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Food Sovereignty and the Quinoa Boom in Bolivia

Tanya Kerssen

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Abstract

Bolivia has made great strides towards incorporating food sovereignty into its legal framework and political discourse. Nonetheless, tensions remain between the discourse of food sovereignty and how it plays out on the ground—particularly in indigenous territories which have been historically marginalized within the state. This paper examines the history and contemporary development of a commercial quinoa sector in the southern altiplano of Bolivia. Risk management and dietary diversity in Andean food systems has always gone hand in hand with the ayllu system, based on reciprocity, communal resource management, and access to foods produced in various ecological zones. Various waves of colonial and post-colonial development either destroyed this system or condemned it to the most country's most marginal lands such as the southern altiplano. This marginalization paradoxically served to maintain a degree of autonomy vis-à-vis the state.

In the 1980s, the convergence of mechanization, new migration patters, trade liberalization and community organization created export market opportunities for quinoa—a protein-rich grain produced in indigenous agro-pastoral systems in the southern altiplano. Increased income from quinoa in a region with few on-farm or off-farm income-earning opportunities has helped peasants stay on the land and spurred a "repeasantization" of the region. However, this has led to new challenges—namely, resource pressures and the erosion of communal land management and ayllu governance. As both a flagship product in the country's development plan, and a crop produced by indigenous peasants, quinoa helps to illustrate the social, political and ecological contradictions inherent to food sovereignty discourse and practice in the country, and its development model more broadly.

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I. Introduction

A lot of people think that the government created the quinoa boom, but that's not the case. It's the producers, along with our clients and the consumers who said, "this is a healthy and nutritious product." But then, you know, things get politicized and they take credit for making it happen.

–Miguel Choque Llanos, National Association of Quinoa Producers (ANAPQUI)

Bolivia has made great strides towards incorporating food sovereignty into its legal framework and political discourse. Nonetheless, tensions remain between the discourse of food sovereignty and how it plays out on the ground—particularly in indigenous territories of the Amazon and altiplano regions which have been historically marginalized within the state. This paper examines the history and contemporary development of a commercial quinoa sector in

the southern altiplano of Bolivia. As both a flagship product in the country's development plan,[1] and a crop produced by indigenous peasants, quinoa helps to illustrate the social, political and ecological contradictions inherent to food sovereignty discourse and practice in the country, and its development model more broadly.

Grappling with Bolivia's current political juncture—and Latin America's "New Left" more broadly—is no easy feat. The ruling MAS party (Movement Towards Socialism) led by president Evo Morales came to power in 2006 on the heals of a five-year "left-indigenous cycle of insurrection" (Webber 2012). What followed has been an extraordinary political experiment, widely debated within and outside Bolivia on the left and the right—critiqued for being both too radical and not radical enough (Petras 2007); recognized for protecting the "rights of Mother Earth" and admonished as "neo-extractivist" (Achtenberg 2012); celebrated as a defender of indigenous peoples and lambasted for its disregard of indigenous territories (Brysk and Bennett 2012). The government has alternately described its new economic development model as "communitarian socialism" (Burbach et al. 2013) and "Andean-Amazonian capitalism" (García Linera 2006). Finally, its approach to food and agriculture policy has drawn on statist, neoliberal and radical concepts, converging uneasily during the second MAS administration under the banner "food security with sovereignty."

Upon closer inspection, however, the government's export-oriented development model, with increasingly strong ties to industrial agribusiness (especially soy), suggests that food sovereignty may be little more than a legitimating discourse—helping to distance the state from the (delegitimized) neoliberal model. While containing numerous ambiguities and complexities—far more than can be addressed in this paper—the quinoa sector, I suggest, serves a similar discursive function. It allows the state to associate itself with a smallholder economic "success story" and the modernization of a poor, indigenous region. As the above quote indicates, quinoa producers do not view state support (from this government or previous ones) as paramount to their success. But with the rapid expansion of quinoa, and the entry of new actors, national policies may be needed to curtail the extractivist tendencies within the "quinoa boom" and ensure sustainable, community-oriented development.

A number of researchers have made, and continue making, important contributions to understanding: the socio-economic dynamics of the quinoa sector (Laguna 2000, 2011, 2013); fair trade and mainstream quinoa value chains (Effel 2012; Laguna et al. 2006; Cáceres et al. 2007); environmental impacts and sustainability (Rojas et al. 2004; Jacobsen 2011; Winkel 2011; Orsag 2011); and crop diversity and seed conservation (Rojas 2009; Rojas et al. 2010; PROINPA 2011). By drawing on these and other secondary sources as well as field interviews with various actors in the quinoa supply chain, I hope to contribute to a contextualization of quinoa within the struggle for Bolivian food sovereignty. [2]

As global demand grows, quinoa prices climb, cultivation expands to new frontiers, and pressures on productive resources increase; the traditional custodians of the "golden grain of the Andes" face an uncertain future. How are Bolivian producers confronting this uncertainty? Do they view recent market transformations primarily as a boon to their livelihoods or a mixed blessing that brings new challenges? Is the development of the quinoa sector likely to contribute to local and national food sovereignty in a meaningful and sustainable way? These are the questions that guide this paper, as part of an ongoing research project on the (increasingly global) political economy of quinoa. The analysis presented here is far from conclusive. Rather, my aim is to lay out some avenues for future research and to welcome feedback from colleagues in the South and the North.

I begin by reviewing the social and historical context of food production in the southern altiplano, historically rooted in agro-pastoral strategies; access to other ecological zones; and communal resource management—a system that has been heavily marginalized over time. Then, I discuss the transformation of quinoa from a globally obscure "neglected and underused species" to a globally traded product with rising consumer demand in the north. Finally, I discuss pressures on natural resources and communal land management, which impede a sustainable "repeasantization" (Van der Ploeg 2008; Das 2007) in the southern altiplano.

II. A Brief History of Andean Agrarian Change: Marginalization of the Southern Altiplano

Bolivia is marked by drastic climatic variations over short distances: from the semi-arid to arid cordillera and altiplano in the West to the humid eastern mountain slopes and tropical rainforests to the East. Long before the Spanish conquest, a highly complex patchwork of land uses sustained large populations in this environment. This system emerged from pastoral societies that domesticated the Andean camelid (llamas and alpacas) around 7,000 years ago and subsequently established agriculture throughout the Andes. For millennia, politically independent pastoral societies traversed the North-South corridor of the altiplano with large pack trains of llamas exchanging ideas and products—such as salt, meat and fiber for potatoes, vegetables, coca and fish—with farming and fishing villages. The relationships developed by pastoralists with their sedentary trading partners became a form of kinship known as the *ayllu* that persists to this day. Over time this great movement of people, goods and genetic material among different ecological zones generated an extraordinary number of domesticated food crops and animals produced in non-contiguous territories, exploiting numerous ecological niches (Tapia 1990)—a system Murra (1956) famously described as a "vertical archipelago."

Higher elevations in this system were at a certain disadvantage: only about 20 percent of Andean food crops could be grown above 3,000 meters, while approximately 95 percent grew below 1,500 meters (Kolata 2013). But the high Andean plain (*altiplano*) developed vital subsistence crops including tubers such as potatoes, oca (*Oxalis tuberosa*) and isaño

(*Tropaeolum tuberosum*); and protein-rich "pseudo-cereals" such as quinoa (Chenopodium quinoa), kañawa (*Chenopodium pallidicaule*) and kiwicha (*Amaranthus caudatus*). Of these, quinoa was particularly well suited to areas with "high climatic risk" such as the southern altiplano—able to withstand levels of drought, salinity, wind, hail and frost in which other crops would perish (Hellin and Higman 2005). Due to its high nutritional value and agricultural versatility, quinoa spread from its center of origin in the Lake Titicaca basin of present-day Peru and Bolivia throughout the Andes, particularly during the reign of the Incas—who venerated the crop as *chisaya mama* or the "mother grain" (National Research Council 1989). Along with fresh and dried llama meat (*charque*) these crops are the foundation of the Andean diet.

Risk management and dietary diversity in Andean food systems went hand in hand with the ayllu system, based on reciprocity; seasonal migration to various productive zones; and long-distance trade to exchange products from different regions and elevations (D'Altroy 2000; Kolata 2013). The Spanish conquest of the 16th century, however, radically disrupted this system of "vertical" production and inter-ecological exchange. Population losses of up to 90 percent in some areas constituted a veritable demographic (and agrarian) collapse, while many survivors were dispossessed of their lands and forced to work in the mines and on haciendas. Furthermore, confused by the ayllu's discontinuous landholdings, Spanish administrators resettled Andean inhabitants into centrally located villages within bounded, contiguous territories (Kolata 2013). This constituted a form of imposed "legibility" (Scott 1998) that facilitated surveillance, taxation and labor conscription, but essentially terminated extra-local territorial control by the ayllus.

With low rainfall (110-250 mm annually), more than 200 frost days per year, and poor soils, the southern altiplano remained largely beyond the reach of the Spanish hacienda system. The region's marginal environment paradoxically served to create an autonomous space where traditional forms of collective resource management, local self-sufficiency and reciprocity could be maintained (AVSF 2009). Thus, the ayllu stayed most intact in the southern altiplano, while in more temperate parts of the country it was all but destroyed by the hacienda (Rivera Cusicanqui 1989). It should be noted peasants have recovered and revalued the ayllu in different regions and to various degrees over the last several decades, though they remain strongest in the southern altiplano. The creation in 1997 of the National Council of Ayllus and Markas of Qullasuyu (CONAMAQ)[1]—with the goal of strengthening highland indigenous self-governance and collective resource control—is indicative of the constant evolution and reclamation of indigenous identities and organizational forms.

[1] A marka is a higher level of indigenous governance composed of multiple ayllus. Qullasuyu refers to the largest *suyu* ("quarter") of the Incan empire, known as Tawantinsuyu ("land of the four quarters"), which encompassed the Bolivian altiplano and southern Andes.

In 1952, another radical transformation swept through Bolivia: a social revolution which succeeded in nationalizing the mines and abolishing the hacienda system, redistributing land to thousands of highland peasants in a "land to the tiller" agrarian reform program. The revolutionary state then required newly freed peasants to form agrarian syndicates (*sindicatos*) on former haciendas. The sindicato system linked landowning peasant communities to the state through patronage networks that rewarded political support with preferential access to land, infrastructure, price supports and food aid[2] (Yashar 2005). The agrarian reform and state-sponsored syndicalism did not transform the southern altiplano—where there had been few haciendas—to the extent that it did the rest of the highlands. There, pastoralism remained the primary economic activity, with grazing resources in the vast flatlands (*pampas*) managed communally; and agricultural use-rights on mountain foothills (*cerranías*) allocated by traditional authorities based on a family's subsistence needs. Under this system, "indigenous pastoral production was able for centuries to maintain a balance between demographic constraints and resource scarcity" (Dong et al. 2011: 9). Thus, communities remained organized as ayllus in the southern altiplano, but deeply marginalized by the revolutionary state, which viewed its rural political base as residing in the peasant syndicates.

Of course, by the late 1970s, even the state-syndicate relationship was defunct, as the military dictatorships focused on reconstituting the agrarian elite in the eastern lowlands. Under Hugo Banzer's rule (1971-1978), loans by the Bolivian Agricultural Bank (BAB) to lowland cotton, sugarcane and oilseed producers increased by 421 percent, and loans to cattle ranchers increased by 344 percent (Eckstein 1983). Meanwhile, peasants—comprising 90 percent of the farm population and concentrated on small landholdings in the western highlands—received a mere four percent of BAB funds (Ibid.). While the country increased its production of lowland commodities, shipments of US food imports increased, transforming patterns of domestic consumption and creating an acute structural dependence on imported wheat[3] (Healy 2001; Brett 2010).

The liberalization of the economy in the 1980s further marginalized peasant agriculture as the terms of trade for peasant-produced crops like potatoes, onions and barley rapidly eroded. Regional trade agreements such as the Tariff Union of the Andean Community of Nations (CAN) and agreements with Chile and Mercosur left peasants without protection (Pérez et al. 2008). Farm incomes lost an estimated 50 percent of their purchasing power between 1985 and 1998, recovering only mildly since 2002 (Ibid.). As throughout the global South, neoliberal

[2] This political "pact" between peasants and post-revolutionary governments lasted until the mid-1970s when a deadly peasant-military confrontation in the Cochabamba valleys marked the emergence of a politically independent peasant syndicalism, embodied in the creation of the Confederation of Peasant Workers of Bolivia (CSUTB) in 1979 (Klein 1982).

[3] Both food aid and commercial imports.

restructuring spurred dramatic rural out-migration. The severe El Niño-induced drought that hit the Bolivian altiplano between 1982 and 1984 also contributed to depopulating the countryside.

Throughout the colonial, republican and revolutionary periods independent ayllus continued to exist, but were increasingly relegated to the country's most marginal lands, unsuitable for agricultural modernization. Pastoralism, small-scale subsistence agriculture and collective resource management—characteristic of the southern altiplano—were denigrated as primitive indigenous forms that impeded the development of agrarian capitalism (Rivera Cusicanqui 1992; Dong et al. 2011). Peasant syndicates became the dominant mode of rural organization (and state political control) in the countryside after 1952. The historical marginalization of the southern altiplano from various waves of colonial and post-colonial "development"—and paradoxically, its relative autonomy vis-à-vis the state—provides important context for understanding the implications of the commercial quinoa economy in the southern altiplano, which emerged in the mid-1980s.

III. Quinoa Lost and Found (By Global Markets)

It is not too late to rescue these foods from oblivion. Today in the high Andes, the ancient influences still persist with rural peasants, who are largely pureblooded Indian and continue to grow the crops of their forebears… In local markets, women in distinctive hats and homespun jackets sit behind sacks of glowing grains, baskets of beans of every color, and bowls containing luscious fruits. At their feet are piles of strangely shaped tubers—red, yellow, purple, even candy striped… These are the "lost crops of the Incas."

–National Research Council, Lost Crops of the Incas, 1989

Over the last few decades, there has been a newfound interest in "neglected and underutilized species" (NUS) which, as in the case of quinoa, had long been marginalized by research institutions, development agencies and government programs more interested in global commodity crops. There are numerous such "neglected" crops in the Andes—for example, achira, arracacha, kañahua, kiwicha, maca, oca, pacay, tarwi, yacón and many others—that are little known outside the region (National Research Council 1989). A small cadre of committed agronomists and ethnobotanists, in the Andes and abroad, has been working for decades to promote these "lost crops of the Incas" (actually domesticated long before the Incas) due to their importance to peasant livelihoods and "promise for worldwide cultivation" (Ibid.). Unsurprisingly, quinoa's growing export market potential has recently attracted unprecedented research attention and resources to studying the crop's agronomic characteristics, adaptability to various ecological conditions, processing potential, etc.

While globally obscure, so-called neglected and underutilized crops—found throughout the world, but particularly the global South—play an important role in peasant and indigenous livelihoods. They are often integral to local food cultures and traditional food preparations; highly adapted to agroecological niches and marginal areas; and cultivated and used drawing on indigenous knowledge (Rojas et al. 2009). The use of these crops as a development tool to improve the livelihoods of peasant producers, however, faces a number of challenges. For example, they may be unknown or poorly understood by policymakers (who generally do not come from indigenous peasant backgrounds); lack policies and legal frameworks to regulate their use and distribution; lack technologies to ease the "drudgery" of labor-intensive manual processing; and disappear due to changing farming methods, urbanization and the loss of indigenous knowledge leading to genetic erosion (Ibid.).

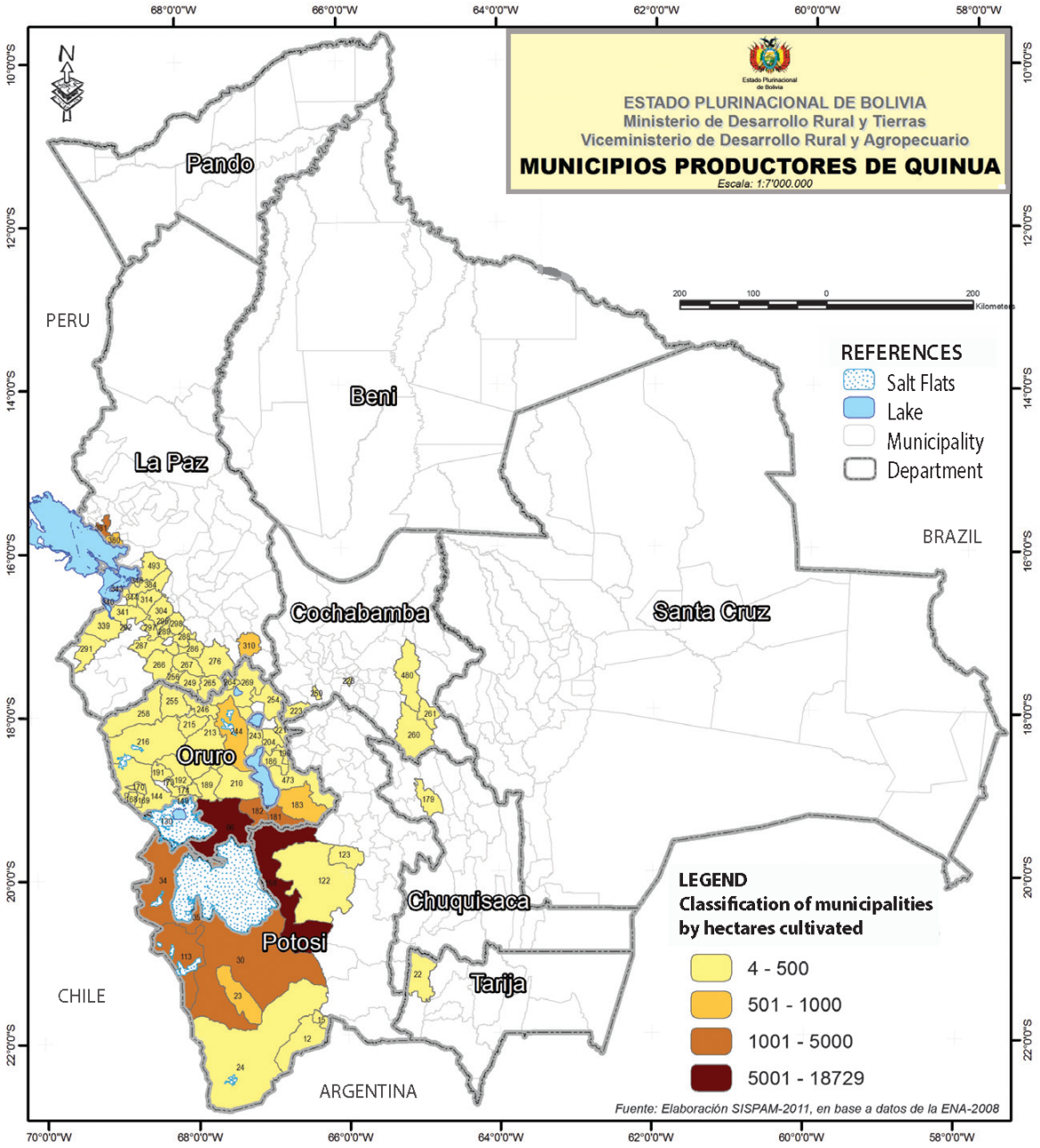
The quote at the beginning of this section from the National Research Council's "Lost Crops" project describes the bounty of fruits, vegetables, grains and tubers found in Andean peasant markets, raising the question: for whom are these crops "lost"? And perhaps more importantly, once they are "found," who shall they benefit? With regards to quinoa—which went from global obscurity to global "boom" over a relatively short time—these questions are far from resolved.

Quinoa's expansion is rooted in the introduction of tractors to the southern altiplano in the 1960s and 70s, which brought the subsistence crop down from hillside terraces to the flat scrublands, previously reserved for grazing. While the state focused primarily on industrializing agriculture in the tropical lowlands, some agricultural modernization credits were extended to highland peasants to purchase tractors and disk plows (Laguna 2000). NGOs and religious groups also promoted mechanization in the altiplano, aiming to raise the standard of living of indigenous communities by better utilizing local resources (Healy 2001). Belgian missionaries, for instance, established a tractor-rental service in the village of Nor Lipez. Local peasant leader Macario Bautista recounts:

> The hillside areas continued to be farmed by hand for quinoa and other food crops while quinoa's expansion took place mainly on the pampas. The Belgians did not explicitly foster quinoa but since that was the only crop we could grow on the pampas, tractorization promoted the expansion of quinoa as a cash crop. So for the first time we began using some of this vast pampas for agricultural production instead of only herding llamas on *thola* [shrub] vegetation. (quoted in Healy 2001: 163)

When the Belgians left in 1975, they turned over the assets and management responsibilities of the project to local communities organized as a new cooperative entity called CECAOT (*Central de Cooperativas Operación Tierra*). The National Association of Quinoa Producers (ANAPQUI) was created in 1983, and the two organizations became the country's leading producers'

associations primarily growing and marketing *quinua real* ("royal quinoa")—a large-grained ecotype grown along the shores of the Uyuni and Coipasa salt flats—which has since become the most prized quinoa on the global market for its large, white grain (> 2.2 mm) and high nutritional value.[4]



Map 1: Quinoa-producing municipalities of Bolivia, by hectares cultivated. The dark red and orange areas indicate the main exporting region in the southern altiplano. (Source: Bolivian Ministry of Rural Development and Land)

[4] Rojas et al. (2010) identify five quinoa "ecotypes" associated with different Andean regions: sea level (primarily coastal Chile); yungas (1,500-2,000 m); valleys (2,500-3,500 m); northern and central altiplano (Peru and Bolivia; where the highest diversity is found); and salt flat quinoa or "*quinua real*" of the southern altiplano of Boliva.

Following the implementation of the neoliberal New Economic Plan (NEP) in 1985, quinoa prices began to increase—in sharp contrast with other peasant-produced crops, which were falling in value. Soon after, the privatization of state mines in 1986—widely seen as the death knell of the 1952 revolution—laid off thousands of miners, many of whom relocated to the cities or to the tropics to plant coca. Others returned to their native communities in the southern altiplano to grow quinoa (Laguna 2000). These events coincided with the growth in global demand—particularly from the global North—for specialty fruits and vegetables, organic products and health foods, which unleashed the non-traditional agricultural export (NTAE) boom in the global South (Thrupp 1995). In this context, the demand for Andean quinoa products has grown, especially in the US, Canada, the Netherlands, Germany, France and other parts of Europe.

CECAOT started exporting quinua real to the US-based Quinoa Corporation in 1984—a company that pioneered the quinoa market in the US. One of the company's goals was to revalue quinoa as a neglected food crop, not only in the US, but also in its place of origin. By spreading quinoa consumption in the US, the logic went, Latin American elites might take note of its virtues—as opposed to its racist and classist associations—and enact policies to revalue the crop and promote its domestic consumption (Laguna 2006). They figured that if quinoa consumption was accepted in the US (symbol of progress and modernity) they might succeed in remaking its image:

> For the founders of the Quinoa Corporation, this was a necessary step that would eventually contribute to the food security of poor Bolivians, subjected as they were to a nutritionally inferior dietary regime based on highly-subsidized wheat products through US food aid. They hoped to increase internal demand and sales of quinua real, while at the same time contribute to improving the incomes and quality of life for indigenous producers of the southern altiplano. (Laguna et al. 2006: 68; author's translation)

To be sure, the expansion of export markets has dwarfed any increase in domestic demand, though it is difficult to measure to what extent quinoa may now be experiencing a genuine (and lasting) cultural renaissance in Bolivia among urban residents and non-producers. But this example is nonetheless illustrative of the "values-based" relationships—based on a kind of (real or perceived) solidarity—between Bolivian producers' associations and their Northern buyers that appears to have characterizes the quinoa export sector at its inception. This foundational aspect of the global quinoa market sets it apart from other NTAEs, dominated from the start by corporate interests with little local participation or input. [5] The extent to which this dynamic has

[5] See Laguna (2002), Laguna et al. (2006), and Cáceres et al. (2007) on the challenges producers' associations face in competing with new private sector actors in a globalized quinoa economy.

shifted with the entry of more and new private sector actors in recent years is an important question for ongoing research.

Despite access to markets in the 1980s, growth was still heavily constrained by the time-consuming processing quinoa requires, including threshing, winnowing and washing or "de-saponifying"—i.e. removing the bitter-tasting, mildly toxic coating known as saponin from the grains. These processes were carried out through a combination of rustic machinery and traditional, manual labor making it difficult to process large quantities of grain and achieve levels of quality and uniformity required by international markets. Grain selection and removal of impurities—such as small rocks, dust, traces of saponin, even bird and rodent droppings—was particularly challenging, especially when drying the washed grain outdoors. Processing limitations were an important barrier not only to export markets, but to domestic consumption as well. In the urban areas, where rice and pasta had become staples by the 1970s, quinoa tasted bitter by comparison, and often contained small rocks. Urban residents and consumers in non-quinoa producing regions did not know how to wash or prepare it properly, contributing to the crop's unsavory reputation as a "dirty" food associated with peasants and Indians—with the racist and classist implications this entails.

With little external support, CECAOT formed its own committee for industrializing quinoa processing, traveling to Peru to seek out new technologies and eventually building its own quinoa de-husker based on a barley-hulling machine (Healy 2001). At first, the machine succeeded in removing only 60-70 percent of the saponin coating, so they continued making improvements by trial and error (Ibid.). Similarly, ANAPQUI members worked tirelessly to improve processing methods, even traveling to Brazil carrying sacks of quinoa with them to test out rice and soy processing machines.[3] In the 1990s, bilateral and multilateral aid began funding research and development of industrial processing technologies. The United Nations Development Programme (UNDP) financed the construction of processing plants for ANAPQUI and its four regional organizations and in 2005, USAID and the Danish Development Agency (DANIDA) funded new energy and water-saving technologies that improved the removal of impurities and quality of the final product (Laguna 2000).

A number of factors, then, converged for quinoa exports to take off in the 1980s: the mechanization of production; the consolidation of producers' associations; the personal interest and commitment of "values-oriented" investors; trade liberalization; and the increased consumption of healthy, organic and exotic foods in the North. The producers' associations began selling small volumes to European and North American buyers in the mid-1980s. Once initial markets had been established, international aid became important in improving processing technologies. While ANAPQUI and CECAOT had dominated the quinoa sector, the late 1990s saw the entry of new private sector actors eager to profit from global demand and

increasing prices. National and foreign companies like Jatary, Andean Valley, Quinuabol, Quinua Food and Saite—who acquire raw material through independent producers (outside the associations) and increasingly, through supply contracts with whole communities—began competing with the producers' associations for export markets (UNIDO 2006). These new actors—as well as a strong black market for quinoa—have eroded to some degree the control producers once had over the quinoa value chain.

The emergence of quinoa as a globally traded crop in the 1980s was arguably paramount to ensuring peasants' reproduction on the land in the southern altiplano. This occurred at the height of neoliberalism, which was eroding livelihood options, especially in the countryside, creating flows of migrants to cities, coca-growing areas and a swelling informal economy. "Found" by global markets, quinoa helped to address the long-standing marginalization of the southern altiplano, but by incorporating the region into global markets, new and profound challenges have emerged.

IV. The Quinoa Boom: Ecological Limits and Conflicting Rationalities

Pressures on soil fertility

Before, my grandparents always had manure, from sheep and llamas. My grandmother would say, "Someone get over here and clean out this corral!" Not many people had pickup trucks back then, just a few people. When they came she'd give them the manure for free. But today it's very different. A truckload can cost you 2,000 to 3,000 bolivianos [$385 - $430]. Manure produces better quinoa, so everyone wants it.

—Adrián, quinoa producer[4]

The southern altiplano is now the fastest expanding region of quinoa cultivation in Bolivia. High producer prices for quinoa relative to other smallholder crops skyrocketed in 2008, more than tripling between 2008 and 2010 (see chart 1). This spike has promoted the expansion of the agricultural frontier, more than doubling the area planted in four years—from approximately 51,000 hectares in 2009 to a projected 104,000 hectares in 2013 (Fundación Milenio 2013). This poses a potential threat to the fragile, sandy and volcanic soils of the southern altiplano, which are characterized by high salinity, a scarcity of organic matter, and low moisture retention capacity. A number of studies have expressed concern over the expansion of the quinoa frontier and its impact on long-term soil fertility (Rojas et al. 2004; FAUTAPO 2008; Winkel 2011).

While the hillsides contain higher amounts of clay, organic matter and nutrients than the flatlands, many hillside plots are now abandoned, as farmers prefer to cultivate the pampas with tractors. Producers' associations are also, understandably, concerned about this issue and

are working with the support of a number of NGOs to implement soil management techniques and regulations. However, government-sponsored mechanization—as part of its National Quinoa Development Plan with a heavy focus on industrialization (MDRyT 2009)—could undermine efforts to promote sustainability (Jacobsen 2011). In a public ceremony in early February, for instance, President Morales presented 65 John Deere tractors to communities in the department of Oruro to promote the further expansion of quinoa.[5]

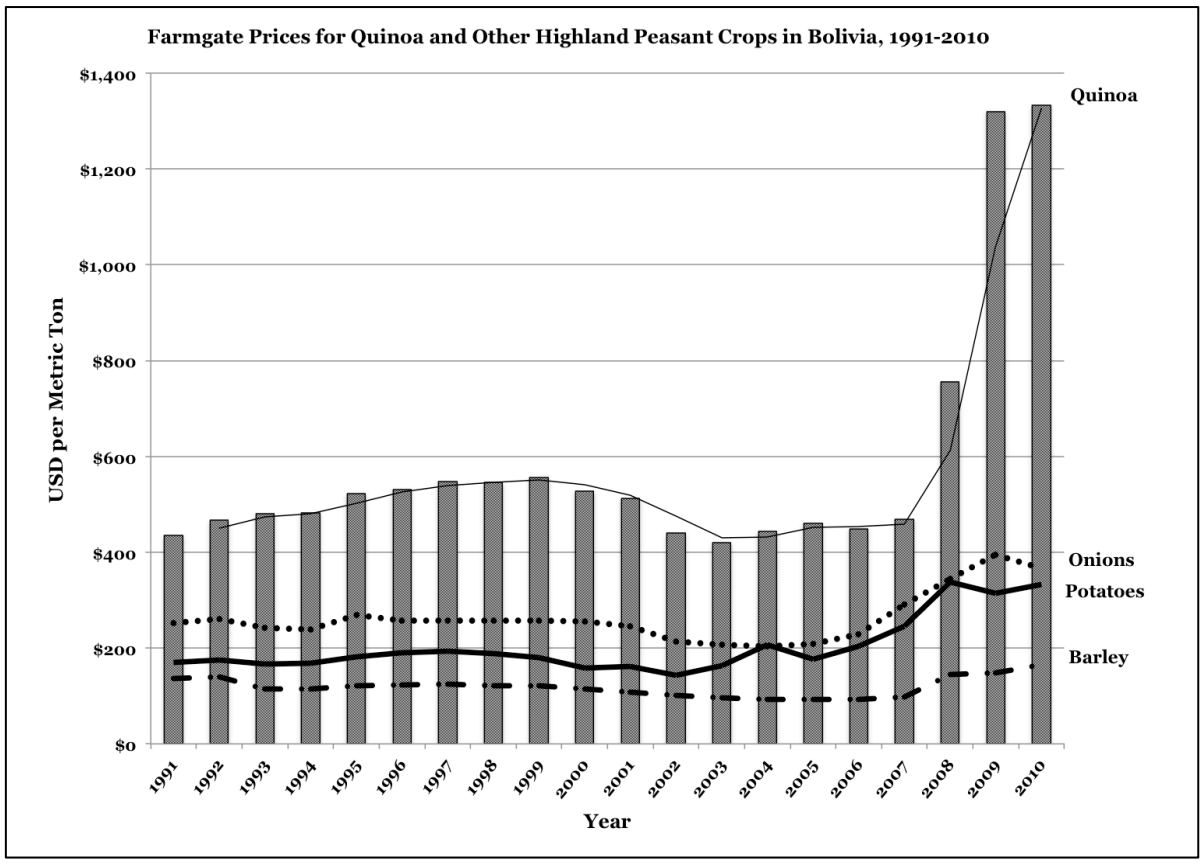


Chart 1. Farmgate prices for quinoa and other highland peasant crops, 1991-2010 (Constructed by the author with data from Faostat.org)

Until the introduction of tractors in the 1970s, pastoralism had been the primary economic activity of the southern altiplano, providing critical fertility for subsistence quinoa plots. Indeed, the relationship between quinoa, llamas and humans represents an ancient and pervasive form of symbiosis (Kolata 2009; 2013). Higher prices in the 1980s, however, motivated families with larger herds to sell their llamas or sheep in order to invest in machinery and expand quinoa production on communal grazing lands (Laguna 2000). A shortage of labor due to out-migration also stimulated the shift away from animal husbandry, which requires daily care and is ultimately less remunerative (Ibid.). Based on community interviews in the inter-salar, Acosta Alba (2007) notes that "before the great expansion of commercial quinoa production, all of the

producers had mixed herds composed of llamas, sheep and sometimes alpacas. Today, one fourth of the families interviewed have no animals" (17).

The reduced area, pasture and labor time devoted to pastoralism has begun to generate a rupture in the "quinoa-camelid complex" which has been acutely felt, for example, in the high cost of animal manure. The value of animal manure, meat and fiber, however, has thus far not made pastoralism profitable enough—considering its high labor costs—to help it compete with quinoa and recover the ecological balance between crops and animals. Additionally, fallow periods of six to eight years have given way, in some areas, to near continuous production (Rojas et al. 2004) and by loosening the subsoil, the use of disk plows and sowing machinery has created a more favorable environment for pests, such as the polilla de quinua (*Eurysacca quinoa*) and the ticona complex (*Copitarsia sp.*) (Jacobsen 2011). Many producers have assimilated these various experiences into an integrated analysis of soil fertility and vulnerability:

> A lot depends on the fertility of the soil. If the soil is fertile, the plant is pretty resistant, and pests don't attack it as much. So I've come to the conclusion that it's just like with humans. If a child is well fed, for example, she's less likely to get sick. But a child who's undernourished is vulnerable to getting a cold or other illness. So it's the same with the quinoa plant.[6]

The producers' associations provide technical support for sustainable production, with the support of foreign and Bolivian NGOs such as FAUTAPO, PROINPA and PROBIOMA. Government policy interventions with regards to the quinoa sector have been slow, and many farmers and researchers voice their frustrations with the state's hands off approach, despite legislation that in theory promotes soil conservation, organic agriculture, integrated rural development, etc. The challenge of sustainability, however, is not merely a technical question. It is tightly linked—as it has been for millennia—to culturally embedded organizational forms that mediate resource use and allocation. Having survived for centuries on the margins of colonial and post-colonial development, the ayllu now faces profound transformations.

Conflicting rationalities and community norms

There have been problems in the communities. Many producers were farming a piece of land for years, when suddenly someone arrived out of the blue to claim it. These problems occurred within families too. Sometimes people showed up that no one in the community had even seen before.

—Sergio, quinoa producer[7]

The quinoa sector is often hailed for its contributions to a kind of "repeasantization" (Das 2007; Van der Ploe 2008) of a region previously hollowed out by out-migration—as people return to their communities after years or even generations—infusing youth and dynamism into the countryside. Out-migration had left the region inhabited primarily by elderly people, lacking the resources and labor to invest in the communities. Arturo, a quinoa producer who returned to his father's community to plant quinoa five years ago, comments:

> I'm returning now to my ancestors' land. My father had left the village in the fifties. He always stayed in touch with his roots though, even though he didn't produce much, just enough for the family. Now, with quinoa I'm going back. It's been five years now that I've been going back. A lot of people had left the community.[8]

Arturo lived his entire life in La Paz—and in fact still lives in La Paz—but now regularly travels to the southern altiplano to tend his quinoa field in his father's native village. He was not welcomed with open arms when he first arrived. Not knowing exactly where his family's land was located, he found it difficult to get answers from community members. "I did my best to recover what I could," he says, "but not all of it, because people in the community clam up and won't give you any information. They know, but they'd rather not say anything." Despite the initially icy reception, Arturo was profoundly touched by the reconnection to his rural roots:

> I've always tried to tell my kids where we come from. This has been a really special experience for me—"going back" to a community I've never even known. When I got there, it was like finding myself. This is my land. This is where I come from. For example, in the community, everyone has the same last name as me, even though we're not related! Or maybe we're related from five or six generations ago, but this had a big impact on me. It's the first thing I told my daughters when I got back. Now I know where I come from, who I am.[9]

Arturo and his father are characteristic of a common Andean phenomenon of double or even triple residency. Those who have left their native communities—but who have not abandoned their lands—are paradoxically known as "*residentes*." This generally refers to the fact that they have become urban residents who no longer live in the countryside (Urioste F. de C. 2005).[6] This is a form of pluriactivity—possibly maintaining a small amount of production in absentia or tended by an elderly family member—while earning an income in the urban economy. Residentes may also rent out their land to another member of the community in a form of sharecropping called "*al partir*" in which the landholder and the producer share the harvest 50/50. Double residency is also a kind of risk-aversion that allows for the possibility of returning

[6] Those who have moved to another *rural* region—generally migrating from the highlands to more tropical elevations—are not referred to as residentes, but rather as "*colonizadores*" or settlers (Ibid.).

to subsistence farming if needed; abandoning or selling one's land is an act of great finality that is not done without a secure economic alternative or access to land elsewhere (Ibid.)

To be a residente, indicates Urioste (2005), is to have a double identity: one that is urban, anonymous and independent, and another that is rural, communal and constrained by the norms and customs of the community or ayllu. Residentes generally have adopted a more entrepreneurial rationality. Notably, national and departmental leaders, even leaders of the largest peasant movements, tend to fall under this category. Maintaining land, but becoming ever more alienated from community life, these leaders are increasingly questioned by community-based peasant producers (Ibid.).

Those who remain in the community, by contrast, are known as "estantes." With regards to quinoa production, there is an apparent clash of rationalities between "those who stayed" and "those who left" (and have recently returned); in other words, those who live in the community (estantes) as opposed to those who farm in the community (residentes). First, depending on their ongoing degree of contact with the community, "returning" migrants are often seen as having neglected their responsibilities—such as road-building or taking on rotating leadership posts—while they were away. In order to access their lands again they may be asked, for instance, to retroactively help fund a past project. Second, many residentes manage their production remotely, neglecting long-standing community norms—e.g. regulating fallow periods and crop rotations—in order to plant a larger area to quinoa, leading to numerous intra-community and even intra-familial resource conflicts (AVSF 2009). According to the Vice-Minister of Rural Development and Land, approximately 30 percent of the country's 70,000 or so quinoa producers are people who have returned to the communities attracted by its high price and planting it "just for profit" neglecting traditional farming methods.[10]

When asked how quinoa markets have changed community life, Sergio, a quinoa producer and estante, gives a complex answer that points to the tension between estantes and residentes:

> Quinoa has improved our quality of life. Before, when the price was low, people left, migrated to the cities, they became residentes and we barely saw them anymore. But with the increase in prices, those people have returned—as strangers.
>
> *[Has this been positive for the communities?]*
>
> No, it's been negative, because they just came back for the price. It could be that in some places [it's been positive]. But from what I've seen here it's problematic. They come to plant, and then they come for to harvest, but the rest of the year they're nowhere to be found. Some even come to harvest too late, when the quinoa is drying out in the fields and already going bad. They just leave it like that. They just don't value it. People here have their customs, no? Their beliefs. Sometimes people say, "They're

> making the quinoa suffer! Because of this, it won't rain this year. Things are going to go poorly for us because of the residentes."[11]

In addition to migration, the expansion of commercial quinoa production has entailed the introduction of new technologies (tractors) and forms of organization (producer cooperatives) which have fostered inequality and undermined ayllu communal governance in the southern altiplano. In a study of the community of Puqui, Laguna (2000) observes that immigration and the appearance of new institutions such as ANAPQUI to support agricultural production contributed to the erosion ayllu governance and the authority of traditional indigenous leaders. The shift from a primarily communal, pastoral system—with use rights allocated to households for subsistence agriculture—towards a commercial agriculture served to individualize natural resource management in the community. As pastoralism became increasingly a household activity—with pastoral families now managing their own small herd—as opposed to a communal activity, the extensive extra-household linkages that regulated grazing rights and reciprocal labor exchange were weakened (17).

Still, land in the inter-salar region is not individually owned, but rather held as an indigenous territory under a communal title known as a "communal territory of origin" or TCO (*Tierra Comunitaria de Origen*), a form of land tenure created by the 1994 land reform law. In theory, this should protect indigenous lands from outside profiteers. The issue, however, has not been outsider "land grabs" but rather changing mechanisms (and technologies) of land control, which allow individuals with membership ties to the indigenous community (either as estantes or residentes) to expand production, in some ways constituting more of a "fertility" grab:

> Prior to mechanization, the criteria for determining a family's access to land corresponded to the family's size and capacity—in other words, the number of bodies it had [to work] and mouths it had to feed. So the community [ayllu] would allocate a parcel, the size of which varied in direct proportion to the number of family members and their needs. Now, the big shift is that it's the amount of capital the family has that determines how much land it can control, because capital means the ability to invest in mechanization. So with a tractor you can cover quite a bit of land, maybe 40 or 50 hectares or even more. So there's a bit of a spiral that makes the community controls break down, especially the ancestral norms that once regulated access to land.[12]

Despite increased opportunities to live—and to live from agriculture—in the southern altiplano thanks to quinoa markets, there is a tension between the community-based logic of estantes and the seemingly more extractivist logic of residentes (AVSF 2009). There is also an increasingly individualized notion of land use, provoked in part by mechanization, which is no longer as responsive to communal norms governing sustainable practices. This serves to undermine indigenous governance and create a chaotic, unregulated expansion of the

agricultural frontier, suggesting that "quinoa repeasantization" is not a sustainable phenomenon. While the challenges are great, however, it is far from certain that an extractivist logic will prevail. There is widespread awareness among producers of the threats to sustainability and social cohesion, and increasing discussion at the communal level regarding how to devise ecologically and culturally appropriate solutions. Particularly promising are projects that facilitate community workshops—bringing together both residentes and estantes—to recover ancestral norms such as the traditional system of sectoral fallowing (*mantos*) and re-institutionalize them. Fostering this kind of dialogue is no small achievement, as just tracking down residentes is a challenge in and of itself. One producer comments:

> Since the expansion of the agricultural frontier, people were planting more, wiping everything out, and the community was a mess. For example some farmers have livestock and others don't. The quinoa was expanding like crazy and it's the livestock that suffered most. At the same time, some producers were planting in the same plot of land successively [without fallow]. So the communities got together to develop communitarian norms where we re-instituted mantos. We started this five years ago with support from the NGO AVSF. It's worked well in many places.[13]

V. Can Quinoa be a Tool for Developing Food Sovereignty in Bolivia?

Over the last three decades, the movement for quinoa producers' "right to produce" and maintain their livelihoods on the land has been sustained by export markets. Through the grassroots initiatives of peasant organizations and other civil society actors, a market for this "neglected and underutilized" crop was generated with little state support, benefitting communities of the southern altiplano in the short term, but creating steep new challenges. These challenges link questions of ecological sustainability with indigenous governance and resource management, which must be addressed in an integrated way. The anthropologist Alan Kolata has shown, for instance, based on archaeological evidence, that the Andes once sustained much larger populations than they do today—primarily using traditional indigenous systems such as terracing and raised fields that mitigated frost and sequestered nutrients. Thus, he is optimistic that quinoa production could be sustainably increased in the altiplano, but not via Western-style modernization:

> We must be certain that current technologies of intensive production, such as disc plowing, do not exacerbate the critical problem of soil erosion. That is, Western-trained agronomists and development specialists may be well advised to overcome their ethnocentric stance in perceiving environmental possibilities, to evaluate with an inquisitive, rather than a dismissive eye the cultural practices of indigenous populations that reflect a distinctive knowledge-base of agroecological practice, and not trivially, to pay attention to the lessons of history. (Kolata 2009: 13)

While the current government espouses a "food sovereignty" rhetoric, it has not shown much political will for generating policies that reduce dependence on food imports; shift the balance of power away from industrial agribusiness; and generate domestic markets for quinoa and other Andean smallholder products. Rather, the focus has been on mechanization and industrialization, without an integrated vision that strengthens indigenous communities and their government structures. This may be, in part, because of its political orientation is more closely aligned with that of agrarian syndicates, rather than territorially-based indigenous forms such as the ayllu. This was vividly manifested in 2011 when CONAMAQ—the federation representing highland ayllus—splintered (along with the lowland indigenous group CIDOB) from the "Pact of Unity" that united the country's five largest rural movements in support of the government.[14] Despite these political cleavages, however, there are promising grassroots organizing efforts in the southern altiplano, both at the level of producers' associations and at the level of indigenous ayllus. CONAMAQ has been calling for the government to prioritize domestic consumption of quinoa as a means of strengthening cultural identity and tackling malnutrition, linking issues of community-based territorial management, domestic markets and health.[15] And many ayllus are now working to recover and strengthen traditional norms for territorial management by putting them into writing, adapting them to current conditions and (re)institutionalizing them in the context of contemporary ayllu governance.

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[1] See MDRyT (2009)

[2] Eighteen semi-structured interviews were conducted over a four-month period (mid-March through mid-July 2013) with various stakeholders in the quinoa sector, including producers; the private sector (importers, exporters and financial institutions); and key experts from the academic and NGO sectors. Participant observation included three visits to the southern altiplano quinoa growing region, known as the "inter-salt flat" or *inter-salar* (March 2012, March 2013 and July 2013) and three trips to the northern altiplano quinoa growing region, on the eastern shore of Lake Titicaca (March 2012, December 2012 and March 2013). Participant observation also included attendance of two quinoa research conferences with over 150 participants, including producers, private sector representatives, policymakers and researchers of various disciplines (Congreso Científico de la Quinua, June 14 – 15, 2013 in La Paz, Bolivia; and the International Quinoa Research Symposium, August 12 – 14, 2013 in Pullman, WA, USA). Expert/NGO sector interview subjects were selected for their field-based experience in the inter-salar and recognized expertise in the agroecological and socio-economic characteristics of Bolivian quinoa. Producer interview subjects were primarily selected by referral from NGO workers and other producer respondents. All producer interviews were conducted with farmers from the inter-salar region—the primary zone of Andean quinoa expansion for commercial cultivation and export. Interview subjects were asked open-ended questions intended to obtain their views regarding the so-called 'quinoa boom' framed around four overarching themes: economic impacts; social and cultural impacts; environmental sustainability/degradation; and the role of state.

[3] Miguel Choque Llanos, Marketing Director of ANAPQUI, personal communication. La Paz, Bolivia. July 22, 2013.

[4] Adrián, ANAPQUI member, personal communication. Salinas Garci de Mendoza, Oruro, Bolivia. July 18, 2013

[5] "Gobierno entrega 65 tractores a las 35 alcaldías de Oruro para apoyar producción agrícola" La Razón, February 6, 2013. http://www.la-razon.com/economia/Gobierno-tractores-alcaldias-Oruro-produccion_0_1774622640.html

[6] Adrián, ANAPQUI member, personal communication. Salinas Garci de Mendoza, Dept. of Oruro, Bolivia. July 18, 2013

[7] Sergio, COPROQUIR member (regional chapter of ANAPQUI), personal communication. Irpani, Dept. of Oruro, Bolivia. July 19, 2013.

[8] Arturo, independent quinoa producer, personal communication. La Paz, Bolivia. June 10, 2013.

[9] Arturo, *Op Cit.*

[10] "La quinua bajo presión del mercado y la tradición" Los Tiempos, February 19, 2013. http://www.lostiempos.com/diario/actualidad/economia/20130219/la-quinua-bajo-presion-del-mercado-y-la-tradicion_202801_433458.html (this quote should be taken with a grain of salt, however, as I have not found the source of this statistic, and public officials are inclined to embellish)

[11] Sergio, Op Cit.

[12] Sarah Metais, National Coordinator of Agronomes & Veterinaires Sans Frontiere (AVSF), personal communication. La Paz, Bolivia. May 27, 2013.

[13] Sergio, Op Cit.

[14] "CONAMAQ abandona el pacto de unidad" La Prensa, December 22, 2011. http://www.laprensa.com.bo/diario/actualidad/bolivia/20111222/conamaq-abandona-el-pacto-de-unidad_15319_25183.html

[15] "Según el CONAMAQ: El gobierno debe priorizar consumo interno de quinua" El Potosí, March 18, 2013. http://www.elpotosi.net/2013/03/18/19.php