano" (Science 1927). The scientific study of natural resources was interwoven with the "naturalization" of the Urus and their relationship with the lake. A "discursive tradition within international nature conservation," such processes of naturalization included the depiction of indigenous people "not (…) as exterior to wilderness, but as part of it" (De Bont 2015, 216-217). In that context, the study and preservation of Uru culture gradually became a matter of scientific interest, similar to growing concerns about species threatened by extinction. Extending and consolidating colonial land-water dualisms, Western anthropologists decisively shaped the "ethnographic myth" that continues to depict Uru culture as a homogeneous and passive remnant of a distant past with no connection to the land (Wachtel 2001, 360). Although Posnansky, for instance, recognized the Aymara as the Uru's neighboring "usurpers of their lands" (1949, 61), most of these anthropologists continued to reinforce an ahistorical, exotic image.

Ethnographic mythmaking has had an unsettling effect on later processes of encounter between Uru and Western ecological knowledge and management practices. From the middle of the 20th century, Lake Poopó started to attract more scientific interest. Hydrology research sought to map the water regulation within the wider water system (e.g. Carmouze *et al*. 1978), and would contribute to bilateral talks between Bolivia and Peru to jointly manage the TDPS system (Revollo 2001). Biology research underscored the saline and shallow lake's appropriateness for flamingo nesting (Hurblert & Keith 1979). Evidence gathered by ornithologist Cordier about the distribution of the rarest of flamingo species, the James' flamingo (Phoenicoparrus jamesi), relied notably on the knowledge practices of the "Morato Indians," who were mobilized to gather young flamingo in the southern area of the lake (Cordier 1968, in Kahl 1975). Cordier's observations crucially informed a UNESCO[7] report which pointed to bird hunting on the part of the Uru to partially explain why "the whole region of and around Lago Poopo is threatened with destruction" (Jungius & Puyol 1969, 63). While recognizing that "[c]ontrol of traditional customs which happen to be destructive, is always a very delicate subject," it considered "legal regulations so as to induce an appropriate relation between man and the natural resources" to be "an indispensable step towards rational management of the resources of the region for the ultimate benefit of the local residents" (Jungius & Puyol 1969, 64). While building on Western science's instrumentalization of Uru knowledge practices, the report's recommendations simultaneously sought to discipline and eliminate those practices, suggesting armed patrolling of waterbird breeding areas (Jungius & Puyol 1969, 67). No protected area was established following this report, yet the practice of flamingo hunting increasingly meant the Uru were subject to criminalization (Acosta 1997; Condori 1997).[8]

Uru knowledge practices were also instrumentalized by other neighboring communities with detrimental effects on the Uru's control over water and related livelihood activities. In the 1950s, *pejerrey* (silverside) had been introduced to the lake in an attempt to develop a profitable fishery sector in the Lake Poopó basin (Schwarz 1996, 30). This motivated agrarian Aymara communities to adopt fishing activities, which they learned from the Uru but led to the marginalization of the Uru within a developing fish market.

> Before, nobody touched the lake, only us. We hunted, we collected eggs, we fished. … They the land, we the lake. Nobody hunted, nobody fished. … [But] the [non-Uru] people have come to learn and have organized their cooperatives. Well, invaded. Then the work has become saturated.[9]

[7] United Nations Educational, Scientific and Cultural Organization.

[8] See also the Archive of CEPA, Oruro.

[9] Uru testimony, interview by CEPA, December 2017, Lake Poopó.

The end of the 20th century witnessed a growing research and policy interest in producing new water knowledges to regulate and "save" Lake Poopó. These efforts were marked by similar lacuna and tensions observed in earlier techno-scientific interventions, at best ignoring, but at times actively excluding Uru knowledge practices. Geographer Burkhard Schwarz has closely assessed the effects of decontextualized concepts of "sustainable development" and "environmental conservation" that were introduced in the context of these new research and development projects (1996). Projects by the Oruro Development Corporation (CORDEOR) and programs financed by the European Economic Community (ECC) applied these new international environmental concepts to water management practices in the Poopó basin.[10] As Schwarz observes, these projects failed to guarantee any proper consultation or participation of Uru communities (1996, 22). Rather, they were designed by pre-established criteria that relied on "concepts that pretend to have universal validity, but that (…) are simultaneously linked to strong levels of ignorance regarding the existence of a diversity of indigenous ecological concepts and practices" (Schwarz 1996, 13). This diversity *exceeds* Western water knowledge and management schemes in that the latter seems incapable of dealing with so-called "traditional" water needs and knowledge practices such as those related to the care for the *jalsuri* (Schwarz 1996, 33).

By overlooking local knowledge practices, Schwarz argues that decontextualized concepts served to keep colonial power structures in place, not only symbolically but also by contributing to a material "reordering of water resources" in the Poopó basin (Schwarz 1996, 14 and 22). Most projects seemed to reduce the vulnerability of the basin and its communities to the lake's characteristic variability, which was to be neutralized through a rational management of water flows and water demands – quite contrary to how Uru knowledge has responded to (and not against) this unpredictability. These projects defined rational water use criteria that did not account for the role of (particularly mining-related) contamination, the diversion of the lake's main intake, the Desaguadero River, by irrigation farmers, and the appropriation of the lake and its fish stock by non-Uru fishers (Schwarz 1996, 20-22). These are all factors directly impacting the Uru's access to water. Gradual loss of water quality and quantity translated in an erosion of related knowledge practices, with several community members reporting a discontinuation in the rituals dedicated to the *jalsuri*, animals, winds, and other lake inhabitants (De Munter *et al*. 2019, 34-36).

Although the link between some of these development projects and Lake Poopó's accelerating degradation requires further assessment, scientific research today points to bad water management as one of the decisive factors in the lake's extreme transformation (Marti-Cardona and Torres-Batlló 2021). After the Urus' exit from the lake, fish, birds, *totora*, and other vital "allies" in their water knowledge practices have also been displaced from its heavily contaminated waters. This is an extension of colonial land appropriation, or what Perreault has labelled as "dispossession by accumulation" (2013); this time effected by toxics and debris from mining and urban waste.

At the same time, the growing academic response to the lake's dramatic level of desertification and contamination, especially since the 1990s (Coronado 2009), and ensuing conservation initiatives, demonstrate greater attempts to engage with Uru knowledges and involve Uru communities in knowledge production. Aside from long-term community collaborations with local organizations that have passed mostly under the radar[11] as well as FUNPROEIB's recent co-creational projects (Callapa 2020; see also Figure 2), examples are the research and policy work executed as a result of of the lake's designation as a Ramsar site (Rocha 2002), and initiatives for bird protection (Aguilar 2013). Yet larger-scale projects and environmental assessment processes in the Lake Poopó basin still tend reproduce the historical discrimination of the Uru, despite the adoption of more consultation and participation mechanisms (Perreault 2015; De Munter *et al*. 2019, 30). Moreover, several recent initiatives could not prevent the lake's conversion into a marshy salt pan. From 2012 to 2015, the EU ran a major development cooperation program "for the Sustainable Management

[10] Examples are the 1986 project to use the Desaguadero River for irrigation purposes in agricultural communities north of the lake, the 1990 Emergency and Prevention Program against Drought (both by CORDEOR), or the 1990s "Master Plan for the Management of the TDPS System's Water Resources" to address the impact of fluctuating inundations and droughts. Project reports in the Archive of the Departmental Government of Oruro.

[11] See also the Archive of CEPA, Oruro.

of Natural Resources of the Lake Poopó Basin" (Vazquez 2018). Yet, during the program, the lake was legally declared an emergency zone twice. Meanwhile, Uru communities report how macro-economic interests and projects implemented "from the desk" continue to eclipse local needs, knowledge practices and decision-making (personal communication CEPA).

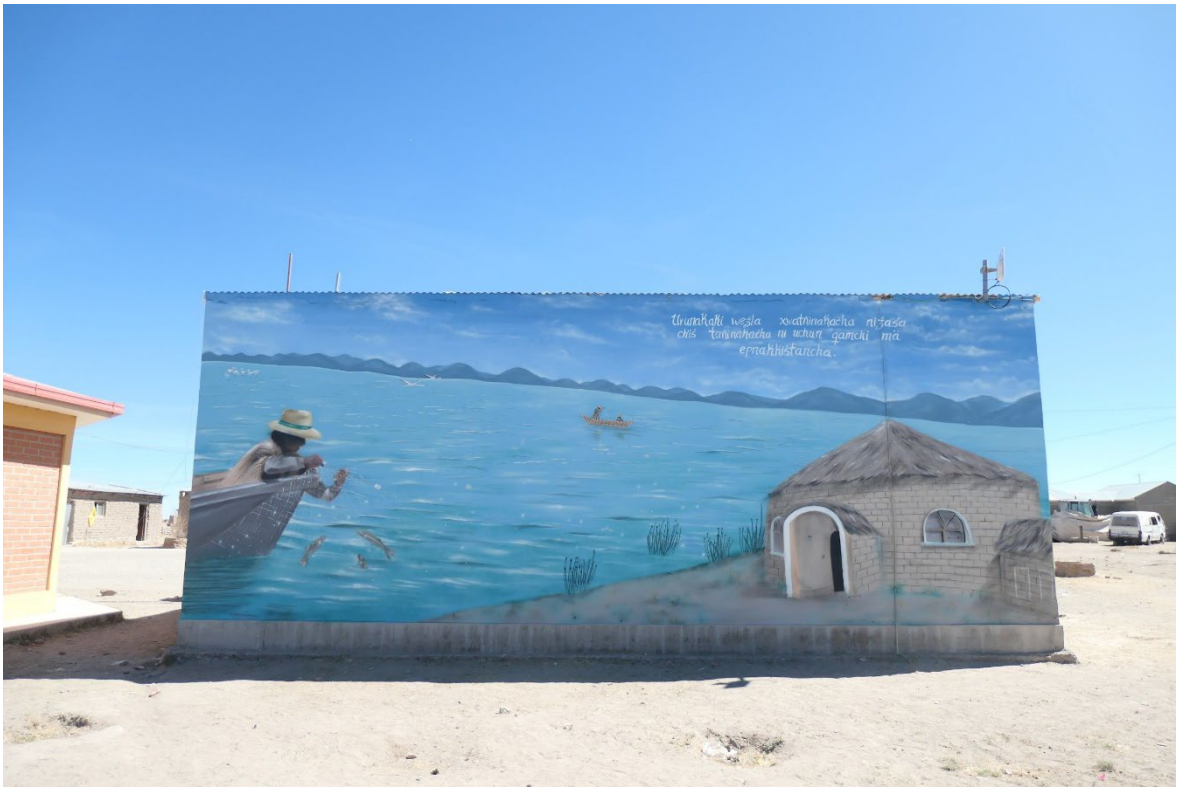

Figure 2: Mural remembering the lake and "ancestral" fishing and hunting practices in the village of Vilañeque, August 2022. Credits: Author

5. Concluding thoughts: Co-creating water knowledge with a dying lake

Recent landscape transformations in the Lake Poopó basin have led to a reappraisal of knowledge practices and co-creation initiatives to "protect, strengthen, and disseminate the knowledges, ancestral wisdom and forms of life" of the Uru (Bolivia: Ley No 1255, 2019). This article has sought to demonstrate how these efforts demand a historicizing and entangled perspective. It has exposed the diverse ways in which people interpret and respond to environmental change as the situated outcome of historical and more-than-human encounters and exclusions. In the face of colonial processes of exploitation and dispossession, marginalized communities deployed specific knowledge practices that allowed them to survive as "people of the water" outside the confines of the state and Aymara labor control, with *totora* plants and other lake inhabitants as key allies. Informed by essentialist dualisms, neo-colonial reorganizations and decontextualized development concepts have sidelined, essentialized or instrumentalized other possible knowledges, reducing the lake and its surrounding communities as passive containers of water and ancestral knowledge respectively.

As anthropologists De Munter and colleagues observe, many scientific analyses and policy responses to the transformation of Lake Poopó continue to reproduce this framing of the lake as a quantifiable body of water that straightforwardly translates into a set of cultural expressions (De Munter *et al*. 2019). They argue that what is at stake is not the conservation of water as a resource or Uru culture as authorized heritage, but instead the intimate and dynamic correspondence between natural and cultural worlds. Overlooking these entanglements as situated processes of knowledge production often results in a passive framing of Indigenous peoples as being "at risk" and in need of top-down governance interventions (Ford *et al.* 2020). Without intending to minimize the risks faced by the Uru, interventions should not aim at tying the Uru's faith inextricably to that of a dying lake, but at safeguarding historical (land) rights and more-than-human alliances in order to continue to creatively respond to highly unstable rhythms, and often irreversible transformations.

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