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Quinua or Quinoa? Transformation, certification, and the contestation of the commodity chain on the Bolivian altiplano

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Abstract

The rise in popularity for quinua in the Global North, known as the quinua boom, has created an incredible transformation on Bolivia's altiplano. Over a short period of time, quinua has transitioned from a subsistence crop to an international luxury commodity. By placing the boom in a wider historical context, and detailing two distinct commodity chains through which quinua might flow, I show that the "ecological harmony" championed by the organic commodity chain has not delivered all that it has promised. Despite the long list of standards designed to ensure that quinua is grown organically, the quinua boom has changed the metabolism of production, and produced new natures. Additionally, these standards, enforced by distant and powerful private actors in the Global North, create exclusions as producers are unevenly able to comply with norms, and cope with increasing pest populations and issues of soil degradation. Importantly, certain producers and other actors in Bolivia contest this commodity chain and assert an alternative one in the form of a Denomination of Origin. Placing these commodity chains side by side highlights the power asymmetries of transnational organic agriculture. As some producers, along with the state, reject the organic commodity chain, and envision a new system of governance in which local labor practices, ecology, and culture determine the metabolism between society and nature, these actors call into being the ways in which the organic commodity chain reproduces asymmetrical power relations.

QUINUA OR QUINOA? TRANSFORMATION, CERTIFICATION, AND THE CONTESTATION OF THE COMMODITY CHAIN ON THE BOLIVIAN ALTIPLANO

by

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Appendix of Acronyms

AAFN	Alternative Agri-Food Network
ANAPQUI	*Asociación Nacional de Productores de Quinua,* National Association of Producers of Quinua
AOBEB	*Asociación de Organizaciones de Productores Ecológicos de Bolivia,* Association of Organizations of Ecological Producers of Bolivia
APQUISA	*Asociación de Productores de Quinua Salinas,* Association of Producers of Salinas Quinua
CECOAT	*Central de Cooperativas Agropecuarias Operación Tierra*
CEDLA	*Centro de Estudios para el Desarrollo Laboral y Agrario,* Center of Studies for Labor and Agrarian Development
CELSS	Controlled Ecological Life Support System
CSUTCB	*Confederación Sindical Unica de Trabajadores Campesinos de Bolivia,* United Confederation of Peasant Workers Unions of Bolivia
DO	Denomination of Origin
FAO	Food and Agriculture Organization (United Nations)
FAUTAPO	*Fundación Autapo,* Foundation Autapo
GI	Geographic Indication
INE	*Instituto Nacional Estadistica,* National Statistical Institute
MAS	*Movimiento al Socialismo,* Movement for Socialism
MDRyT	*Ministerio de Desorollo Rural y Tierra,* Ministry of Rural Development and Land
MNR	*Movimiento Nacionalista Revolucionario,* Revolutionary Nationalist Movement
PROINPA	*Promoción e Investigación de Productos Andinos,* Promotion and Research of Andean Products
SIC	*Sistema Interno de Control,* Internal System of Control
TPC	Third Party Certification
USDA NOP	United States Department of Agriculture National Organic Program
WIPO	World Intellectual Property Organization

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Chapter One
Introduction

Today, in a small town—nearly vacated—outside the city of Oruro, 25 or so quinua producers gathered for a *taller*[1] on organic quinua, and also to officially announce the creation of their association—an organization designed to protect its members, defray the costs of machinery, and disseminate information. The latter was especially important today at the workshop, which was lead by an *ingeniero*[2] and organic certifier. The certifier gave the group a short but no doubt useful talk about the process for organic certification, and many took notes.
Afterwards the group stood in a circle around the certifier outside the small house in which they had gathered to ask more detailed questions—the certifier handed out his card.
He broke away from the crowd and took down the enormous graphic he had brought, which detailed the process for organic production and certification in animations, and then he was on his way.
The group remained, however, with their documents registering their organization with the government, and talked about what they wanted for the group.
In the intense sun of the dry *altiplano*, I felt the dirt with my hands as I sat slightly outside their circle and listened. I couldn't help but notice how dry everything was and marvel at what kind of production could come of this arid environment.
As I sat there this morning, I also thought deeply about the efforts of these producers. They were laboring to organize, to understand what was happening to the market, to figure out some way to be a part of it and to maximize their profits in it. They were all small producers—some in traditional *originario* attire and others in jeans and a baseball cap.
I asked one of the organizers—a young man—if a lot of the producers want to be a part of the international market. He said yes—the prices are higher and there is more demand (July 9, 2016).

The above quote was taken directly from my own field notes that I scrawled on a bumpy bus ride after a small gathering of farmers in Bolivia. They, and many *quiñeros*[3] like them, gathered to figure out how to navigate the international market for quinua. They were organizing

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[1] *Taller* is Spanish for workshop, and is the word I will use to refer to this event heretofore.
[2] *Ingeniero,* the Spanish word for engineer, is a title given for technical/scientific degrees. This title was used almost exclusively for the man to whom I am referring. It is a term that expresses both his specialty in agriculture and respect. I will also use this word to refer to him in order to conceal his identity.
[3] *Quiñeros,* or the singular *quiñero,* is a word often used to refer to those who produce quinua.

in order to overcome an information gap: not only how to become certified organic, but also to learn more about how to grow quinua organically. To do so they use the advice of the ingeniero, a locally important man who also works at a medium sized factory as an organic certifier not far from the location where this taller took place. As I traveled back from the taller in a half-filled *trufi*,[4] I thought more about what the meeting represented, and a few questions began to develop that added to the growing list of queries I had about quinua production in Bolivia. Was certification difficult for producers? Was following the rigorous standards for organic quinua easy? Did these standards, the cost of organizing, and gaining certification mean some producers were left out? What could explain this information gap about growing quinua organically in a place that had grown quinua organically for thousands of years? Quinua had, after all, been almost exclusively a subsistence crop of rural indigenous campesino communities only a few decades before.

The altiplano I mention in the quote is a high desert-like plain at 12,000 – 14,000 feet elevation tucked between two chains of the Andes Mountains. To the passing observer, it is difficult to imagine that this treeless landscape could allow any life to thrive, let alone support increasingly mechanized agriculture. Flat plains with impressive, distant hills are lined with shrubs like t'hola (*Parastrephia quadrangularis*), which, in the drier region of the southern altiplano, form a non-contiguous cover of vegetation. Here, a colorful volcano, the *Volcán Tunupa*, dominates the horizon—resting prominently between two salt flats with quinua at its base. The Andean grain lines the shores of the largest salt flat in the world, the *Salar de Uyuni*, an impressive expanse of glimmering white, which creates a beneficial effect for the quinua that is grown in proximity. There, plants receive ample energy from the reflection of solar radiation

[4] *Trufi*: a bus. In Bolivia, an often brightly colored mode of public transportation.

off the highly reflective, white surface of the salt flat, creating a special ecosystem for a unique variety of quinua (Laguna 2011). But this grain does not just line the shores of the *salar*. It was winter when I was there, and herds of sheep, cows, and llamas were lead across rows after rows of fields that extend across the flat plains of the altiplano; additionally, the occasional pack of vicuña (*Vicugna vicugna*)[5] traveled across the bare quinua fields that have replaced a landscape dominated by t'hola. This scene, cold, dry, dominated by salt flats and an impressive volcano, is the best place on earth to grow quinua. Highly resistant to droughts, sandy soils, and freezes, this ecologically remarkable grain has sustained subsistence livelihoods in the rural areas of the altiplano during drought, freezing temperatures, and times of poor soils. Today, this Andean crop can also be found on the shelves of vogue grocery stores (although increasingly the WalMarts of the world as well) in North America, Europe, and beyond.

In the US, high-end supermarkets sport quinua—in a range of products from granola to tortillas—as one of many "new"[6] products that are part of an emerging trend in the international trade of agricultural goods. As consumers become more aware of the environmental, social, and health related problems associated with industrial agricultural systems, those who can afford to do so have begun to demand something different. Brand names and artisanal products alike now don the label "organic" on their packaging. Farmer's markets and fair trade goods are also parts of this new market paradigm in which privileged consumers begin to chosoe "more ethically," and avoid the more nefarious inputs of industrial agriculture. In the shiny floors, straight aisles, and colored signage of grocery stores that sell frozen, microwaveable quinua in the US, the packages for these products channel much of this ethos:

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[5] Vicuña are wild South American camelids, native to the high alpine regions of the Andes. They are among the smallest of the camelid family.

[6] I place the word new in quotations here to emphasize that while quinua has only arrived to popular US grocery stores in the last decade, the crop has a long history in the Andes.

Photos 1.1 and 1.2: Pictured above are two packages of quinua that sit on the shelves in a Wegman's supermarket in Syracuse, NY. Photo by author.

These packages communicate a number of things to the consumer: "connected by nature," "*wild,* crunchy," "supergrain of the Andes," USDA, non-GMO, and Fair Trade. The patchwork of labels emblazoned on the packaging are designed to make visible the circumstances under which the commodity was produced—and importantly, distinguish it from other products that, it is assumed, were not produced in such a way. The increased presence of these labels, understood more broadly to represent a qualitative shift in the demand of privileged consumers, affects the lives of the producers whose laboring process are governed by the standards laid out by these various certification schemes. The institutions that enforce these standards are mainly private firms known as third party certifiers (TPCs), and their presence in the international market for organic quinua is unavoidable. In other words, if producers hope to export quinua, it is necessary that they do so via the commodity chain for *organic* quinua, and become certified organic.

Yet despite the fact that quinua's popularity in the US has mainly been located in luxury and health circles of consumption, in Bolivia, quinua has a much different history. In the pre-colonial period, quinua held an important place in the Inca empire. Known as "the mother grain," it was one of many crops within Incan systems of tribute that sustained empire building (Kolata 2013). However, when the Spanish arrived, wheat was positioned as the dominant food source, and quinua was actively removed from the landscape (Aroni et al 2009). Marygold Walsh-Dilley, a prominent scholar writing about quinua on the southern altiplano, describes the fate of quinua production shortly after Spanish conquest:

> Whether from direct suppression of quinua due to its symbolic importance to the Inca Empire, the disruption of the complex system of production used to produce quinua and other indigenous varieties, or because of a 'culinary colonialism' that eschewed native crops in favor of European foods, quinoa was marginalized as a potential food source by urban European and mestizo populations (Walsh-Dilley 2013: 665)

The effects of colonial relations to create a stigma around quinua consumption described here have been persistent throughout the 20th century. Throughout this time, quinua was considered only "*la comida de los indios*" (the food of the Indians)—a heavily derisive phrase laden with racial, socio-economic, and regional connotations. As such, quinua had been almost exclusively grown in rural indigenous campesino communities as a subsistence crop for *autoconsumo,*[7] a word that was frequently utilized during my time in Bolivia, and one that describes the production of quinua primarily for the home, and not to be sold on the market. Indeed, the racialized stigma around quinua consumption was such that prior to the boom, urban markets for quinua in Bolivia were almost non-existent (Hellin & Higman 2001). A quote from an interviewee during my time in Bolivia makes the racialized component of these views vivid: "Quinua was considered a food of *el indio,* of the campesino. In the cities, they did not consume

[7] *Autoconsumo* translated literally to English means self-supply. I use this term in Spanish hereafter.

quinua. Everything was discriminated against. It was seen as…," he paused briefly, "As a food for animals, for livestock, *no vé*?"[8] Its close association with indigenous identities means that following colonial times until present, quinua in Bolivia had been disparaged as food only eaten by poor, indigenous, rural peasants.

Due lack of markets for their crops, steady rural out-migration and crippling poverty characterized life for many campesinos on the altiplano. As such, quinua production declined throughout the mid-20th century. After the 1953 Land Reform, many campesinos left the land to work in mines or find jobs in urban areas like Oruro (Perez-Crespo 1991). By the 1970s, quinua farmers in Bolivia were desperate to find markets (Ormachea & Ramirez 2013). In the ethnographic book *El Grano de Oro,* a quinua farmer describes his first journey to Peru to attempt to find a buyer for his crop. Subsequently cooperatives formed, and NGOs intent on supporting quinua farmers on the altiplano began cultivating markets in neighboring countries in South America (Ormachea & Ramirez 2013). Yet it was not until quinua breached North American and European markets in the 1990's that the Andean grain truly began enjoying significant popularity. Burgeoning global demand known as the quinua boom engendered incredible changes on the altiplano. Rows and rows of quinua can now be seen as more and more Bolivians hope to profit from the unprecedented rise in prices on the international market. More recently, the United Nations declared 2013 the International Year of Quinua, in which the grain was lauded in the international community as having the potential to help eliminate world hunger. With this, the prices skyrocketed as global demand buzzed. Popular American personalities such as Oprah Winfrey sported quinua on her website, and healthy eaters became entranced with its unusually protein-rich attributes. In this way, the popularity of quinua

[8] *No vé* is a colloquial phrase in Bolivia with no literal English translation, but can be informally translated as, "You see what I mean?"

coincides with the boom in international trade of non-traditional agricultural goods (Cook & Crang 1996) and the rise of alternative agri-food networks (AAFNs)—networks such as organic, fair trade and non-GMO, among others.

In Bolivia, the boom has created at least three distinct commodity chains through which the grain can be bought and sold: 1) conventional commodity chains for quinua grown using pesticides, destined for either local or Peruvian markets; 2) quinua that is certified organic by third party certifiers and is subsequently exported to the EU, US, or Japan; and 3) quinua that flows through still developing commodity chains such as those under the Denomination of Origin (DO) for Quinua Real, the variety of quinua with the highest market value, said to hold higher nutritional, culinary, and cultural value due to the specific circumstances under which it has been produced.[9]

Given the skyrocketing prices, and the promise of even higher returns once their production was certified organic, new quinua producers began to take interest in producing for these commodity chains, such as those with whom this thesis began. Droves of urban residents eager to partake in the boom climbed into their cars and traveled to their family plots. These spaces had been abandoned since the generation before them migrated from these areas to live and work in cities like Oruro. The new quinua growers do not plan to live on this land, however; they only plant and return to the city where they commute daily, weekly, or seasonally to this plot, most likely selling their quinua to private exporting factories (Interviews by author). Concurrently, producers who live in indigenous campesino communities such as those in San Juan or Nor Lipez (the provinces where geographer Walsh-Dilley and anthropologist Andrew

[9] Fair trade networks for quinua have also developed, though they were left out of this list due to their marginal role in quinua production compared to the three mentioned above (Ofstehage 2012). In addition, it should also be noted that some quinua does not circulate in the commodity form, such as that which continues to be grown for autoconsumo.

Ofstehage have done their research, respectively) live and work under different socio-economic conditions. They use reciprocal family labor, live in isolated rural areas, and in the case of Ofstehage's work, some of these producers work to establish a DO for their quinua, which distinguishes it by the specific traditional labor processes, indigenous knowledge, and special ecological conditions of the region.

Overall, this incredible change in consumption patterns means that in Bolivia, quinua is seen in new ways. This occurs at both the formal state level and in popular culture. There are government offices especially designated to studying and improving quinua cultivation in addition to litigation designed to facilitate quinua export. These actions by the state to newly see quinua as a strategic export (rather than as simply *la comida de los indios*) comes as a small part of broader, revolutionary changes within the state. Pushed by popular protest, and shaped by centuries of struggle for citizenship by indigenous people, both campesino urban, the Bolivian state has entered a new period under the MAS (*Movimiento al Socialismo,* Movement For Socialism) government. The MAS has risen to power on the platform of creating a new Bolivia that privileges indigenous identities and respects the natural environment. Similar changes can be seen in popular culture throughout the Andes as well, as indigenous foodways are also revalorized. This is a culinary movement includes quinua, along with other traditional Andean dishes such as alpaca, which can now be found on the menu in fine-dining restaurants in Bolivia. Once disparaged as food for the poor, a meal of quinua can now be served on elegant plates and white tablecloths. These profound changes in the meaning of indigenous identities has lead to drastic changes in the material production of quinua: from a colloquial meal, whose eaters are stigmatized on the basis of race and class, to an international answer for global hunger and a symbol of national identity, the altiplano's grain has undergone a massive transformation.

This thesis relies on interviews with urban producers such as those in the story that began this thesis, technicians, certifiers, and government officials in order to show that the transition from local subsistence crop to international luxury commodity under 21st century capitalist relations entails changes beyond the adoption of new agricultural inputs. This transition is also wrapped up in questions about identity and authenticity: as urban producers seek to enter the profitable commodity chain for organic quinua, this chain is also contested by others who see quinua as rooted in specifically local agricultural practices and knowledges, and they dismiss the quinua grown by urban residents as inauthentic. The changes brought on by the quinua boom, therefore, cannot be fully described by the adoption of new agricultural technology that producers use to meet booming demand. Instead, these changes involve the unevenness of this adoption, the hoops that producers need to jump through to be part of quinua markets, and who has the power to determine what those hoops look like. Therefore, the quinua boom has not only changed the scale at which it is grown and the tools that producers use to grow it, but also who is producing quinua, for whom, and under what circumstances.

In this thesis, I show that the transition from subsistence crop to the production of organic quinua for an international market has not lead to the "ecological harmony" that the commodity chain for organic quinua has promised. Despite the long list of standards designed to ensure that quinua is grown organically, the quinua boom has changed the metabolism of production, and produced new socio-natures. In this context, certification also creates differentiation among producers as some are able to meet these standards and enter the profitable international market; meanwhile, for others, standards act as financial, logistical, and ecological barriers to economic security. The terms under which quinua circulates through the economy, however, are also contested by actors in Bolivia, who imagine the crop and particular production methods as part

of a uniquely Bolivian identity. These attitudes about quinua, when place in a longer historical context, shows profound changes in the relationships between indigenous campesinos, the state, and capital. Together this thesis shows that commodity chains are contested, negotiated, and power-laden: they produce nature vis-à-vis the quinua producer's labor, whose laboring processes are points of contention, as in some cases they are heavily influenced by distant, private actors in the Global North, and are increasingly tied to questions of authenticity and ethnicity. Placing this commodity chain next to one that is burgeoning alongside it shows the specific ways in which ideology about nature and the value of small-scale agricultural production in the global economy are changing. These points politicize the transformative power of the market (even an amended one) to create situations of social equality and ecological harmony.

Theoretical framework

Below I review the theoretical framework that helps contextualize my empirical case study. To do so, I first define my theoretical underpinnings when I use the words metabolism and socio-nature by reviewing the production of nature thesis, rooted in the ideas of Marx but formalized by Smith (1984). I then move on to review food regime theory, a useful framework for contextualizing the popularity of organic quinua within a broader historical political economy. I plan to analyze my empirics at the nexus of these theories, considering an approach to food regimes theory that eschews a society-nature dualism. This formulation of food regime theory takes at its center the metabolic relationship between society and nature that is mediated by human labor. Lastly, I briefly describe the way I use this framework to undergird a political ecology approach.

Production of Nature

Marx and Engels were among the first to theorize the word metabolism as the relationship between humans and nature, primarily summed up in the activity of human labor:

> Labour is, first of all, a process between man and nature, a process by which man, through his own actions, mediates, regulates, and controls the metabolism between himself and nature (Marx, 1970, pp. 283, quoted in Swyngedouw 2006).

Here, Marx states that labor is the primary way in which humans interact with nature, though as Marx makes clear, the qualities of human labor are historically specific and change over time. Marx was interested in labor under capitalism. Under this mode of produciton, laborers transform nature's myriad use values into a commodity--which is made commensurable to all other commoditeis in the form of exchange value. Thus it is able to circulate through the economy, and capitalists, the owners of the means of production, are able to extract surplus value from the laborer as the commodity's exchange value exceeds the cost of producing it. Essential to this process, however, is that labor is stripped of the means of production, and the metabolism that mediates relations is propelled by the creation of exchange values (Marx 1967).

Taking up the idea that labor is the fundamental point at which humans interact with nature, Smith's (1984) *Uneven Development* proved an influential tome for theorizing socio-nature: the concept that capitalism is inherently an ecological project. Smith's work is distinct not only from bourgeois notions of the separation of society and nature, but also other iterations of ecoMarxism, such as the work of O'Connor (1989) and Benton (1989). These well-cited works serve as influential theoretical frameworks for understanding capital's tendency to undermine the ecological circumstances upon which it most direly depends; however, theorizing capital's relationship to nature in this way hinges upon an underlying assumption that the economy (the realm of the social) acts upon nature. Maintaining this ontological separation,

therefore, does little to dismantle bourgeois categories of society and nature (Castree 2000). Instead, Smith's taking up of Marx's concept of metabolism establishes a theoretical assumption that from the start understands nature to be internal to capitalist production (and not only the unfortunate recipient of its consequent).

Like Marx, Smith understood human labor to be the primary mediation of relations between people and nature. In Smith's articulation, human society has always depended on a metabolic relationship with nature—what the transformation of nature by society (vis-à-vis the labor process) looks like, however, *is* historically specific. For instance, under a capitalist mode of production, labor will establish a peculiar type of metabolism between society and nature (the extraction of exchange-values). Given these underlying assumptions, Smith is able to formulate an argument that society and nature co-constitute one another through the labor process. Under historically and geographically specific labor relations, landscapes are actually materially transformed to reflect these circumstances (Mitchell 2003). In other words, particular arrangements of labor relations *produce* nature as nature materially constitutes the economic system into which it has been internalized (Huber 2013).

Along these lines, a similar critique was articulated by Harvey in *Justice, Nature and the Geography of Difference* (1996) when he theorized "created ecosystems." Here, similar to Smith's understanding of the ways in which capitalist labor relations produce certain kinds of natures, Harvey argues that ecosystems may be intentionally or unintentionally produced by capitalism, highlighting Marx's observation of the creative destruction of capitalism. An important point that Castree (2000) teases from Harvey's argument is that produced nature cannot be exploited indefinitely: nature itself has materiality. Therefore, as society produces particular kinds of nature, nature in turn has a role in determining the circumstances under which

society internalizes it—an important point to consider in the extreme highland environment of the altiplano.

Significant for this thesis is also Eric Swyngedouw's employment of Smith's concept of socio-nature. Swyngedouw (2006: 106) defines socio-nature as: "a series of interconnected heterogeneous (human and non-human) and dynamic, but contested and contestable, processes of continuous quantitative and qualitative transformations that re-arranges humans and non-humans in new, and often unexpected, ways." Here, Swyngedouw focuses his analysis on the metabolic rate at which society internalizes nature, defining this as a series of power-laden transformations, a transmutable process in which new socio-natures are continuously formed and negotiated. This understanding fundamentally rests on Marx's notion of capitalism as, "a metabolic system of circulating money and commodities, carried by and structured through social interactions and relations" (Swyngedouw 2006: 111). This perspective highlights that the socio-nature metabolism is a series of power-laden relationships through which environments are produced as the myriad use-values of nature are abstracted and made commensurable to all other commodities in the form of their exchange-value.

Swyngedouw & Heynen (2003) use this concept to formulate a critical framework for urban political ecology, though their theorization of the power-laden process of ecological transformation applies here as well when they define socio-environmental change as a "…continuous production of new 'natures,'…All of these processes occur in the realms of power in which social actors strive to defend and create their own environments in a context of class, ethnic, racialized and/or gender conflicts and power struggles" (2003: 900). Though they theorize here about the construction of urban natures, this articulation of the production of nature thesis is useful for understanding the ways that human labor under specific social relations

produces new natures—each of these natures being distinct depending on the socio-economic context. Yet the production of nature is also a classed, racialized, and/or gendered process, where at the same time, actors seek to defend or create their own socio-natures. At the same time, nature also constitutes the economic system into which it circulates—a dialectic that is plainly evident in the extreme environment of the high altiplano, where at all points the climate poses risks to production *and*, as we will see, adds value to the unique commodity produced there. But what are the specific terms on which these commodities circulate, and who decides this? How are the terms under which these commodities circulate contested, negotiated or accepted by those whose labor produces them? These questions, as they relate to the transnational commodity chain for organic quinua from Bolivia, fuel the empirical chapters of this thesis.

Food Regime Theory

The terms under which commodities circulate are historically specific, and a factor of a myriad of political, economic, and cultural relationships, a complicated web of social relations called a regime. The regulation approach has been influential in theorizing the transformation of the organizational structure of capitalist relations over time and space, and is primarily interested in understanding the ways in which established patterns of capital accumulation continue, even while they are founded on contradictions (Campbell and Dixon 2009).

It was not until Friedmann & McMichael's (1989) influential extension of this theory that the regulation approach was brought to issues of food, which placed the international trade of food at its center for theorizing capitalist relations. Though their theory has been critiqued (Goodman & Watts 1994), it also helps make sense of organic quinua's presence in the supermarkets of the Global North in a larger historical and political economic context; provides a

useful lens for understanding the terms under which organic quinua circulates through the economy are power-laden; and politicizes the governance structures that affect the labor of Bolivian quiñeros.

Friedmann & McMichael's (1989) theory is underwritten by the understanding that stable relationships, or regimes, between the state, civil society, and corporate actors fall into clear periods, and are historically *specific*. These moments of stability are defined by class compromises, and simultaneously are predicated on the ability to accumulate capital. Therefore the regime possesses inherent tensions that eventually surface as crisis. One of the first signs of this crisis is the naming of the inherent contradictions of the regime by various social actors. Over the course of this naming, the inherent contradictions of the regime become more evident and eventually result in crisis: "that is, the inability of key relationships and practices to continue to function as before" (Friedmann, 2005: 229). These periods of instability are, "shaped by political contests on a new way to move forward" (ibid. 2005: 228). A new regime (but the same powerful actors) then emerges based on the dominant class's observance of the "selective demands" from the various social movements/actors involved in this contestation.

Currently, food regime theorists identify a possible emerging food regime in the 21st century. After the establishment of the WTO in 1995, an entirely new global system of governance was created for the international circulation of agricultural commodities, which created new international markets for fresh fruits, vegetables, and other non-traditional food commodities (in the sense that these commodities are not wheat, sugar, coffee, or tobacco) (Friedmann and McNair 2008); increased the financialization of food (Burch and Lawrence 2009); and lead to greater roles of private retailers in enforcing the food safety and health standards in lieu of the governments of nation-states (Campbell 2009). The effects of

neoliberalism in the 1990s, and the mass explosion of international trading in agricultural goods, helped to initially create what McMichael (2000) called the 'Food From Nowhere' Regime. In what Campbell (2009) identifies as a breach in the "cultural legitimacy" of mass produced food under neoliberalism, the ecological disaster of this regime began to be made known. Push back against the corporate food regime became prevalent not only in the sites of production, but also at the sites of consumption, where outbreaks such as *E. coli*, salmonella, and Mad Cow disease prompted a "flight to quality" of wealthy consumers towards organic, local, or artisanal foods.[10] Friedmann (2005) identifies these moments, together with the power of agrarian social movements such as *La Via Campesina* that contest the industrial agri-food complex (see also McMichael 2009), as a gradual destabilization of the previous food regime as its contradictions began to be made more known.

A critical aspect of this theoretical approach is that despite the power of social movements to contest the dominant regime and make its contradictions known, these perspectives are actively appropriated by dominant actors in order to reach a class compromise. This means that powerful actors stabilize a new regime by rearranging the relations between social actors and transforming popular narratives, but only in order to maintain established patterns of capital accumulation. This is evident in the way that the emerging corporate-environmental regime, as Freidmann (2005) calls it, has managed to achieve stability, even while the contradictions of industrial agriculture are made known. The health concerns of wealthy consumers in the Global North about industrial agriculture were translated by entrepreneurs, who capitalized on opportunities in the private sector to create a series of certification schemes that would ensure wealthy consumers of the ecological and/or social circumstances under which their

[10] Scholars often cite the influence of popular texts such as Eric Schlosser's *Fast Food Nation* and Raj Patel's *Stuffed and Starved* to bring public awareness of these issues as well.

relatively more expensive products have been produced (Friedmann 2005; Friedmann and McNair 2008). Campbell (2009) expresses with acuity the dual-nature of the corporate environmental regime, which has taken up the spirit of food movements, and translated it into opportunities to extract surplus value:

> The cultural legitimacy that drives elite purchasing decisions supporting the 'Food from Somewhere' Regime are arguably linked in a binary with the mainstream structures of cheap industrial food production. The flight to the quality end of the world food market is partly premised on the ability of wealthy consumers to purchase foods that are demonstrably different from mainstream industrial foods….Put simply, foods must not only be demonstrably from somewhere, they must also provide legitimate assurance that they are not food from nowhere" (2009: 317).

Here Campbell describes the relationship between conventional and "alternative" food, such as organics, as a functional relationship: through practices of certification and labeling, organic products gain added value as they stand *in relation to* conventional agricultural products. This relationship gives insight into the ways in which the emerging corporate-environmental regime has acquired cultural legitimacy without fundamentally disrupting established patterns of capitalist accumulation. The increasing popularity of organic products are "signs of the collapsing legitimacy of earlier food regimes," (Campbell 2009: 312), yet even still, capital has apprehended these shifting ideas about food, agriculture, and the environment, to transform the concerns of social movements into an opportunity to extract surplus value (Guthman 2004). Facilitated by the concurrent shift towards neoliberal forms of governance, the proliferation of third party certification (TPC) for everything from shade grown coffee to organic quinua has helped maintain capital accumulation by corporate interests, the details of which will be further explored in Chapter Three.

When Friedmann & McMichael (1989) extended the regulationist approach to food, they instigated an influential conversation that helped theorize agriculture beyond a Kautskian

perspective (which looks closely at the point of production) to analyze broader patterns of supply chains and production-consumption linkages. The subsumption/survival debate, which centers the conversation about agrarian livelihoods on whether or not smallholders are disappearing (Hobsbawm 1994) or persisting (Brookfield 2008) is avoided in this re-framing of the theoretical question (Campbell & Dixon 2009). Thinking in terms of food regimes can help theorize capitalism*s*. A diverse set of social relations, which inform the terms under which commodities circulate through the economy, are transmutable, historically contingent, at times contradictory, contested by a number of actors who accept/resist these terms, and appropriated by capitalists in the form of a class-compromise. In this way, this theoretical approach avoids the subsumption/survival debate by theorizing the possibility for *both*: the transmutable nature of capitalism means that peasants may be dispossessed from the land through enclosures by industrial agriculture, but might also be fetishized as smallholder agrarian artisans in niche supply chains, such as those for Fair Trade goods (see Goodman 2004).

In some places, work in the regulation approach broadly (and food regime theory more specifically) has considered the way nature is metabolized differently during different regimes, acting as a fundamental *internal* component of capitalist relations (Huber 2013 and Campbell 2009, respectively). In this way, the production of nature thesis, discussed in the previous section, is an important point for understanding regulation theory as it relates to socio-nature. As Huber (2013) points out, this school of thought has traditionally seen the environment as outside the economy (e.g. the work of O'Connor & Benton). Incorporating production of nature into a regulationist approach, however, allows us to understand nature not as a victim of capitalism, but as a material, discursive, and ever-changing part of maintaining patterns of capitalist accumulation. Connecting the production of nature thesis to regulation theory allows us to

consider the role of the environment in the economy and the role of the economy in the production of nature, a dialectic that becomes especially pertinent when talking about the international trade of organic products, and in this case, organic quinua. Applying the call to place the relationship between society and nature at the heart of food regime theory, Campbell (2009) gives a specific example of the way in which the ideology about the environment changed from one regime to the next as the "technical optimism" about pesticides unraveled as a result of the activism of social movements, in addition to intellectual contributions such as *Silent Spring*, as well as the prevalence of food scares. The outcome of naming these contradictions now begins to take shape as an emerging environmental-corporate regime.

Using a Political Ecology Approach

I review these theoretical frameworks in particular because I understand the recent popularity of organic quinua to sit squarely within this emerging regime. The circumstances under which quinua is produced, and subsequently flows through the economy, are largely determined by third party certifiers (TPCs)—which not only comes as a part of neoliberal shift in food governance from the public to the private sphere, but also as part of more ideological shifts about high value food and consumer distrust of industrial agriculture. These political and ideological re-arrangements have serious affects on Bolivian producers whose ability to enter the international market for organic quinua depends on their ability to comply with these norms. Importantly, however, this project has a wider scope that hopes to contest the market's ability to bring about social equality and ecological harmony as promised (even an amended market), and so this thesis also considers the historically and geographically specific way in which capitalist

relations produce nature. The commodity chain for organic quinua has changed the ecology of the Bolivian altiplano, making it difficult for some producers to comply with organic standards, even while retailers and certifying bodies reap added value from the certification which states that organic products maintain ecological harmony. In order to show this, I take a place-based approach that analyzes changes in the laboring process of quinua production over time, taking this labor to be the primary point at which humans interact with nature. Insofar as this thesis is interested in the "transformation of nature and allied processes of producing new socio-environmental conditions," (Swyngedouw & Heynen 2003: 903), I take a Marxist political ecology approach in order to contextualize local transformations in the labor process in a "broader political economy" (Blaike & Brookfield 1987). Exposing the production of new natures, even in the commodity chain for organic quinua, unsettles the *a*political ecological narratives of the organic industry. In contextualizing ecological change on the Boivian altiplano within food regime theory, I am able to place the quinua boom within a corporate-environmental regime and politicize the terms on which quinua circulates through the economy.

Importantly, however, this thesis is not just about the way that distant actors exert influence over quinua's circulation through the economy—but also the way actors in Bolivia contest the terms of this circulation (albeit in different ways). Bringing this contestation to the fore does three main things for my theoretical approach: 1) It shows the ways in which ideas about identity, value, place, and agricultural production are changing, not only in global markets but also in Bolivia, the site of production; 2) It shows that a politics of identity is important in the transnational trade of quinua, bringing new but important questions to a food regime theory approach; and 3) It further politicizes earlier arguments that are concerned with the tensions

within new forms of environmental governance of commodity chains and the production of nature.

I consider this a political ecology approach not only by putting local agricultural production into larger trends in agri-food capital, but also because it is a critical analysis of the contested process of the production of new natures—where questions of identity, livelihoods, and labor are foregrounded in politicizing the way that nature circulates through the economy. This metabolism—the power-laden activity of transforming nature and nature's materiality in the economy—is a political ecological process. Yet this case is particularly interesting because while these new natures are produced, the rhetoric of the commodity chain for organic goods constitutes itself as 'ecologically harmonious.' This thesis puts the production of these new natures (reviewed in Chapter Two) into the context of a new food regime, which signifies a class compromise that perpetuates the established patterns of the accumulation of capital (the way this translates across space, and affects Bolivian quineros is reviewed in Chapter Three). And lastly, this is also not just a story of undifferentiated labor,[11] it is also a story of identity, which should serve as an important object of inquiry for the regulation approach as it is part of this new food regime (themes taken up in Chapter 4).

Outline

[11] See Ekers & Loftus (2013) for a critique of the production of nature thesis, which they argue should also include a Gramscian analysis in order to consider questions of difference (such as race, ethnicity, and gender).

As stated above, this thesis takes a political ecology approach in that it looks closely at how labor processes have changed over and produce new socio-natures. The details of this transformation are outlined in Chapter Two.

These insights politicize the environment and the claims of TPCs, retailers, and labels that organic agriculture is ecologically harmonious. Importantly, quinua's story also raises a critique of some sections of the agri-food literature, which laud alternative agri-food networks (AAFNs) as markets that re-embed agriculture back into ecological and social contexts. As such, Chapter Three begins with a review of alternative agri-food networks, in order to insert the case of quinua in Bolivia into the literature. This review also includes case studies that support my empirical findings and historicize TPCs. This literature review contextualizes the empirical case study that follows, which shows how producers are unevenly able to comply with norms based on the limited availability/affordability of certified pest control, the logistical barriers of getting certified, and the increasing pressures from pests for crop failures. Altogether this chapter politicizes the rhetoric of organic commodity chains as the quinua boom has created new natures, new opportunities, but also new exclusions.

Despite these massive changes that have accompanied the boom, a bust has shortly followed, as often happens with booms for alternative food crops. Since 2014, the prices for *el grano de oro* have fallen steadily. Throughout my time in Bolivia, the blame for this crash was placed on a saturated market: specifically, the proliferation of quinua production in countries across the globe. This became a persistent theme in my conversations with producers, technicians, agronomists, government officials, consumers, and factory owners. Almost everyone reported with dismay that quinua—once a marginalized food now refashioned into a national

symbol of pride and identity—was now grown in places like China, India, Italy, Spain, US, Chile, Brazil, and Bolivia's Andean competitor, Peru. Repeatedly, Bolivians imagined disparate locations beyond their borders and voiced their concern over their nation's competitiveness in the race to produce the most quinua at the lowest cost in a quickly shrinking market. Unlike wheat to the Fertile Crescent, quinua production continues to be emotionally, geographically, and culturally tied to the Andes in the minds of Bolivians. While wheat is now produced in disparate parts of the globe—virtually untied to any one place, people, origin, or culture—quinua, at least to Bolivians, is profoundly Andean, and more specifically, indigenous. Its production elsewhere kindles both economic and cultural concerns in the minds of its producers. Yet often, these concerns are made strictly on a regional basis, where claims that tie quinua to a particular ecology, people, and practice are made by appealing to the exceptionalism of the southern altiplano, the home of Quinua Real.

In this context, producers, technicians, factory owners, government workers, and agronomists alike make Bolivian quinua uniquely competitive through appeals to authenticity: the subject of Chapter Four. This authenticity is often expressed in three ways: 1) the particularities about the climate in the southern altiplano, where a majority of quinua for export is grown; 2) the methods of production that are closely tied to indigenous agricultural systems; and 3) how these two variables jointly make Bolivian quinua different than quinua grown anywhere else. This last point is of particular interest in the wider scope of this thesis, where traditional production methods said to be practices in the southern altiplano are contrasted both abroad in places like Peru and the US, but also in other parts of the altiplano, where producers engage in other commodity chains such as the organic commodity chain. These chains, according to actors who lobby for a DO, do not reflect the particular ecology, labor, or

knowledge used to grow *authentic* quinua. These claims, made by various actors from producers to government technicians about the ecological, cultural, and historical exceptionalism of Quinua Real, are translated into efforts to form an *alternative* alternative (Ofstehage 2011) commodity chain based on the peculiarities of the southern altiplano—claims that in themselves hold tensions, as I will explore in Chapter Four.

Therefore, I argue that the commodity chain is contested and contestable (Swyngedouw 2011). Especially in a competitive, expanding, and crashing market, it becomes imperative to differentiate Bolivian quinua as uniquely authentic, healthful, and traditional. This utilization of identity attempts to contest other commodity chains, where laboring practices are mechanized and strategies used to grow are not rooted in local knowledge. While a changing metabolism produces new natures, prompting many to search for new, certified, effective pest technology, other producers work to create commodity chains that represent the reproduction of their own environments. By focusing on this complicated landscape of contested labor and knowledge involved in quinua production, I politicize ecological narratives promoted by the organic industry, and present evidence of burgeoning alternative commodity chains. By holding up these two commodity chains, I show the paradox of the international organic market in that it produces new natures and presents barriers to smallholder producers (like those I interviewed). As quinua increasingly is brought under the purview of international certification regimes, the rules, regulations, and sanctioned techniques, others push back against these forces that work to change what kinds of knowledge are used to grow quinua and who is involved in doing so—yet even this act is full of tensions.

Methodology

My primary research interest before beginning this project was occupied by questions about the landscapes where capitalism and agriculture meet. Put simply, I was and am interested in what happens when a subsistence crop is transformed into a cash crop. The simplicity of this question is completely lost on quinua. It proved to be a complicated, confusing case study in such a phenomenon due to the unique and deep history of indigenous struggle, colonialism, state neglect, US imperialism, the effects of the late stages of capitalism, and the rise of ethical consumption. These are braided through the cultivation of quinua as they are both a part of the collective memory of those who grow it, as well as present real challenges in their contemporary everyday experiences.

However, my understanding of this complicated history when I arrived in Bolivia in late May was slim. As I would imagine how fieldwork often seems, I felt as if I were walking into a conversation that had been going on for hundreds of years, and no one let me in on the inside jokes. As such, many of my research questions evolved rapidly from interview to interview, as they continued to do even after I returned to Syracuse and transcribed the interviews.

I performed a total of 17 structured and semi-structured interviews, though some were much more in-depth and formal than others. Over my 2.5 months spent on Bolivia's altiplano, I interviewed 6 quinua producers; 3 NGO representatives; 4 government workers of the MDRyT (*Ministerio de Desorollo Rural y Tierra,* Ministry of Rural Development and Land); a representative of the campesino organization CSUTCB (*Confederación Sindical Única de Trabajadores Campesinos de Bolivia,* Unified Confederation of Peasant Workers Unions of Bolivia); an organic certifier of producers and factory employee; an organic certifier of private firms; and the president of the quinua cooperative APQUISA (*Asociación de Productores de*

Quinua Salinas, Association of Producers of Salinas Quinua), which represents quiñeros in the largest quinua producing municipality in Bolivia.

The three interviews I had with NGOs were with PROINPA (*Promoción e Investigación de Productos Andinos,* Promotion and Investigation of Andean Products), FAUTAPO (*Fundación Autapo,* Foundation Autapo), and CEDLA (*Centro de Estudios para el Desarrollo Laboral y Agrario,* Center of Studies for Labor and Agrarian Development). I chose to contact PROINPA because the organization is well connected to campesinos, and supports the production of Andean cultivars. I interviewed a technician at this NGO, Raul Saravia, who publishes prolifically on pest control for organic quinua. Saravia was the ideal person to speak with about the current struggles with organic quinua production, as well as the latest technology being utilized by campesinos. After my interview with Saravia, he directed me to the MDRyT down the street from PROINPA's Oruro office, which led to subsequent interviews with a group of government employees who work in the Ministry of Rural Development there. Since I interviewed the MDRyT in the Oruro office, these workers were well versed in the struggles of quinua producers in the region. I chose to contact FAUTAPO due to their useful publications on quinua, and especially that on Quinua Real. I visited the FAUTAPO office in La Paz, where I was connected with Pedro, who agreed for me to use his first name in my thesis, once I informed the organization that my project was about quinua. Pedro's research specialized on quinua, and he was well connected to other actors in the organic quinua sector. The meeting I had with him lead to other interviews I had with an ingeniero, organic certifier, and the president of APQUISA. I contacted CEDLA after reading a monograph about changing labor relations during the quinua boom co-authored by Enrique Ormachea, whom I interviewed in CEDLA's office in La Paz. On this same trip to La Paz, I reached out to the CSUTCB, the most important peasant

organization in Bolivia, and I was fortunate to interview Abdon Félix there. Félix, a quinua producer from a municipality in the southern altiplano, agreed that I could use his real name in my thesis.

Interviews with producers were mostly acquired through the network of my host family, and most importantly, a generous and kindhearted woman named Paty, who introduced me to everyone she knew in the neighborhood who produced quinua. It was through Paty's generous use of her time and well-established connections in the neighborhood that she was able to introduce me to cousins, neighbors, and associations of quinua producers who were commuting everyday from their urban lives to the countryside. These formerly forgotten small plots had been in their family for generations, abandoned for years, but rediscovered in the height of the quinua boom. In fact, it was through Paty that I heard of the taller that began this chapter, which became a pivotal moment in my research. Paty and her husband Oscar make a living selling motor oil to everyone in the neighborhood who owns a car. Consequently, these were the very same people who were able to commute from Oruro to family plots in the campo, a fortuitous connection that provided access to an otherwise heterogeneous group. The fact that these empirics focus on urban producers to who commute to their campo and face the challenges of the organic market is important because most literature on quinua production focuses on production in rural communities that until only recently have been quite isolated from significant flows of capital (Ofstehage 2010, 2011, 2012; Kerssen 2015; Walsh-Dilley 2013). The stories of urban producers and their struggle to enter the international market for organic quinua, therefore, represent a relatively under-researched demographic of quinua producers, whose stories, positionalities, and agricultural practices differ quite significantly than those of the communities at the center of current work.

Interviews with NGOs, government offices, certifiers, the CSUTCB, and cooperative were solicited by myself via email, and a meeting time was agreed upon. I primarily contacted these actors based on a snowball tactic, where one interviewee would suggest the next, and based on my rapport with the former, the following would agree to meet. All participants were extremely generous with their time, open to allowing me to record our conversations, willing to refer me to other people they knew, and most importantly, patient with my language skills.

Before arriving in Bolivia, I had an intermediate level of Spanish speaking skills (four years of high school and three years of undergraduate classes), yet was not fluent. As such, I spent three weeks at a language school in the Bolivian city of Cochabamba doing rigorous language training and staying with a host family (with no internet, I might add—a testament to the lack of English in my world at the time). Since the first month of my fieldwork was spent in language training, the majority of my interviews came from the second half of my time in Bolivia. Though this meant that the majority of my interviews were densely packed in a relatively short period of time, the level of fluency that I attained during language training was sufficient not to necessitate a translator. I was able to record most of my interviews, and therefore was able to review the subtleties of conversations that I did not catch the first time around. This gap, however, often proved a setback as I did not achieve full fluency, and undoubtedly, important information slipped past me.

In truth, even if I were 100% fluent, my positionality as an American woman from New Orleans, a city below sea level, presents insurmountable barriers to what the content of interviews looks like. There are many things that I did not and will not understand about Bolivia, regardless how many books I read, by nature of my not being Bolivian. Cultural cues, cosmologies, collective and historic memory escape my purview as a researcher, and these

shortcomings will be at the forefront of my mind as I discuss the tender subjects of indigenous identity. As a stranger to Bolivia before this project, I cannot and will not understand what it is to embody and experience these axes of difference, and these, in addition to my lack of full fluency, undoubtedly present barriers to what I can and should say about them. In the hopes of recognizing, if not being able to fully avoid the power relations that are entrenched in a colonial institution such as the academy (Sundberg 2015), I hope to heed these pauses. This I relay here, not as a navel-gazing exercise, but rather, to be reflexive about my positionality in the hopes of making the limits to my research known to the reader, and to ground this research in a specific (rather than objective) point of view (Sultana 2007).

Understanding that only 2.5 months in the country and limited language skills would present real boundaries for how much my fieldwork could speak to questions of culture or experiences of meaning, I decided before leaving for Bolivia that my questions would center agricultural inputs, which ostensibly would be easy to identify, quantify, and tabulate. Once I arrived in Bolivia, however, I realized that the situation—as previously stated—is a bit more complex. The emphasis on organic quinua became a central talking point of many of the conversations I was having, both in preliminary interviews and in casual conversation. As such, I began to focus my research questions specifically on methods of pest control: what kinds of products were quiñeros using and why. As I asked producers what kinds of pest control they used, I realized that their answers were highly differential: some used extracts from the native t'hola plant, others used bio-insecticides. These variegated responses transformed my project into questions about who were organic quinua producers and what were the divisions within that group. Through asking these questions, I began to understand that those who grow quinua are a heterogenous group: from indigenous communities in rural areas growing on communal

landholdings to shopkeepers who commute by car to the campo and have begun growing quinua in the last two years. Those who grow quinua—and importantly, *organic* quinua—are highly differentiated in class and ethnicity. By asking questions about methods of pest control, I was able to understand not only what types material inputs people typically use, but also a little about their laboring process and what forms of knowledge they employ, all of which had a lot to do with what kinds of markets were subsequently open to them due to the rigorous standards set by third party certifiers (TPCs). As I stepped back from Bolivia and returned to Syracuse, I transcribed these interviews and coded them, searching for themes of identity, change, and differentiation between material inputs and knowledge systems implemented by organic farmers. More recently, I analyzed government documents to understand the significance of these realities in the face of government rhetoric and (inter)national political economic contexts. And finally, as I think about the experiences of organic quinua growers in the context of ongoing conversations being had in the academy, I wish to place these experiences within a broader context of the neoliberal shift from public to private regulations of food systems, the expansion of ethical consumption in the Global North, and shifting ideas about the value of smallholder agricultural practices and place-based knowledge in the global economy. Careful attention to quinua's story, therefore, both in the present and the past, can say much about the political economy of those products that rest so benignly in neat rows on grocery store shelves in the Global North.

One final note on this subject: the reader may have noticed that my spelling of quinua is different than the way it is spelled on packaging in the United States. This is a purposeful, but also metaphorical decision not to translate quinua (the way it is spelled in Bolivia) to the English spelling, quinoa. To draw from Polanyi (1944), quinua is produced on the altiplano, where it is embedded in a number of social networks, ecologies, laboring practices, knowledges, and

cultural meanings. Yet after it is produced, some of this Andean grain is channeled through various commercial networks, certification schemes, conveyor belts, and loaded onto boats, trucks or planes to arrive on the grocery store shelves in the Global North as *quinoa.* What all is wrapped up in this transformation of quinua into quinoa? Using this linguistic translation as a metaphor for the material, cultural, and ideological metamorphosis of nature into a commodity, I ask what is lost and gained during this transformation? Insofar as this project hopes to reveal the complex circumstances under which Bolivian quinua is produced, I maintain this spelling throughout the remainder of this thesis in order to politicize *quinoa,* and call attention the power-laden process of commodifying quinua.

Chapter Two
Transformation

Introduction

“Y así es la quinua, nacida en los Andes, domesticada por nuestros antepasados, apreciada por las incas, casi eliminada por los conquistadores, y redescubierto en nuestra época, va a acompañar al hombre en sus futuros viajes intersatelitales”

“And so is the quinua, born in the Andes, domesticated by our ancestors, appreciated by the Incas, almost eliminated by the conquistadores and rediscovered in our time, is going to accompany man in his future, interstellar trips” (Aroni et al. 2009: 23)

As the quote above states, the story of quinua is one of transformation, both of the landscape on which it is planted, grown, and harvested, and also the ecological knowledge required to do so. This chapter will place the quinua boom in a larger historical context in order to show that the material realities of a changing socio-nature metabolism are in tension with the promises of the international trade of organic agriculture, which promote a message of agricultural and ecological harmony.

In order to do so, I will briefly discuss the physical geography of the altiplano and point out regional differences that will become important in later arguments. Secondly, I place the quinua boom in a wider historical context regarding the changing relationships between empire/colonial powers/the state and land users. This section will show the unique moment in which the current boom is situated, in addition to providing important context for Chapter Four. Thirdly, I will give attention to the way that the boom in

demand for quinua instigates huge changes in the laboring process for some. These changes—uneven as they may be—produce new socio-natures that actually change the landscape. The production of new material environmental conditions prompts the introduction of new ecological knowledge in order to produce quinua in a commercially successful way. The idea that this new ecological knowledge—rooted in the principles of organic agriculture as formulated by third party certifiers (TPCs)—is "in sync" with Earth's natural processes is an ahistorical and apolitical view, made clear once contextualized in broader historical lens of land use. These contradictions are discussed in some detail in order to postulate a paradox of the international trade of organic quinua, the subject of the fourth and final section of this chapter. Furthermore, there are barriers to accessing this new ecological knowledge, which subsequently determines who can partake in the international market for organic quinua and who cannot, a topic that will be introduced in this chapter but looked into with more depth in the next.

Regional Variation

The altiplano, a high desert plain in the Andes Mountains, sits at 3,600-4,300 meters above sea level. Though it rests at tropical latitudes (between 14 and 20°S), its high elevation means that temperatures are low and the climate is dry. It is also broken into three sub-regions: the northern, central, and southern altiplano. These sub-regions are delineated based on a combination of provincial boundaries and climatic differences.

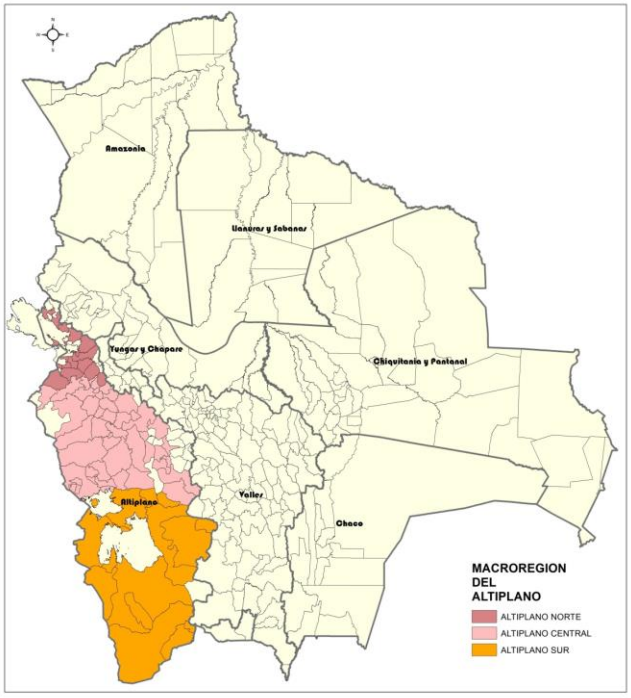

Figure 2.1: Map of Bolivia with provinces outlined in grey. The altiplano is shaded in dark pink, lighter pink, and orange, marking the distinctions between the norther, central, and southern altiplano, respectively. Map created by MDRyT, La Paz, Bolivia.

The altiplano's northern reaches surround Lake Titicaca, and it extends 800km southward. The high plain receives precipitation in a North-South gradient, in which the northern altiplano receives 320-650mm annual precipitation (García et al 2007) and the southern altiplano receives between 150-300mm annually (Aroni et al 2009). The latter region is often referred to as the Intersalar region due to its position between two large salt flats, the Salar de Coipasa and the Salar de Uyuni, the latter of which is the largest salt flat in the world. Both of these are remnants of large ancient seas, testament to the dearth of water flowing through this region.

Alongside the precipitation gradient, the southern altiplano is also highly prone to intense winds, frequent freezes and persistent droughts, experiencing freezes on average

152 nights of the year (Aroni et al 2009). Additionally, this landscape is characterized by increasingly unpredictable rainfall due to climate change (García et al. 2007).

Together these factors contribute to the limited growth of vegetation: the landscape, especially in the southern altiplano, is dominated by non-contiguous, spiny, resinous shrubs called t'hola, which dot the treeless landscape and provide habitats for birds and other organisms that eat insects that prey on crops (Aroni 2008). Soils are very thin due to limited vegetation, and providing very little organic matter to decompose and replace nutrients in the soil. There soils are therefore easily affected by strong winds that sweep over the flat landscape.

This regional variation in climate also contributes to agricultural differences, where the northern altiplano's relatively higher amounts of rainfall allow a larger diversity of agricultural crops, including beans, lettuce, tomatoes, potatoes, wheat and onions; meanwhile the southern altiplano's climate supports mainly potatoes and quinua. Therefore, it is in this harsh environment that quinua has been domesticated: highly resistant to drought, salty soils, freezes, intense solar radiation, it is well suited for an environment prone to unpredictable climatic conditions.

Wider Historical Contexts

The history of domesticated quinua is said to begin some 7000 years ago (Mujica & Jacobsen 2006). According to Aroni et al (2009), the oldest traces of wild quinua were found in what is now Salinas de Garci Mendoza, a province in the southern altiplano. While quinua is grown throughout the Andes, found in Ecuador, Peru, Bolivia, and northern Chile, the quinua that grows in the southern altiplano is said to hold special

qualities associated with the extreme climate to which it is adapted—this theme, regarding the political ecology of Quinua Real, will be taken up in detail in Chapter 4.

This section will briefly touch on a few moments in the history of the Southern Altiplano, including Incan rule, Spanish colonialism, land reform under the new Republic, the 1952 Revolution, and lastly, the most recent period of the presidency of Evo Morales and the rise of the MAS party. These historical moments have been selected because they are particularly important for understanding the context within which the quinua boom is situated. Discussion of these moments will string together various regimes of land use, where the empire/colonial power/state exerts influence (with varying degrees of magnitude) over the way in which the landscape is used. These very material changes to the landscape, however, are informed in part by ideas, conceptual categories, and worldviews. This longer historical view aims to show the ways in which, "the material production of environments is necessarily impregnated by the mobilization of particular discourses and understandings (if not ideologies) of and about nature and the environment" (Swyngedouw & Heynen 2003: 903). With this in mind, the relationship between identity and landscape will be explored at different historical junctures, where at times some landscapes tied to indigenous identities are shown to be understood by the state as backwaters, marginal, and part of the past; and at other times, the very same landscape and its people are held up as part of a national identity, and a path towards the future. As will be shown through the following discussion, ideas about identity are written into the landscape through imperial/colonial/state policy, although these conceptual categories about traditional and modern, indigenous and non-indigenous, past and future, are fluid and always changing.

The Incas and Spanish Colonialism

The story of quinua could begin long before the Inca; however, it was the Inca who, for the purposes of empire building, engineered a system of indirect rule over a diverse territory, and created a complex agricultural society. The agrarian base of their empire is evident in the top-down public works projects made possible by the *mit'a,* the empire's labor tax. The Inca did not have a monetary taxation system, but rather relied on the annual mandate of labor from members of disparate communites under their control in the form of the mit'a in order to create spectacular infrastructure such as roads, sore houses, and terraces (Kolata 2013). The Andean communities over which the Inca ruled, called *ayullus,* are kin-based groups that trace their heritage back to a common ancestor—and who share land, labor, and livestock resources in communal formation—aspects of highland that Andean culture that, at least in Bolivia and parts of Peru, persist today (Healy 2001). Among their agricultural crops, quinua was considered the "Mother Grain," due to its light-weight and nutritional value capable of sustaining the long marches of their imperial army (Aroni et al 2009). To support disparate populations, the Inca profoundly shaped the landscape through large-scale agricultural projects, growing quinua at high altitudes and other crops such as corn along the sides of the Andes.

In 1530, however, the last Incan king was beheaded, and Spanish colonial conquest was solidified. The violence of Spanish colonialism in the Andes transformed social relations and caused drastic declines in population. It also meant that the altiplano itself was seen and used in different ways. These conquerors were much more interested in the rich silver mines poised high in the Andes mountains than the agricultural crops

native to the high, dry altiplano. As such, the secret Incan mine of Potosí was found by the Spanish in 1545, and almost immediately mining began. To the Spanish, aside from the rich silver mine, the altiplano was akin to a wasteland. Illustrating this are words from José Acosta, an early Spanish colonialist:

> In very harsh lands, dry, and infertile, with very high mountains, sharp crevasses, and very inhospitable, gold and mercury mines were established, and there also took place the washing and processing of gold. All this wealth was destined to go to Spain. After the discovery of the West Indies, other similar harsh, laborious, infertile, and barren places were occupied for such purposes. It was the love of money that made such places liveable, rich, and populous." (José Acosta, Historia Natural y moral de las indias. Mexico City, 1589, p. 161 [Cited in Montero 2011, page 300]).

Here it is clear that, to the Spanish, the altiplano represented an area void of agricultural potential but rich in mineral wealth. To harness the prosperity of the *Cerro Rico,* the famous mountain in Potosí that essentially funded the Spanish royal empire (Kohl & Farthing 2006), the Spanish co-opted the practice of the *mit'a* and forced indigenous population across the territory to migrate to the *Cerro Rico* and to labor in the mines as a form of taxation (Montero 2011).

For the next century, disease brought by the Spanish and forced labor in the mines caused catastrophic decline in human life. The imposition of Spanish colonialism transformed the primary land use of the region from the vast Incan terraces on the sides of the Andes to silver mining in dense populations on the altiplano for the Spanish Crown. Throughout this period, the Spanish formed a racialized caste system intent on subjugating all aspects of Andean life: food, language, dress, bodies, religion, systems of land tenure, and agricultural practices were denigrated to subservient positions (Postero 2007). This meant that crops like quinua were almost erased from the landscape, and

substituted for European crops like wheat (Aroni et al 2009). Yet in the southern Andes, where indigenous people remained the majority of the population, domination was not without rebellion—the historic uprising led by Túpaj Katari on La Paz in 1781 remains part of collective memory today, and speaks to the ways in which power is contested, uneven, and frequently challenged.

Republican Era

After the formation of the Bolivian Republic, new ideas about the territory were formed. Creole politicians, intent on propelling the region into a world of modern states, wished to dismantle the remnants of the colonial tribute system as well as indigenous claims to communal land rights. These new liberal elites wished to end indigenous tribute as a way to turn their attention towards a future of liberalism, capitalism, and a modern state (Larson 2004). Therefore, communal systems of land tenure, along with tribute, were seen as signifiers of an unmodern, unproductive colonial past. As part of this effort, in 1866 a land reform known as the *Ley de Comunidades*, was proposed that would release all communal land holdings to the state, which would then auction it off to the highest bidder (ibid.). The failure of this land reform to fully come to fruition is testament to indigenous uproar during 1869-1871, yet despite this push back, individual private property holding was made final law in 1874 (ibid.) This decision, though widely rejected by ayllus, caused a huge decline in communally held lands: as Klein (1992) points out, the amount of communally held land fell by 40% between 1880-1930.

This shift from collective to private held land was motivated by particular views of the Republic's future: visions that did not include unproductive, traditional forms of agriculture. As such, the landscape was forcibly made to reflect this vision. The state, therefore, had a particular idea about its relationship to the indigenous majority, which sought to change how they were in relation to each other and to the land.

1952 Revolution and the decades after

The next land reform in Bolivian history, part of the historic 1952 Revolution, surprisingly draws several parallels to the one in 1866. By the early 1900s, three tin barons owned the entirety of tin production in Bolivia, meeting a spike in global demand and supplying high revenues to the few owners of the profitable and labor-intensive industry (Kohl & Farthing 2006). Additionally, the *hacienda* system had come to occupy large amonts of land in the Cochabamba Valley and the northern altiplano, where large numbers of indigenous people worked in servitude on agricultural estates held by a small, privileged class of Spanish decedents (Mitchell 1997). In this and also in the context of the Great Depression and the bloody Chaco War, the MNR (*Movimiento Nacionalist Revolucionario*) rose to power throughout the 1940s on a platform championing rural peasants and the urban working class alike.

They operated on the ambitious platform of massive land reform: a project to extend suffrage to indigenous populations, nationalize the tin mines, and apprehend the land owned by haciendas. Once dismantled, the MNR promised to hand the land to the indigenous peoples who worked on them in servitude. Not unlike the rhetoric of previous

regimes, the MNR's vision of land reform was articulated as a path towards modernity: Bolivia needed to leave behind the old ways of the backwards feudal order of the haciendas and harness the power of a newly industrious peasantry by granting them their own, small plots of land (Mitchell 1977). To do this, however, the MNR had to form a new Bolivian identity around certain values that were believed to be key in thrusting Bolivia into a modern capitalist economy. Therefore, the liberal project of land reform was intimately connected with privileging a *mestizo* identity and alienating an indigenous one.

Mestizaje, which comes in various forms, is an effort to assimilate—but actually erase—indigenous identities into a monolithic national vision, which intentionally blurs the lines of ethnic difference in order to reconstruct an identity tied to the nation-state (Postero 2007). In the 20th century, mestizaje was an important strategy for building a particular form of nationalism and state-led development based on ideologies of modernization (Hale 2002). The MNR's reform was rooted in these kinds of ideas about Bolivia's future, as is exemplified in its famous phrase, "Land to the tiller." Here, the MNR envisioned an agricultural landscape where land was granted to autonomous individuals practicing such productive land use strategies as monocropping, driving tractors, and planting high-yielding seeds (Healy and Paulson 2000). The MNR's privileging of economically viable and individualized agricultural plots replaced ayllus with agrarian freeholders in a state-led agricultural modernization project (Morales 2003). In this way, land reform that would change the landscape and people's relationships with it was only possible through a more comprehensive political platform of constructing a national, universal *mestizo* identity over an indigenous one: "The MNR

had an unrealistic and inappropriate image of peasants in blue overalls driving tractors within the new social and economic order they were setting out to construct. They wanted the indigenous to stop wearing ponchos and turn their backs forever on traditional agriculture" (Healy 2001: 14). Here it is made clear that the MNR's project relied on recasting a Bolivian identity as a nonindigenous one.

To fortify this point, Andean anthropologist Xavier Albó (1995) remarks that a shift in terminology accompanied this political ideology, where the word used for indigenous peoples changed from *indio* to peasant, to emphasize class as the most important signifier of identity over ethnicity (1995). Albó's discussion of the "peasantist" discourse of the MNR thematically resurfaces in the work of other academics such as Abercrombie (1998) and Thomson (2003), who speak of the "peasantization" of the Indian in the rhetoric of the MNR alongside the proletarianization of the indigenous people via the party's policies. Along these lines, Kohl & Farthing point out, "The creation of campesinos—literally people who live in the countryside—as a social category after the 1952 revolution reflected the hegemonic modernist discourse that sought to overcome the 'backwardness' of indigenous people in order to create a *mestizo* nation" (2006, 48). In this way, the party's rhetoric becomes an important point of analysis for understanding how categories based on identity inform and justify policies that sanction some forms of citizenship over others. These details serve as evidence that in some ways, this Revolution is in continuity with the Republican era. Indigenous identities, associated with the past, are to be left behind: and many ways of doing this, of course, is writing this identity into the land.

In reaction to the rhetoric of the MNR, the *Katarista* movement gained momentum in the years following the revolution: maintaining a strong tradition of push back of indigenous people against the modernization project of the agrarian reform. Channeling 1791 protagonist Tupaj Katari, the *Katarista* movement was an indigenous-led initiative calling for autonomy, full citizenship, and a Bolivian state that respects a pluri-national identity (Albó 1995). The years following the revolution signaled deliberate steps by growing numbers of people towards mobilizing around an ethnic consciousness, and one that argued for a more inclusive national identity. *Katarismo*, with origins in the 1960s, is an important sign that the outcomes of the Revolution fomented a grassroots effort to expand what it means to be Bolivian.

After two decades of revolution, the dismal effects of land reform on the national economy, military coups, and the onslaught of neoliberalism, rural to urban migration spiked intensely (Perez-Crespo 1991). Statistically, it can be said of this phenomenon that, "While the country's population doubled from roughly 3 million in 1950 to 6 million in 1986, the urban population more than tripled in the same period…In 1900, only 14.4 percent of the population lived in urban centers. This percentage increased to 27 percent in 1976, and nearly 50 percent in the late 1980s" (Perez-Crespo 1991, 4). This massive rural to urban migration was nowhere more pronounced than in the department of Potosí, where livelihoods formerly centered on pastoralism and subsistence agriculture were profoundly undermined by neoliberal structural adjustments.

In contrast with these agropastoral subsistence livelihoods on the altiplano was the growing hydrocarbon industry in the lowlands between 1980 and 1988. Significant state investment during this time was channeled to the Chapare coca-growing region and

the burgeoning hydrocarbon/industrial agriculture sector in the Amazonian department of Santa Cruz farther east (Perez-Crespo 2011, 19). Yet this investment towards *modern* economic ventures was not channeled towards departments seen as more *traditional*. Like the southern altiplano, however, Perez-Crespo astutely points to the fluidity of these categories:

> …there is nothing 'natural' about this division. It rather reflects state development policies influenced by lobbying groups and alliances among social classes. The state leads investment in economic sectors, activities, and areas, which then become modern. This is what happened in the 1950s and 1960s to the then 'traditional' Department of Santa Cruz. By the same logic, areas where investment and modernization were considerable in the past, such as the Departments of Potosí and Chuquisaca, are today stagnant and 'traditional.' (1991, 25).

Here Perez-Crespo points to the spatial movement of economic prosperity over time. While Potosí was once the silver mining capital of the world, supplier of riches to the Spanish Crown and a site of urban boom and technological advancements, by the 1980s it was on the fringe of economic life in the modern state of Bolivia. Meanwhile the colonial legacy, which prescribed the eastern lowlands as home to disparate populations of "savages," had persisted until that point. With the development of the hydrocarbon industry and large-scale agriculture, the department of Santa Cruz became both a discursive and material site of modernity. Large scale soy production along with the economic promise of natural gas reserves, for example, brought significant wealth to conservative tycoons in the department—their ventures poised as a symbolic triumph that propelled Bolivia into the modern capitalist market. As such, during the late 1970s under General Hugo Banzer (1971-1978), large scale, export-oriented agriculture was financed heavily in Santa Cruz (Kohl & Farthing 2006), yet the southern altiplano received little economic support. From this perspective, while "traditional" places are both landscapes

of indigeneity *and* economic depression, the prosperity of industrialized landscapes is necessarily *un*-indigenous. Here, in the eyes of the state, landscapes of the future and landscapes of the past are informed by a set of conceptual categories: the categories between economic depression and indigeneity are linked as are modernity, prosperity, and non-indigeneity. Yet, as can be seen through the long arc of Bolivian history told thus far, these landscapes become and un-become such over time.

The rise of the MAS

The rise of the MAS (*Movimiento al Socioalismo*) came at a time of mass protest against the previous neoliberal regime. Rising to fill the space opened from popular protests that led to the ousting of the then-president Gonzalez Sánchez de Lozada,[1] the MAS at least *in rhetoric* represented a rupture from the past. In a post-colonial landscape, the revolutionary visions of the MAS are no more apparent than the 2009 Constitution, where rights are granted to *Pachamama* and a new ontology—distinct from the liberal state model—is posited in an effort to decolonize the state (Escobar 2010).

Yet these changes are not without criticism. Despite outspokenness on the international stage on the rights of *Pachamama,* hydrocarbons extraction has not subsided under the MAS. Collective land titling, a pillar of the MAS's efforts to foreground indigenous forms of citizenship, has also been critiqued (Anthias & Radcliffe 2015). More theoretically, some intellectuals wonder what *declonization* even means: how can a

[1] Unpopular Goní Lozada, who lead the MNR on a neoliberal platform, served as president from 1993-1997, as well as a second term in 2002. He was ousted from office by popular protest, and granted asylum in eth US in 2003 (Shultz & Draper 2008).

place with a history of imperial Incan conquest, nearly 500 years of Spanish colonialism, Republicanism, and neoliberalism decolonize itself? How can such a movement represent the plurality of indigenous identities, meeting the needs of disparate groups from highland Aymara to lowland Guaraní, with sometimes directly contradicting demands? How can an indigenous identity be centered if "indigenous" as a category is fluid and difficult to define?

Nonetheless when placed in this longer historical context, the MAS's conceptual categories and positioning of indigenous identities put forward in their policies serve, *at least in language*, as ruptures with the past. An example pertinent to the topic under consideration is the MAS's "National Plan of Development for *Vivir Bien*." Within this national strategy, and important to the discussion of quinua, is the *Decreto Supremo* 28558, which was designed to, "promote ecological production [of quinua] at the national level and implement a national system of control of ecological production" (Quintanilla 2011: 12). Out of this decree came Law 3525, "The Regulation and Promotion of Ecological Production of Agriculture/Livestock and Non-timber Forests," which had the objective to promote an "ecological Bolivia in which the cultivation of quinua is considered one of the strategic products of the country" (Quintanilla 2011: 12). This law, with its promise to support smallholder farmers as they attempt to become certified organic, is therefore a significant moment in the longer historical context of the relationship with indigenous campesinos and the state, representative of shifting ideas about the role of smallholder, indigenous identities in the nation (and therefore in the economy), and will be further explored in Chapter Four.

With this new legislation, the southern altiplano, a landscape that had long been considered underdeveloped, marginal, and un-modern becomes the site of a strategic economic export *because* it is linked to indigeneity; is characterized by a unique physical geography that allows highly valued varieties of quinua to grow; and, more broadly, it can easily be incorporated into a new national identity aligned with claims about a more ecological future. The historical context and the current reality of the commodity chain for organic quinua will be taken up for the remainder of this chapter and considered more closely in Chapter Three. Subsequently, the themes regarding the ways in which the MAS and other actors seek to ensure quinua as a strategic export through claims to indigenous identities will be reviewed in further detail in Chapter Four with the discussion about efforts to formulate a Denomination of Origin (DO) for Quinua Real.

Significant space has been devoted to these themes in order to show two things. First, quinua is tied to indigenous identities in a post-colonial landscape: while in the 1950s, the altiplano was a recipient of modernization projects, in later years, the places where quinua had been grown were seen as unproductive traditional landscapes that were unsuitable for state investments. Second, these conceptual categories that equate indigenous forms of land use as unproductive and anti-economic change significantly with the quinua boom, and the rise of the MAS, which posits a conflation of these categories that were previous considered oxymoronic. Here, efforts are made to valorize landscapes dominated by indigenous knowledge, land tenure systems, and crops rather than rupture from them. In order to show the tensions within these claims, however, I now shift geographic scales in order to look more closely at the material changes that

have taken place on the altiplano as a subsistence crop is transformed into a lucrative commodity on the international market.

Shift in Production

This wider historical arc shows that the southern altiplano has been a site of economic marginality, as much because of colonial legacies and state neglect as to lack of exploitable resources. On the eve of the boom up until the 1970s, the majority of rural communities of the southern altiplano were organized most commonly in ayllus with communal forms of landholding. In this region, the ayllus practiced subsistence agriculture and grew quinua primarily for autoconsumo, or for the home and not to be sold in markets.

As has been stated before, the sub-regional climate had prevented the development of large-scale agriculture, since commercially viable crops such as wheat and corn do not survive well there. This means that the southern altiplano was also spared the encroachment of the hacienda system, and communal forms of landholding remained largely intact (Kerssen 2015). Communities in this area have a long history of practicing pluri-active livelihoods. According to Tristan Platt (1995), high climatic unpredictability meant that in the 1800s and until Platt completed fieldwork in the 1970s, agriculture was supplemented with long distance exchange and livestock rearing. These observations importantly underscore that climatic uncertainties cause agriculture to almost never be undertaken alone: people of the southern altiplano had always diversified their interests.

These observations are confirmed by the work of authors from the Bolivian NGO CEDLA, who constructed a study of the effects of the quinua boom. They observe that rural livelihoods both prior to and throughout the boom are frequently supplemented by work in the mines or urban areas due in part to the climatic conditions, but also due to the colonial legacy that left little demand for quinua in urban markets. The following excerpt of an interview from their study with a quinua producer in the southern altiplano shows that prior to the boom, livestock rearing took priority over agricultural ventures:

> Once my father brought about 50 sheep ... they were sold and bought on the market; In fact, the sheep were taken as contraband to Chile. At that time there were a lot of donkeys, because there were plenty fields, but there were no crops. The crops were for eating, more for subsistence than for trading…Livestock was something that has always existed, it was the best way…because quinua was not enough, it had no value. Cattle were preferred because there was pasture (Demetrio Nina in Ormachea & Ramirez 2012: 60, translated by author).

Here we see an individual example that illustrates the ways in which quinua production was not the main focus of livelihoods, both for physical geographic and socio-historical reasons, and was restricted to autoconsumo.

Before the rise in popularity of quinua in international markets abroad, its production was mainly performed on the altiplano's hillsides. While vast and flat, the altiplano is also lined with large hills. Prior to the boom, quinua production was almost exclusively done by manual labor—including the preparation of soils, planting of seeds, harvesting, sorting, and processing of the grain. In what follows, I describe production methods that were almost exclusively used in quinua production before the boom—but I use present tense because these methods are still practiced in many communities in the southern altiplano—and it is in fact this labor that the producers, among other actors, say adds value to their quinua.

Production on the hillsides has many advantages. Firstly, quinua planted on the leeward sides of hillsides is spared direct abuse from the strong winds that sweep across the altiplano. Since the frigid air does not make contact with the quinua at a direct angle, the cultivated area is more often spared from the effects of freezes (interview by author with Raul Saravia, technician at PROINPA 5/17/2016). Secondly, due to the fact that livestock are a large part of rural livelihoods in this area, the flat plains were mainly devoted to pastures. The large, flat expanses provide space for camelids, cattle, and sheep, and also work in complementarity with the production of quinua: the livestock, sustained by the plains, provide fertilizer for agriculture done on the hillsides (Quintanilla 2011).

Quinua on the hillsides also is advantageous for reducing pest populations. Placing the crop at slightly higher elevations positions it in cooler environments, where pests have lower incidences (Ofstehage 2011). The preparation of the soils by hand also keeps pest populations low: overturning soils on the hillsides by hand allows for only the surface layer to be overturned, eliminating weeds but also allowing humidity to accumulate during the rainy season. The limited rotating of the soil combined with the accumulation of humidity makes the soil difficult for insect larvae to enter. Left to dwell on the surface, insects are prone to the intense solar radiation experienced at high altitude and their populations are kept low (Aroni et al 2009).

Walsh-Dilley (2013) relays the labor involved in the process of planting seeds using traditional methods, presented below, stressing the fact that hand-labor serves as an important risk-aversion strategy. She describes the painstaking lengths to which

producers go in order to preserve the moisture in the soil in an extremely arid highland climate. Using a tool called a *taquiza,* producers achieve minimal overturning of the soil:

> When they reach the moist soil underneath, they carefully dig a bit further, taking pains not to mix the moist and dry soils. After a pinch of seeds has been deposited, it is covered first with a layer of moist soil and then topped with the dry soil that has been brushed aside…taking care not to disturb the crust that develops atop unagitated soil." (668)

The top layer of soil, which Walsh-Dilley describes as the crust, is important to maintain because it provides a hard outer layer to guard against the constant, strong winds that otherwise scrape the soil away. In addition, planting by hand allows quiñeros to plant at the appropriate depth that matches the moisture in the soil: the humidity in the soil may not rest at a uniform height, and being able to find the appropriate depth could mean life or death for the plant—a process of feeling the moisture with one's finger tips that mandates the human touch. This laborious process also mandates a reliable network of reciprocal labor (Walsh-Dilley 2013).

Using tools such as the *liwkana,* the rest of the production on the hillsides is also done by hand. Aspects of production such as the *trilla* (threshing) is done using a tool called the *waktana,* a heavy stick that is used to strike a pile of dried quinua in order to separate grain from plant—an extremely arduous task. Another example of manual labor throughout this process that sorting of the grain. Quinua typically does not grow very uniformly, and so the winnowing process is important for separating high quality (larger grains) from low quality (smaller ones). The method utilizes the strong and steady winds on the altiplano: grains of quinua are sorted according to their size as they are dropped at an arm's length into the wind and allowed to fall to the ground. The heavier, larger grains fall closer while the lighter ones are carried farther by the wind (Aroni 2005).

Production composed of the labor processes described above also includes *actividades culturales* (cultural activities): rituals surrounding when to plant, where to plant, when to harvest, and what variety of quinua to plant that year (*Jach'a Qullu* 2014). For communities that grow quinua on the hillsides, deciding the variety of quinua is informed by a large number of bio-indicators: messages from the environment that inform producers what kind of year is ahead of them (e.g. rainy year, dry year, a year of many freezes). The great number of varieties of quinua mean that some strains do better under drought while others are more effective at coping with freezes (Lozano 2014). Examples of bio-indicators include the flowering of the thula (*Baccharis microphylla*), a native plant (Jach'a Qullu 2014), the fruiting of various local cacti, and the color of the eggs of a bird called a Leke Leke, among many more (FAUTAPO 2012). Despite the importance of being able to anticipate the conditions of the year ahead, these indicators have become more difficult to read due to climate change. Insight into this issue is provided by a producer who contributed to the book *Jach'a Qullu*, a project meant to bring the insights of producers who continue to produce quinua on the hillsides to a wider audience:

> For planting quinua, our grandparents took into account different natural indicators such as the flowering the leña, the howling of foxes, the presence of some small animals and the buds of wild plants. This will depend on each ecosystem, including each plot. With the environmental deterioration of planet earth, these prognoses are out of balance, but the older people are finding answers to the changes (Cleta Lopez in *Jach'a Qullu* 2014, translated by author: 22).

Clues from the environment about when and what to plant are important to communities in order to minimize risk when partaking in agricultural activities in an unpredictable environment (and increasingly so).

Lastly, the soils in this area mandate long periods of *descanso*, or fallow period. Allowing the campo to remain in descanso for a longer period of time is important in an arid environment: waiting an extra year can make a vital difference in how much humidity is stored in the soil and available to the plants (Joffre & Acho 2008).

On the cusp of the quinua boom, the production of quinua could be characterized by a particular metabolism: one that used highly localized ecological knowledge, depended on a web of social relationships within the community, and also one that did not rely heavily on agricultural production (instead, activities like livestock, seasonal urban work, mining). This was due in part to inhospitable climatic conditions—though these are certainly not the entire explanation. A long colonial legacy that positioned indigenous identities low on a racial hierarchy meant that quinua, very much associated with rural indigenous livelihoods, was disparaged as "*comida para los indios,"* "food for the Indians," a derogatory phrase laden with implications about race and class. Therefore, the grain lacked any kind of market in urban areas. A telling example of the value of quinua prior to the boom is from an interview I had with a technician from the NGO FAUTAPO, who told me that with two quintals[2] of quinua, people in rural areas could trade for one quintal of sugar. This is also stated in the interview with a community member in a Potosí province by Salinas & Ragonese, who explains, "A trade was one for two, or it would be one quintal of white flour for two quintals of quinua" (2005: 11). These trades, primarily done by intermediaries who would bring commodities from urban areas to the ayllu, were one of the few outlets for quinua production. Though as is shown

[2] A quintal is a unit of mass equivalent to 100 pounds, and is a commonly used metric in Bolivia.

in these examples, the economic value of quinua was not worth more than two quintals of flour—a long way away from quinua's value in 2014 of US $300 per quintal.[3]

The dearth of viable markets for producers of the central and southern altiplano departments of Oruro and Potosí in the 1970s and 1980s caused the region to suffer acute economic marginalization. During this period, rural to urban migration was highest in these departments. Of all Bolivian departments, Potosí experienced the lowest percent annual growth rate of population (2.2%) for the period 1950-2001. Meanwhile, for the same period, Santa Cruz experienced 6.7% annual growth rate (O'Hare & Rivas 2007: 314). Persistent rural out-migration, increasingly pluri-active livelihoods that depended more on mining or urban-sector employment, and little to no market for quinua meant that prior to the boom, the Andean grain was actually disappearing from the altiplano.

Intent on addressing rural poverty, NGOs arrived to the southern altiplano in the 1970s. Bringing with them ideas about modernization inspired by the Green Revolution and the importance of productivist agriculture, they supplied quinua-growing communities with tractors, fertilizers and pesticides:

> The technical assistance arrived with the tractors. These tractors made the work fast because we only had to do work by ourselves. And also the fungicides appeared. The tractors arrived and plowed huge extensions of land and we saw that it produced well; (it was happy for us), but the pests, the worms, appeared, and together with them there were solutions. The technicians advised us to utilize insecticides, the pesticides. And the worms disappeared, for us it was something marvelous, because the production like this was secure. But it turned out that the land that had been plowed by tractors produced two years, maximum three years…And so, we had realized that we could not produce without fumigating and without a tractor, and there appeared more and more pests (interview with Francisco Quisbert, quoted in Salinas & Ragonese 2005: 5, translated by author)

[3] This number has been produced using INE 2016 data on the price of quinua in USD per ton for 2014.

This involvement of NGOs in the early 1970s is corroborated by Aroni et al (2009), who offer that the agricultural machinery introduced by private entities expanded the agricultural area beyond the hillsides onto the plains in order to utilize tractors. Here again, the relationship between increased presence of pests and the use of pesticides is emphasized:

> Given the eminent presence of two types of pests in the production process of Quinua Real, in the mid 1970s and early 1980s, farmers in the region had no other alternative than the use of organophosphorus insecticides (Tamaron, Folidol), which arrived in large quantities through the donations to peasant organizations, which were distributed to the majority of quinua producers without prior training or proper planning of their use (Aroni et al. 2009: 51, translated by author).

The environmental costs of the introduction of pesticides to the region is well documented once more by interviews with producers by Salinas & Ragonese (2005: 5), who describe how pesticides were disastrous for foxes that inhabit the area, which primarily preyed upon rabbits: "And these rabbits went eating our *chacras*,[4] until we could not control them, apparently because we had exterminated the foxes". The use of pesticides on the altiplano have no doubt an uneven geography, where many places did not use them—especially because almost all communities growing quinua at that time were doing so for the purposes of autoconsumo. However, attention to this issue is important towards illustrating how in later years, ideas about agriculture generally and methods for pest control specifically have shifted (perhaps only nominally) away from technological modernism embodied in productivist agriculture preferred here, towards new ideology about small scale, organic farming.

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[4] *Chacra* is a culturally important, often gendered, household garden plot seen throughout the region (Perreault 2001).

Despite these environmental costs, producers began to search for markets to sell their quinua production. Finding these markets first in Peru (Salinas & Ragonese 2005), quinua producers formed the first quinua cooperative, CECAOT (*Central de Cooperativas Agropecuarias Operación Tierra*), as early as 1974, followed by the formation of the now largest quinua cooperative, ANAPQUI (*Asociación Nacional de Productores de Quinua,* National Association of Producers of Quinua), in 1983.

In 1986, the FAO performed a study that defined quinua as a strategic plant for the Andean zone, noting its protein-rich and amino-acid qualities, rare for a grain (Aroni et al 2009). Subsequently, in 1993, NASA published a report entitled "Quinoa: An Emerging 'New' Crop with Potential for CELSS,"[5] lauding the grain's nutritional qualities as ideal for sustaining astronauts in space.

After the publication of these reports, coupled with the actions taken by Bolivian producers in search of markets, a chain of events was set in motion. In the 1990s, consumers in the Global North began to learn about the benefits of quinua and become interested in buying *organic* quinua. As such, the early 1990s brought about the first real expansion of the international market for organic quinua, linking Bolivian producers to health conscious and luxury consumers in the Global North. In Bolivia, the rising popularity of international organic networks are evident in the formation of AOPEB (*Asociación de Organizaciones de Productores Ecológicos de Bolivia*, Association of Organizations of Ecological Producers of Bolivia), a consortium of NGOs that formed in 1991 as the first real support for producers seeking certification and commercialization of organic products. In 1996, AOPEB promoted the creation of a non-profit organic

[5] CELSS stands for Controlled Ecological Life Support System.

certification company, Bolicert, which acts as the private sector national certifier of organic quinua for export (Quintanilla 2011).[6] Subsequently, a number of other international private TPCs began to be involved in the quinua commodity chain, including Natur Land de Suiza, Ecocert, and QAI (Quality Assurance International), with headquarters in Switzerland, France, and the US, respectively (Liberman 2008).

The rapidly increasing popularity of organic quinua created an enormous increase in prices, forming what is known as the quinua boom. The boom is characterized by huge increases in quinua production, moving far beyond the rural and economically marginalized areas where it had been grown, and expanding out across the southern, central, and northern altiplano (Ormachega & Ramirez 2013). The graphs below show a series of relationships that visually depict the enormity of this boom.

Volume and Value of Quinua Exports (in millions of USD) from 2005-2015

[6] Currently, AOPEB is the certifier for the national organic (or, as the law differentiates it, ecological) standards. What these standards are comprised of and how they are governed are laid out in Law 3525, which was established in 2006 as part of wider reforms brought about by the MAS government. A closer look at these standards, and the language used in Law 3525, will be looked into with more detail in Chapter Four. Though it should also be noted that despite these actions taken by the state to form national standards and certification, quinua producers ideally hope to export their production, and so they still need to be certified under the importing country's standards.

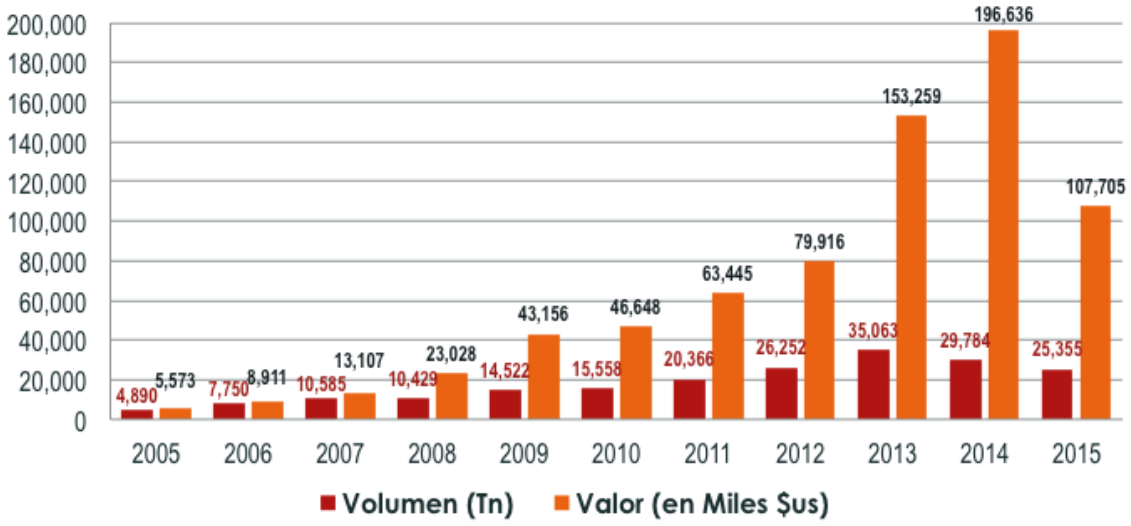

Figure 2.2: This graph depicts the volume (shown in tons) of quinua exported from Bolivia in red and the value of quinua prices on the international market shown in millions of USD in orange for the period 2005-2015. The value of quinua shows a steady increase with a huge spike in 2014, and a precipitous dropping-off in 2015. Graph by the MDRyT based on data from INE (2015).

Prices of Exported Quinua (USD/Ton) from 2005-2015

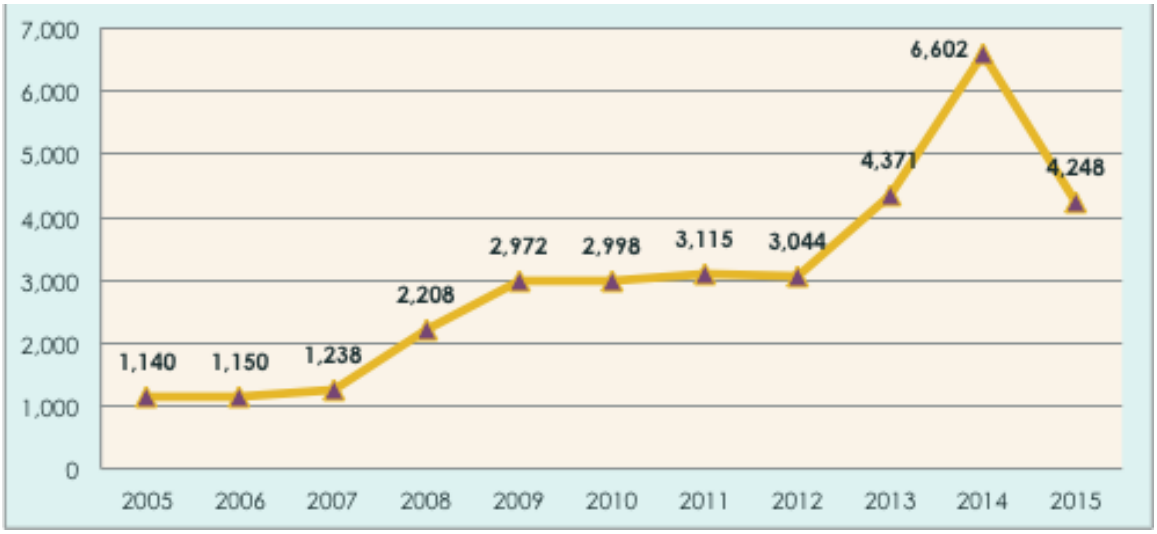

Figure 2.3: Depicted above are prices for quinua from the period 2005-2015, expressed in USD per ton. Prices show similar trends as value, with steady increases and a peak in 2014. Graph by MDRyT based on data from INE (2016).

With peak production at 35,063 tons in 2013 and peak prices at $6,602 per ton, the enormity of the quinua boom can be seen in these graphs. Headlines printed on popular magazines from the time express the frenzy of the increase in prices, such as "La quinua orureña que se va a Europa," ("The quinua from Oruro that leaves to Europe") in 2003 and "El valor del grano se duplica en los supermercados y tiendas de EEUU" ("The value of the grain duplicates in the supermarkets and stores of the EU") in 2014. Throughout this period in the Global North, quinua became a household name, frequently cited by popular figures such as Oprah Winfrey; could be seen paired with culinary palates from all over the world; is able to be purchased frozen and ready for the microwave from popular retailers like Trader Joe's; and importantly, in Bolivia, can now be found in fine dining restaurants, lauded as a symbol of national identity.

In order to assure eager consumers in distant places that the quinua they buy in grocery stores is indeed organic, third-party certifiers (TPCs) connect Bolivian producers through a complex commodity chain. This chain ensures that the commodity has been produced under an approved set of production methods, formulated by a combination of public and private institutions in the importing country. All of this is communicated to the consumer through the use of a label. In Bolivia, the governance of this commodity chain creates a complicated web of social relations, what I will from now on refer to the *complejo de quinua orgánica*,[7] and the subject of further detail in the next chapter. For

[7] In English, the *complejo de quinua orgánica* translates to "the complex of organic quinua. I have chosen to keep this phrase in Spanish because I believe it more accurately

now, however, it is important to state that the *complejo* consists of producers, inspectors, collectors, certifiers, factory owners, certifiers of factories, factory workers, transporters, third-party certifiers, retailers, and regulators of government standards. All of these actors involved in the realization of the commercialization of organic quinua operate within this chain with varying degrees of power to influence it.

Because of the boom, quinua production has extended far beyond the hillsides where it was once cultivated only as a subsistence crop, to reach out onto the vast plains of the altiplano. The skyrocketing prices made it possible to invest large amounts of capital into quinua production—and in some places, tractors dot the landscape, and production takes place on a much larger scale. As such, the laboring process, in some places, can look much different than that described above, and includes new actors, relationships of power, and processes. Nonetheless, this process is uneven. Tractors are not adopted by everyone: either due to economic reasons or in some cases, as will be explained, ideological ones. The material reality of this transformation made itself known to me when I was lucky enough to take a tour of one of the factories that produces organic quinua in the central altiplano, a 20 minute drive outside the city of Oruro. There, I witnessed enormous sacks of quinua piled high to the ceiling. The loud and continuous drone of machines as they cleaned, dried, and sorted the grain towering overhead made it difficult to hear my guide as he explained what each part did. There were a few workers there who helped quinua along the conveyor belt, but they wore gloves and face masks so as to keep as little contact with the production as possible. In another room, brightly lit and remarkably quiet, there sat a scientist with a microscope. She used an instrument to

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captures both the nature of this web of relations as well as the political economy of power within the *complejo.*

slide the grains of quinua under its lens. My tour guide explained that the factory chemically tests samples of quinua that come through to verify it is organic—each sample is properly sorted and labeled with six-digit numbers and letters that correspond to the producer who is responsible for that sack of quinua. Leaving this room and returning to the factory floor, I came across a machine that performed one of the final stages of quinua production—the sorting of the grain. In that moment, I found myself thinking that not so very long ago, and indeed practiced in many places that produce quinua today, this process relies on the power of the wind to sort the grains. I bring this up not to have nostalgia for the past, but to highlight how labor in quinua production has changed. To me, the factory was a vivid example of a changing metabolism in quinua production, and the scientist's microscope, used to inspect for chemicals, was testament to the 'alternative' commodity chain to which this factory was connected. Looking at the enormity of the of the building, I also thought about the tools that I had seen in a local market, ones that did the very same job sorting quinua grains as the factory and the wind, but with varying degrees of machination: one tool was powered by a hand crank, the other by motor.

Photo 2.1: An example of a *venteadora* (a machine that sorts quinua) with a motor. Photo taken by author in a market in the town of Challapta of the Province of Oruro.

Photo 2.2: *Venteadoras* without motors, powered by hand cranks. Photo taken by author in the same market, just across the street from the photo above.

As will be explored in subsequent chapters, the quinua boom, provides unprecedented opportunity to a historically economically marginalized area—yet it does not do so uniformly. While many enjoy the benefits of high prices, and the new opportunities in professional occupations as certifiers, others face barriers to enter the market as producers. The enormous profitability of quinua means that differentiation among campesinos occurs: where some succeed in expanding their fields, reap high rents on organic production, and invest in machinery, others are left out of this profitable market.[8] I offer a final, illustrative example on this note. When Paty and I visited Challapta, we first went to a quinua market, the one I mention above. Paty was kind enough to accompany me to the market, but she had her own reasons for going to Challapata. As has been stated before, Paty and her family made their living selling motor oil, and so while we visited the small town outside Oruro, she and I also visited shops that sold car parts so that she could try to make business connections. An interesting thing about going to Challapata with someone interested in selling motor oil products to car part stores is that those places tend to also sell tractors. In the town on the central altiplano known as the "Wall Street of quinua," as it was described to me once, these tractors are, of course, primarily sold to quinua producers. Below is an excerpt from my notebook that describes this occasion:

> As we walked on the dirt roads on the outskirts of Challapta, the wind blowing so fast that we had to shut our eyes as dirt sprayed into our faces, the monochromatic landscape of small houses gave way to a monumental building. Vivacious reds, oranges, and yellows stood in startling contrast to the brown and colorless neighborhood. The four story building with traditional Aymara architecture towered over every other home in the neighborhood. It looks like the tractors for sale, lined up in front the business called

[8] Still others reportedly face conflicts over land access, seek work on others' plots, and/or cannot pay off the investment they have made in agricultural technology (Ormachea & Ramirez 2013).

Tractor Wasi,[9] had proven a profitable venture. Inside, while Paty was talking to one woman about selling their oil in her shop, the woman at the counter told me yes, the majority of people who buy the tractors are buying them for quinua—but often the owner of the tractor is not the owner of the land—*tractoristas* own the tractor, and the land owners pay them to turn over their soils (6/26/2016)

Photo 2.3: Tractor Wasi store front in Challapta. Photo by author.

Photo 2.4: The landscape I describe in the quote above. The large and colorful structure stood out against the otherwise monochromatic and single story neighborhood: selling tractors in Challapata is a lucrative business during the quinua boom. Photo by author.

9 *Wasi* is the Quechua word for house.

The anecdote above speaks to the enormous profit to be made in the quinua boom. At Tractor Wasi, a tractor costs USD 19,000 (131,753.60 Bolivianos); and additionally, the attachments for the tractor cost up to 21,607 bolivianos. These high levels of investment in quinua production say much about the profitability of the grain and the expansion in the scale of production, but also hint at the differentiation that occurs among producers. Who were these *tractoristas* that do not own their own land, but sell their services and machine? Who were those that could afford such high degrees of investment and grow in such large quantities? I later learned that many communities pooled their resources and bought a communal tractor (like the case of one interviewee), but even still, over one hundred thousand bolivianos had to mean that differences among those who produce quinua had developed. For me, this experience created more questions than answers, but alerted me to the high degree of variation in experiences among those who produce quinua. These questions fueled my interviews as I asked about methods for pest control, in which I found that differentiations are apparent within the market for organic quinua, as will be introduced in the next section, and more thoroughly explored in Chapter Three.

A Paradox

> The eco-social concept, which in its essence is to provide benefits to the group respecting the natural processes of the Earth, encompasses the *campesinos* who offer us the Andean cereals, our workers and the entire production plant, our various suppliers and you, our customers, providing you with healthy food products in harmony with Nature (Philosophy of a quinua processing company, quoted from the firm's website, translated by author 2/18/2017)

The above quote, taken from the website of a quinua empresa located in the altiplano city of El Alto, is part of a commodity chain that seeks to distinguish itself from from industrial agriculture as testament to the higher quality of its products. To do so, it channels the idea that the empresa—and the producers to which it is linked—opperate in in "harmony" with ecological processes. Despite this message, the changing socio-nature metabolism brought on by increased production of organic quinua is not necessarily more "in-sync" with the environment. This creates a paradox of the international trade of organic quinua. As the increase in demand led to the prolific production of organic quinua, new forms of land use lead to changing environmental conditions: in other words, the boom produced a new material landscape.

Incentives for larger scale production moved quinua away from the hillsides onto the plains, where tractors could be used on large expanses of soil, as has been previously discussed. Growing quinua in monocultivation affected the environment in two ways: degradation of soils and increase pest populations. These two deleterious effects, brought on by a changing socio-nature metabolism, problematize the ecological ideology championed by the actors in the commodity chain for organic quinua.

Firstly, the degradation of altiplano soil has been well documented (Aroni et al 2009; Quintanilla 2011; Joffre & Acho 2008; Jacobsen 2011). The proliferation of the use of tractors and expansion of quinua production onto the plains creates competing interests for land use, where livestock that once benefitted from large pastures (and subsequently replenished the soil with natural fertilizer) no longer have access to these spaces (Quintanilla 2011; Kerssen 2015). The rupture in the camelid-quinua complementarity has shown to decrease heard numbers in some areas (Joffre & Acho 2008), and lead to

higher dependence on off-farm inputs for fertilizer (Aroni et al 2009). Another cause for soil degradation includes monocultivation of particular varieties of quinua that are more valuable on the market in favor of previously utilized practices of choosing the variety best capable of withstanding future climatic conditions, and alternating varieties of quinua to maintain soil nutrients along with the of rotating of other crops. Often cited is the increased incidence of shorter periods of descanso, where typical descanso in the southern altiplano of 4-6 years are shortened to 2 years (Quintanilla 2011). Shorter descanso periods, coupled with minimal rates of vegetative growth due to minimal water resources, contribute to the slow growth of cover crops, and the sandy soils of this region become highly susceptible to erosion from the steady winds (Aroni et al 2009).

To corroborate these findings, below is a graph that depicts the relationship between yields (*rendimiento*), surface area devoted to quinua cultivation (*superficie*) and production (*produccion*). This graph shows that though the surface area of land devoted to quinua is increasing, yields are actually decreasing.

Relationship between Yield, Surface area devoted to quinua, and production from 2005-2015

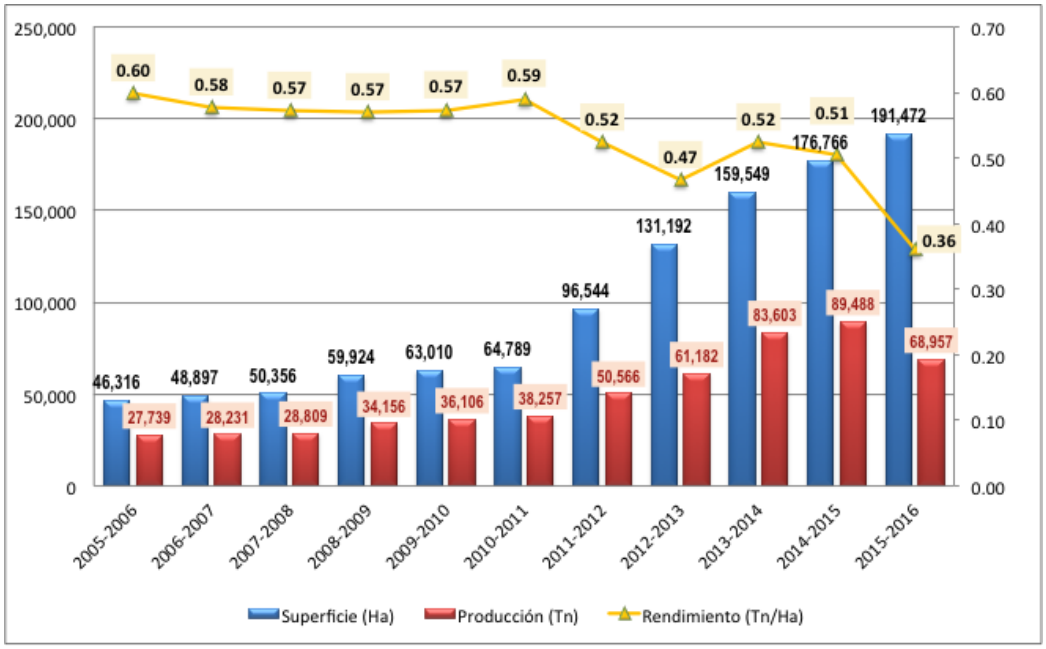

Figure 2.4: Relationship between yields (*rendimiento*) expressed in tons/hectare and depicted as yellow triangles, surface area devoted to quinua production (*superficie*) in hectares and shown in blue bars, and quinua production (*producción*) in tons and shown as red bars. For the period 2005-2016, surface area devoted to quinua increases until 191,472 hectares in 2016, though the capacity for the land to produce, as well as tons of production, show a decreasing trend from 2013-2016. Graph made by OAP with data from MDRyT and INE (2016).

The relationship between increasing surface area devoted to quinua and decreasing yields strongly suggests soil degradation, despite the fact that slightly more than half the production is organic (SENASAG 2014). This also tells of an expanding agricultural frontier and the effects of high wind erosion (interview by author with MDRyT 7/8/2016). The findings of the graph above, which point to decreasing soil fertility, are also confirmed in Walsh-Dilley's (2013) discussion of the negative effects of tractors on the soil in such an arid environment. The care with which quiñeros who grow

on the hillsides take not to disturb the soil, as described earlier, is completely lost in the use of tractors. To illustrate the consequences of tractor use in the southern altiplano, Walsh-Dilley provides anecdotal evidence that when she first started her fieldwork in the area in 2000, producers were using tractors and maintaining high yields: "However…this comes at the cost of poor protection of the moisture in the soil, frequently poor placement of the seeds themselves, and a breaking up of the soil, leaving it susceptible to wind erosion" (2013: 670). Due to these realities, Walsh-Dilley reports that producers in the area have actually returned to planting by hand in order to reduce risk of crop failure.[10]

The second environmental change that contributes to the paradoxical nature of the ecological narratives of the organic quinua commodity chain is that the quinua boom has also lead to higher pest populations. As was mentioned previously, manual cultivation on the hillsides in smaller plots suppressed insect populations. As the use of tractors proliferates, however, the soils are plowed more deeply, creating openings for insects to enter the soil and hide from the otherwise lethal solar radiation. As Aroni et al (2009: 47) explain: "The agricultural machinery created the right habitat for pests because the subsoil was left loose after the rotation of the soils and the larvae had the ability to enter the subsoil and to protect themselves from the solar radiation. As is the case of the ticona larvae and the k'ona k'onas, the larvae manage to complete their biological cycle by being buried in the subsoil and leaving as adults." The ticona (*Heliothis titicaquensis*) and the k'ona k'ona, also called polilla, (*Eurysacca melanocampta Povalny*) are two of the

[10] This process leads Walsh-Dilley (2013) to the conclusion that avoiding risk by planting by hand maintains communal forms of labor, allowing producers in this particular setting an advantage in for-profit markets. This argument is provocative because it questions the assumption that peasant and/or moral economies are disappearing, or under threat, by the steady march of capitalist social relations and modes of production.

most deleterious pests to quinua production, and find suitable homes in the environment created by mechanized agriculture. Here it is evident that the popularity of organic quinua, the boom in prices, and the subsequent expansion of quinua actually produces new natures as the pest populations actually increase.

Other reasons often cited for increased pest populations are the monocultivation of quinua and the strengthening resistance of insects due to years of chemical pesticide use (Saravia & Quispe 2005; Liberman 2008; Vassas et al 2008). The increase in pest populations can be seen by a study done by Cossio et al, in which the populations of ticona and polilla steadily increase from the period 1985-1996.

Fluctuation of the Ticona Population in the Southern Altiplano from 1985-1993

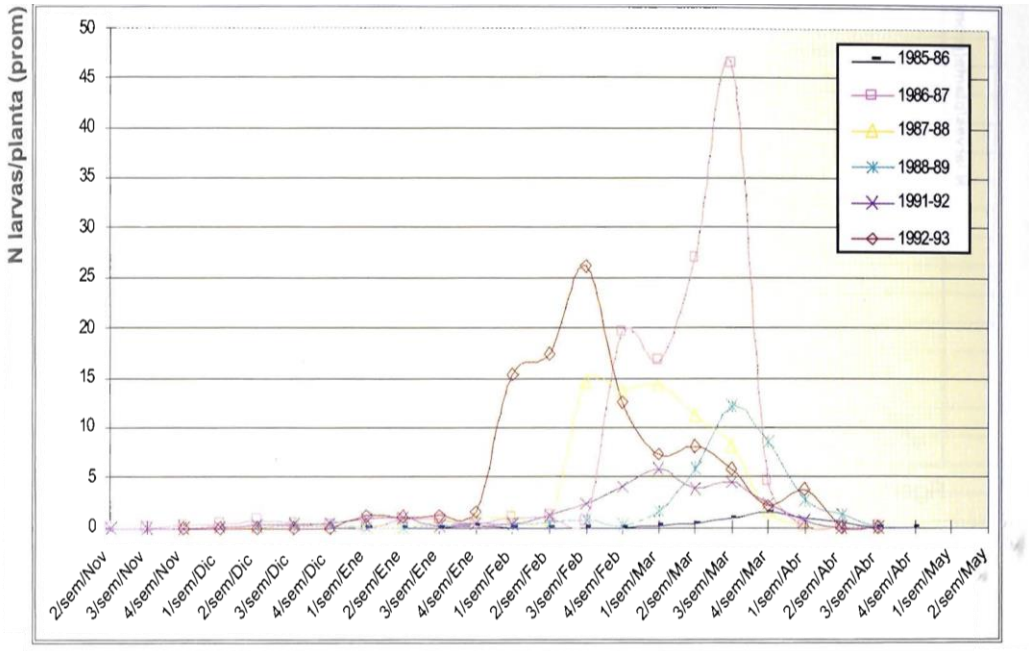

Figure 2.5: This graph depicts ticona populations for 6 agricultural seasons, spanning 1985-1993, expressed in terms of numer of larvae per plant. With populations at no more than 1 larva/plant during the 1985-86 season and up to 46 larvae/plant during the 1992-93 season (Saravia & Quispe 2005: 77)

Fluctuation of the Ticona Population in the Central Altiplano from 1985-1993

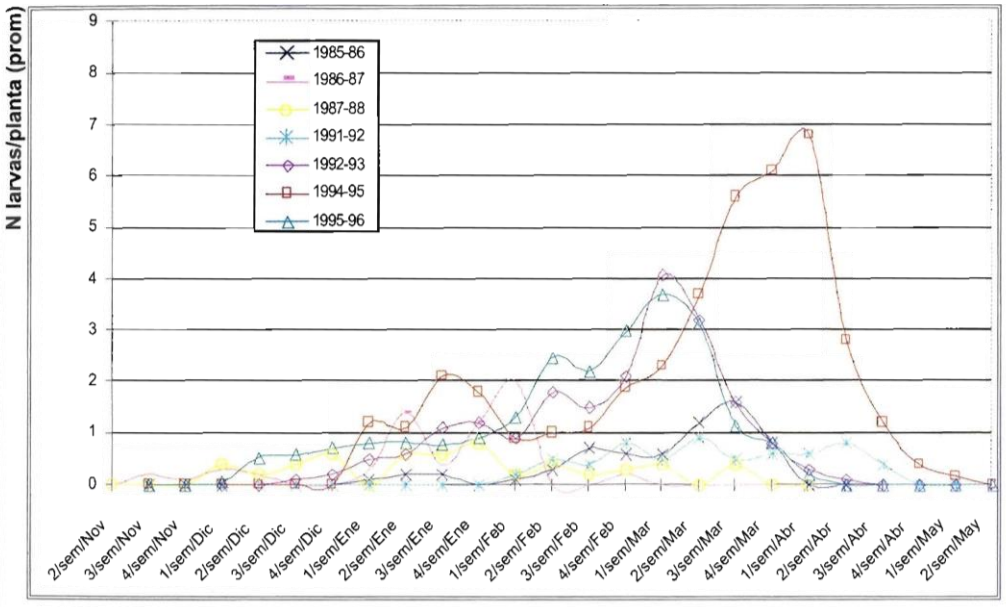

Figure 2.6: This graph shows ticona populations for the same period for the Central Altiplano. Note the difference in the y-axis scale (Saravia & Quispe 2005: 76).

With some irregular years, it is evident that after 1985, when the first tractors were introduced to the altiplano (Salinas & Ragonese 2005), ticona populations increased throughout this period. Important to note as well is that the incidence of Ticona are much higher in the Southern Altiplano, where the largest production of quinua occurs.

According to a study performed by Aroni et al (2009), crop losses due to these two insects are high. Out of 351 communities surveyed in 2008, all expressed that they were affected by pests to a greater or lesser extent. Of these communities, 326 affirmed that ticonas and polillas attacked the quinua, where in places up to 450 larvae of ticona were found per sown field and up to 3000 larvae of polillas were found (ibid. 2009: 48). Additionally, Saravia & Quispe (2005) show that at the time of their study (2005), losses of quinua production due to attack of insects range from 5-67% (averaging 33.37%) in

the southern altiplano and 6-45% in the central altiplano (averaging 21.31%). All of this strongly suggests that insect populations are a difficulty that quinua producers face, and a reality that they had not faced with equivalent intensity before.

In order to meet a changing environment, and to continue producing commodities for the market, new forms of ecological knowledge become necessary. This theme was vocalized in the interview that I had with Raul Saravia, a technician at PROINPA and the author of the study cited above. Saravia has authored many contributions on pests that attack quinua production. In our interview, he emphasized that a changing environment (due to the expansion of quinua production) demands new forms of ecological knowledge.

> **Saravia**: …and with this, there is no translation of knowledge. We have investigated this and we have also investigated the ancient methods of pest control. But the traditional farmers say, "No, when there were a lot of larvas, we would grab them and put them on the road."
>
> **Me**: With their hands
>
> **Saravia**: Yes. They would grab the bugs and put them on the street. And so the insects would leave. And in some reports this is how it is. But they didn't do pest control because when they used to grow on the hillsides, and when the parcels were small, there were not many bugs. This also is indicated [in the reports]. But now, it is difficult.
>
> **Me**: It's difficult because the problems are different and for this reason the knowledge that is needed is different…
>
> **Saravia**: Yes. For example, there was not strong knowledge about pest control because they didn't do it. They didn't do pest control because there wasn't a problem. For this reason the old farmers say "There weren't bugs. We didn't do pest control." When there were larvas, they were put them in the street and they would leave. For this reason there is not ancestral knowledge.
>
> **Me**: Wow. A lot is different now…
>
> **Saravia**: Yes, very different.

The increased incidence of pests, a consequence of a changing socio-nature metabolism, leads to the necessity of new ecological knowledge, a reality of globalization that political ecologists have occupied themselves with since the beginning of the subfield (Blakie & Brookfield 1987). What is interesting about the case of quinua, however, is the paradox of the popularity of *organic* production. Here, instead of preferences for large scale, productivist, and modernist agriculture, a new, "ecological" paradigm is put forth in which synthetic chemicals are to be completely absent from production.[11] While alternative food networks for organic quinua boast their ability to "re-embed" agriculture back into natural processes, it is their very existence that contributes to and perpetuates a vastly different socio-nature metabolism.

A changing environment along with competitive pressures to grow at larger scales is also met with pressures to fulfill the strict standards of organic certification. This struggle to fulfill organic standards and simultaneously meet pressures to grow in larger quantities—all while facing increased numbers of pests—contributes to a perceived need for new technologies. These new technologies take the form of bio-engineered technology from the Global North in such products as bio-cides and insect pheromones. The former is a pest control product certified organic by US regulation and promoted by various TPC institutions and NGOs. Bio-insecticides are comprised of thousands of

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[11] This paradigm shift can be placed in conversation with works by critical scholars of the modernizing tendencies of globalization, such as those by Vandana Shiva (2000), who exposes the nefarious affects of the promotion of Green Revolution technology on peasant farmers. Shiva's work relays the stark material consequences as inputs such as pesticides are discursively positioned as harbingers of modernity. More recent trends show that this discursive framing of agricultural technology is changing: the rising popularity of trans-national organic networks suggests that pesticides are falling out of fashion. Even still, this thesis aims to show that this discursive oscillation in the framing of agricultural production proves no less exclusionary for smallholder producers in the Global South.

micro-organisms that are lethal to certain insects or carry a virus that will kill insects but not the plant. Due to the fact that bio-cides do not contain synthetic chemicals, they are promoted by organic standards and NGOs in Bolivia as an ecological solution to chemical pesticides. Other products that are often promoted is Pyrethrum (*Tanacetum cinerariifolium* sin. *Chrysanthemum cinerariaefolium*), a flower produced mainly in Kenyak and made into an organic pesticide that can be sprayed on crops.[12] These products are more effective at reducing pest populations over larger areas than the use of plants native to the altiplano, which mandate the use of significant biomass in order to produce small amounts of pest repelent (Saravia & Quispe 2005). However, biocides are much more expensive than pesticides, and as will be explored further in Chapter Three, are also unreliably found in the markets. As is well put by Aroni et al:

> Purely organic production is generally carried out on land cultivated on slopes where there is no use of agricultural machinery, and the surface of the soil is rocky, which prevents the proliferation of pests and the maintenance of fertile soil, avoiding the use of agrochemicals…
> The production of organic quinua recommends the use of natural plant extracts and organic repellents, which are expensive and do not exist in the market in large quantities. In spite having the documentation of organic certification, to the producer it is difficult to comply with the norms. Also in the agricultural cycle 2007-2008, the price of the conventional and organic quinua is almost the same (2009: 55).

This statement makes a distinction between organic production done on the hillsides and that which is certified organic—a distinction that became clear to me during my time in Bolivia, and one that preoccupies the following two empirical chapters. This statement illustrates that organic production that is in true "ecological harmony" takes place on the hillsides, where production methods are not pressured by the logic of the

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[12] An interesting example of disparate locations in the Global South connected through the network of the international organic industry.

market to expand, mechanize, monocultivate, and plant with frequency. Within the category of "organic quinua," there is a distinction between quinua that continues to be grown on the hillsides and that which produced for the international organic market in that they are characterized by different socio-natures. This distinction, as will be taken up in further detail in subsequent chapters, speaks to the paradox of the promises made by alternative agri-food networks to re-embed agriculture back into natural processes. In this way, a guiding theme of this thesis will continue to reflect on the fact that in a place that has grown quinua organically for thousands of years, some producers are in search of new technology, and reliant on the production of techniques and products from disparate locations, in order to grow quinua organically in a changing environment.

Conclusion

To return to the quote that began this chapter, quinua's place in the landscape has gone through many transformations: from a vital crop in a vast agrarian empire; to nearly disappearing from the landscape due to colonial racial oppression and its legacies; to being characterized on the international scale and *beyond* as a path to a more sustainable future. In reviewing these transformations, this chapter has sought to place the quinua boom in a wider historical context in order to expose the tensions in ecological rhetoric both private actors who operate within the commodity chain of organic quinua and the state (taken up in Chapter Four). By taking a close-up look at the ways quinua production has changed throughout the boom, I have sought to illustrate society's changing metabolism of nature vis-à-vis human labor—the material affects of which politicize

ecological narratives. By stepping through this particular transformation of metabolic relations, the familiar story of the conversion of peasant agriculture into commodity production for the capitalist market takes on new characteristics, and has wider implications. It shows that discourses in the transnational trade of agricultural goods are changing insofar as pesticides are falling out of fashion (in some places and for some consumers), and new agricultural inputs are placed in their stead as alternatives. Yet do these technological alternatives overturn an established North-South political economy?

After reviewing certain aspects of the physical geography of the altiplano, I considered a few historical moments, which together show the significance of the state's promotion of quinua as a strategic export as it ideologically aligns with broader platforms of state rhetoric about an ecological Bolivia centered on indigenous identities. As was taken on in subsequent sections, however, the material realities of export on the international market are quite different than this ideology.

The boom in demand for quinua and the skyrocketing prices, themes explored in the third section, transformed the landscape and fundamentally changed the metabolism involved in quinua production—a change that has environmental consequences even while the rhetoric of the actors in the commodity chain for organic quinua promises agriculture that is in harmony with ecological processes, contributing to the paradox that was described in the fourth and final section of this chapter.

Meeting this new socio-nature leads some producers to be in need of new agricultural technology that both allows for competitively larger yields and complies with certification norms—though again this shift is uneven and not uniformly experienced among producers, as some succeed in this commodity chain, others are left out (to be

explored in Chapter Three), and still others opt out (covered in Chapter Four). The popularity of organic quinua in circles of consumption in the Global North, and the subsequent standards that come along with the governance of that commodity chain, affect the lives of some producers. In this way, those further downstream in the organic commodity chain exert power to inform what inputs, laboring practices, and ecological knowledge are used in production, subsequently positioning particular actors as experts in organic quinua production—holders of knowledge that is not universally accessible. It is to these themes that I now turn.

Chapter Three
Certification

Introduction

When placed in a longer historical context, the tensions within the commodity chain for organic quinua begin to emerge: it is not the organic commodity chain that "solves" the problems of industrial agriculture because it was not until the boom itself that quinua expanded beyond the hillsides and onto the plains, changing labor and therefore socio-nature relationships. And even while smallholders are certified organic, production for commodity export does not automatically mean that agriculture is performed in "harmony with ecological processes," however that may be defined by third-party certifiers (TPCs), retailers, empresas, and brand labels. The environmental costs of the boom for organic quinua, explored in the previous chapter, are erased when the assumption is that organic agriculture is alternative to—or serving as a more ecological version of—conventional agriculture.

But these phenomena do not play out on an asocial, apolitical field—instead, things like TPC and the term "organic" itself are laden with asymmetrical power relations. The governance of the concept "organic" plays out on a highly uneven social landscape. This means that power is exerted both through the trans-national commodity chain and in the sites of production—such that the geography of standards-making

reinforces North-South power asymmetries that then play out on a landscape already characterized by inequity.

As it relates to the case of organic quinua, the latter of these two things, and the focus of the empirical section of this chapter, plays out in three key ways: 1) Knowledge regarding certified organic agriculture is not universally accessible, 2) Bio-insecticides, the best form of certified pest control to manage aggressive pests, are not easily obtained, creating an uneven ability to comply with certification norms, and 3) These ecological and economic realities often influence producers to use chemicals in order to avoid crop failure—meanwhile, standards imposed on producers are becoming more stringent, making organic quinua production an even more precarious activity. These three realities of organic production and certification create barriers to some but not all who wish to enter the more stable, more profitable international organic market.

These barriers also suggest that despite claims to objectivity, TPC and even the concept "organic" come from particular socio-economic contexts and represent particular interests (made more clear as some quiñeros contest this commodity chain, a phenomena foregrounded in Chapter Four). These themes will be explored in a review of the AAFN literature, which carries the insights gained from Chapter Two into the present discussion in order to argue that the international trade of organic goods does not radically challenge an already-established political economy—nor does it question the ability of the market to solve the ecological and social contradictions of capitalism. And in entrenching market relations, AAFNs more broadly reproduce the environmental consequences and social inequalities they claim to undo.

In order to develop this argument, this chapter first provides a review that shows the ways in which AAFNs have been conceptualized in the food network literature. As scholars debate how alternative these networks are, these debates and the empirical evidence from the case of Bolivian quinua also raise the important and less-considered question of alternative to *what.* This section then goes on to show that despite some hopeful understandings of the alterity of these food networks, they represent part of a shift from government to governance, where a large body of private and quasi-public actors governs the commodity chain for organic quinua, transmitting these specific ideas about what it is to produce organic agriculture to various people and environments around the world. Lastly, this section hopes to de-stabilize the term "organic." By paying close attention to organic as a strategy for product differentiation, it becomes clear that organic as a conceptual category is rooted in specific socio-economic contexts and class interests. These perspectives inform the governance of the commodity chain for organic goods, which creates barriers in the sites of production.

Having critiqued the alterirty of AAFNS, placed TPCs as private institutions that transmit standards from the Global North, and expounded upon the rootedness of organic in particular class interests, I then turn to the empirical data. In adding the Bolivian case to the body of literature on organic agriculture and TPCs, I hope to show that the changes in quinua production are part of a larger movement towards neoliberal food governance models. As these powerful regulatory bodies enforce standards that comply with expectations and demand from retailers and consumers in the Global North, they actually contribute to the way in which quinua is produced in Bolivia. Although, as will be explored in the next chapter, this influence is not without contestation by the state and

some producers. In the hopes of raising the reader's attention to later arguments in this thesis, it should be pointed out that point of view through which organic standards emanate (which claim objectivity) actually make the commodity chain for organic quinua a site of contestation, as actors in Bolivia struggle to channel their own identity through local forms of environmental governance, and lay authentic claims on quinua as a commodity—itself an act full of tensions.

Alternative Agri-Food Networks: counter-hegemonic or a product of neoliberalism?

"To the producer, therefore, the relations connecting the labor of one individual with that of the rest appear, not as direct social relations between individuals at work, but as what they really are, material relations between persons and social relations between things" (Marx 1867, 78).

In the first chapter of *Capital Volume I*, Marx explains the commodity fetish. This concept describes the way in which the social relations of production are hidden behind the commodity-form. This relationship between people, mediated by things, is a familiar experience to all consumers. As I come to the market to purchase a commodity, what is actually entailed in this activity is something social: I come with money, a representation of my labor, to procure something that is human labor in the abstract. And so, while the exchange is really the meeting place of different laboring activities, it is mediated by things—money and the commodity—so that I cannot know the social relations that went into producing it. Importantly, it it is only through this abstraction that the exchange is made possible. In the commodity-form, a thing is made commensurable to all things in order to be bought and sold in a market of frequent exchanges; in so doing, the commodity-form is an essential abstraction of the true value of a thing. Marx's commodity fetish is an important starting point for reviewing the AAFN literature. This

concept defines a commodity in such a way that does not take the commodity-form as axiomatic. It politicizes the abstraction of human labor from the start. This perspective will provide a critical foothold for revealing the assumptions that undergird both AAFNs and some academic analysis of them.

Polanyi's (1944) concept of embeddedness is also useful here. The use of the term in this sense is that despite how they may *appear* in their commodity-form, commodities are inextricably embedded in social and ecological relations: "between actors who exercise socially-rooted values and who have differing degrees and kinds of power" (Klooster, 2006: 544). In this way, the commodity chain is not merely a series of market relationships, but actually a web of power relations. As Dan Klooster paraphrases Michael Watts (1994), "the market is neither free nor natural but rather a theater of power…" (Klooster, 2006: 543). This kind of understanding of the market as an arena of asymmetrical power relations through which the conditions of production are determined provides a critical lens through which to view AAFNs as a form of environmental governance, where the role of private institutions to determine, monitor and vertify the socio-nature metabolism of distant people and places is fortified.

This kind of viewpoint, however, has not been consistently vocalized in the AAFN literature. In fact, many early discussions lauded the alterity of these networks as an important rupture in the dominance of capitalist relations. For example, Hughes (2005) positions AAFNs as one of many "hopeful geographies," which present alternatives to global capitalism and serve as a counter-hegemonic trend. Hughes underpins this position by with the work of Gibson-Graham in *The end of capitalism (as we knew it)* (1996), which famously challenged the assumptions that capital is all-encompassing, and instead

lauded the possibility of alternatives within the economy. Leyshon & Lee (2003) take up this critique as they interpret AAFNs as a space where capital is weak: capitalism is a network that has to be constantly and actively achieved, and therefore there are places and times where these networks are weaker than others, allowing other forms of being to "flower and bloom" (Leyshon & Lee 2003, quoted in Hughes, 2005: 500). In this vien, Whatmore & Thorne (1997) use Actor Network Theory to applaud fair trade as an alternative to corporate agriculture, where peasant strategies and ethical trade networks lie *alongside* exploitative corporate ventures, and provide an opportunity for smallholder producers.

Similarly, other scholars understand organic and fair trade markets as a *reaction* to the industrializing trends of globalized agriculture. This work assumes that conventional markets pre-date organic ones. As Laura Raynolds states, "International organic agriculture and fair trade movements represent important challenges to the ecologically and socially destructive relations that characterize the global agro-food system" (Raynolds, 2000: 297). Raynolds goes on to argue that organic and fair trade markets work to demystify the conditions of production, and as such, serve as answers to the problems associated with globalization, industrialization, and market liberalization (yet the main thrust of her argument is that fair trade does so more effectively than does the organic market). An often-cited early review of alternative food networks by Michael Winter argues that AAFNs are one of many, "countervailing trends, constructed by some as a political reaction to globalization" (2004: 664).

In much of this work, the "alternative" in alternative agri-food network is constructed as alternative to conventional agriculture, with its roots in Fordism. Here, the

fundamental differences between the aesthetics, morality, and nature of alternative and conventional food networks are emphasized. A definition of AAFNs from Whatmore et al. illustrates this: "What they [organics, fair trade, local food] share in common is their constitution as/of food markets that redistribute value through networks against the logic of bulk commodity production; that reconvene 'trust' between food producers and consumers; and that articular new forms of political association and market governance" (2003: 389). Here, Watmore et al. argue that AAFNs, as they work to redistribute value, do so against the fundamental inter-workings of conventional networks. Renting et al. provide a similar description of AAFNs as commodity chains that differ in fundamental ways from the undifferentiated and mass-produced commodities of conventional agriculture. What these scholars have in common is the understanding that AAFNs come as a move away from standardized, place-less, undifferentiated industrial agriculture.

Often at the heart of these analyses is the belief that AAFNs can "re-embed" agriculture back into ecological processes—an assertion with the underlying assumption that agriculture needs to be converted from industrial agriculture. In this literature, AAFNs work to transform a production process that is out of sync with natural processes back into ecological harmony by correcting the environmental bads of conventional agriculture. For example, Raynolds (2000: 297) argues that, "The international organic movement focuses on re-embedding crop and livestock production in 'natural processes,' encouraging trade in agricultural commodities produced under certified organic conditions and processed goods derived from these commodities." Writing contemporaneously to Raynolds, Murdoch et al. understand the embedding of economic relations within natural relations, or even to express concern for nature through the food

chain, as a "countertendency" to the dominance of standardized agriculture (Murdoch, Marsden, and Banks 2000). Often it is said that this term addresses Polanyi's observation that the production of agricultural commodities are embedded in social and ecological relations, yet *dis*-embedded through the exchange of commodities. These scholars argue, then, that as AAFNs communicate the social and environmental conditions of production to consumers, they also influence what agriculture to processes look like—for some this constitutes a re-embedding of agriculture into natural processes. Yet this argument relies on two assumptions. Firstly, it assumes that the market itself has the ability to re-embed. Returning to Marx's commodity fetish, this is not only impossible due to the necessary abstraction of human labor in order to produce a commodity, but also perhaps constitutes a double fetish (Cook & Crang 1996). Secondly, this formulation assumes that agriculture by default relies on methods that are "outside" natural processes, and AAFNs effectually work to *return* agriculture to operating within these processes. These kinds of conceptualizations assume that agriculture needs to be transformed from conventional to organic, yet this axiom is not the case in every place. As was shown in Chapter Two, these assumptions about the ability of the AAFN to embed agriculture into ecological processes can actually lead to apolitical and ahistorical understandings about the benefits of organic production.

Indeed, many scholars take up this more critical lens. David Goodman (2004) addresses the "quality turn" in Europe, which he explains is the growing preference for "ecologically embedded, face to face, differentiated, traditional, and territorially fixed" food over "heavily standardized quality conventions and logic of mass commodity production" (2004: 5). Goodman's work questions the ability of this shift in consumer

preferences to constitute a new form of rural development, and instead critiques this so-called paradigm change as being more in continuity with conventional agriculture than a departure from it. While many argue that in the wake of the Green Revolution, trade liberalization, and commodity dumping, AAFNs are a way out for smallholder farmers, this kind of "green developmentalism," as Klooster argues, is "a kind of misguided development intervention that spreads market relations, privileges the concerns of global elites, legitimates current patterns of consumption, and distracts from the need for direct government regulation" (2006: 543). This perspective, along with Goodman's, questions the power of consumer-driven and market-mediated development.

The political ecology approach, utilized by Klooster (2006) and McCarthy (2006), foregrounds a more critical understanding of AAFNs. Using a Marxian theoretical framework, AAFNs do not bring about all that they promise due to the fact that they take as given the validity of production, exchange, and the circulation of commodities. Despite their claims to alterity, AAFNs attempt to, "harness intrinsic dynamics of capitalism to progressive political projects," and as such: "the attendant dynamics are still unambiguously about satisfying the self-interests of rational individual consumers" (McCarthy, 2006: 809). Here, McCarthy argues that, despite its promise to reconfigure the relations between producers and consumers, AAFNs do not radically question that there ought to be an exchange, that producers should sell their labor-time, and that it should be abstracted in the form of a commodity, its value captured narrowly in the form of an exchange-value. Reinforcing this argument, Freidburg's (2003) case study of organic fresh fruit networks from Africa to European retailers highlights the limit of development through the market due to their rootedness in historical colonial contexts.

Freidburg points out that AAFNs channel neoliberal logic by assuming that integration of peasants into international agricultural markets is a morally valid end unto itself. Her empirical findings support the claim that historical patterns of colonialism along with culturally-specific constructs about food are both at work to inform the governance of distant environments (Freidberg 2003). These critical perspectives emphasize that in many ways, alternative food networks lack alterity, and instead, AAFNs come as part of neoliberalism rather than as a contestation of it.

An influential contribution to this perspective comes from Tad Mutersbaugh (2005), especially in his work regarding the harmonization of certification standards. This work shows that it is only through the actions of the WTO to globalize standards that AAFNs are able to operate, framing this effort as a neoliberal globalization strategy (Mutersbaugh 2005). On this note, Watts et al. understand AAFNs as an effort by the WTO to foster a neoliberal food industry. The WTO, they argue, encourages disparate places that are "suitably endowed" to specialize in non-traditional agricultural production (Watts et al. 2005). If development through harnessing competitive energies in a comparative advantage underpins AAFNs, this raises the important question: alternative to *what*. The continued belief in globalized, liberal trade of agricultural goods and the emphasis on farmers to compete in this system means that it is unlikely that these networks radically depart from already established patterns of capital accumulation. Channeling the observations of Watts et al. (2005), AAFNs do not make uneven development less uneven.

This discussion of the AAFN literature explored the conceptual themes that circulate in the literature interested in understanding the relationship between these

networks and the larger conventional trade of agricultural goods. It is important to point out these themes in order to show that both the governance of organic commodity chain and also the literature that studies them can come with particular assumptions. These assumptions are primarily that modes of agricultural production are predominantly industrial, and that AAFNs have the ability to address the social and ecological problems associated with this—an assumption that proves problematic in the case of quinua in Bolivia in that it obscures certain ecological and historical processes. Furthermore, the governance of AAFNs that span long distances and include a litany of standards formulated in the Global North rely heavily on the involvement of various private actors.

Third Party Certification and Organic as a conceptual category

The following section seeks to highlight the ways in which third party certification is part of the shift towards neoliberal governance, and as such, the standards that third-party certifiers create (in some cases) and enforce emanate from particular socio-economic points of view, though they claim to enforce objective characteristics of agricultural production such as "organic." Wrapped in this discussion as well, then, is the social construction of "organic" as a conceptual category. The consequences of 1) neoliberal governance through TPC and 2) particular social constructions of organic as an objective reality despite its rootedness in a particular set of interests will then be explored in the empirical section in which I foreground the interviews and experiences of Bolivian producers as they navigate organic certification.

Third Party Certification

Certification can be succinctly defined as "formally differentiating a given product from its conventionally produced counterpart based on 'qualities' associated with the product, places, or place of production" (Higgins et al 2008: 18, emphasis in original). Certification adds value by differentiating certain commodities from others, based on their compliance with a pre-determined set of standards. Almost every article in the AAFN literature attributes this newly developed interest in standards and the labels that come out of them to wavering consumer trust in the industrial agricultural system. Therefore, certification is meant to make the commodity chain more transparent by assuring Western consumers of the ecological and social circumstances under which these products have been produced (via a label). Simultaneously, this strategy supports producers through the price premium associated with higher prices that consumers pay for these assurances (Higgins et al 2008). In order to operationalize the concerns of consumers in the Global North, a complex web of TPCs exists. TPC (rather than first or second party certification) means that neither retailers nor producers are responsible for enforcing standards that producers should meet, but rather, the responsibility falls to private institutions that are then able to claim objectivity in their position as a "third party" (Hatanaka 2005).

Since the creation of the WTO in 2000, international trade in agriculture has increased dramatically. Concurrently, the role of private institutions in the regulation of these massive increases in global trade is also increasing. In this way, the shift from public to private regulators also "…has provided an opportunity for the private sector to

reorganize aspects of the market to better suit its needs" (Busch and Bain 2004: 322). What this means is that beyond mere standards-setting actions, the TPC system sets up a governance model, similar to what is typically seen performed by governments, by developing a system of enforcing their own standards (Busch 2010).

Busch (2010) argues that the complex institutional landscape of TPC is emblematic of the new neoliberal economy, which replaces laws and regulations set by governments with law-like regulations set by private organizations. Busch also argues that this form of governance is contradictory. While neoliberal logic instructs the government not to regulate the market, the proliferation of TPCs and their power to enforce their standards has created, "a Hydra-like form of governance that is fully dependent on the state but that largely escapes the confines of law" (Busch 2010, 69). In this way, while the state contracts out their role as regulator of food safety, these institutions depend upon and simultaneously operate outside the purview of the state. A quote from Freidemann & McNair (2009: 411) succinctly sums up this process: "As governments cede regulation of food to private organizations, the 'cross-hybridization of public-private standards' leaves all but minimal hygiene to private organizations…linking producers and consumers into highly audited private systems whose rules are difficult to stabilize." In this way, while neoliberalism champions the power of market self-regulation, this edict is contradicted by the proliferation of market-based regulatory bodies whose power to choose which firms can and cannot participate in market transactions serves as *de facto* law, constituting what Peck & Tickell (2002) call "roll out" neoliberalism.

While food regulations were formerly enforced by individual states, the effect of globalization means that there is increasing pressure for third party regulators to keep uniform standards across borders (Hatanaka et al 2004). Hatanaka et al's (2004) study shows that additionally, super market chains themselves have become increasingly important in standards-making and regulating, viewing stringent standards as "strategic business tools" (Hatanaka et al 2004, 356). Rather than being independent, this study shows that TPCs are heavily influenced by the major supermarkets such as Whole Foods. This type of governance structure has proliferated in the food industry (Davey and Richards 2013). The interest of retailers in organic certification and standards-setting, therefore, has much to do with the added value of organic products (Guthman 2004). Here it is evident that AAFNs, operationalized through TPC, are not antithetical to corporate interests (or neoliberalism), but rather, very much operate within and through neoliberal governance and particular class interests.

The power that these actors exert on distant natures is well documented in a number of cases of the effects of TPC on smallholders in the Global North. An influential case is Hatanaka's (2010) empirical study of the experiences of Indonesian shrimp farmers. Hatanaka shows how the increasing popularity of ethical and environmental standards within the trade of goods opens the space for TPC as a governance tool. In this case, farmers felt that the standards they were being judged upon were undemocratic, formed before the majority of farmers even signed up, and did not reflect their farming practices. To emphasize this point, the following was a powerful quote from one of the participants of the author's study: "[Whoever set up these standards] does not know anything about shrimp farming. What they are talking about is a theory and not actual

practice. I have been farming shrimp whole my life. I know shrimp farming. Why do I have to listen to those who have never farmed shrimp?" (Hatanaka 2010, 711). Hatanaka's findings emphasize that decisions made by private institutions have real effects on the livelihoods of farmers all over the world, who in some cases enjoy little to no input on the standards that are imposed upon them.

Adding to these findings is Mutersbaugh (2005), which shows that with the harmonization of standards for organic agriculture, stricter standards are placed on producers. More specifically, Mutersbaugh shows that as standards shifted from local, more peer-review type process to globalized standards, the effects were mainly felt by producers: "…globalized certification standards increase barriers to entry by imposing more stringent auditing requirements, reducing the ability of certified-agricultural producers to negotiate exceptions, and eliminating alternative paths to certification"(Mutersbaugh 2005: 2041). These findings show that only the most organized producers able to overcome administrative barriers are able to successfully go through the certification process. Most pertinent to this discussion, Mutersbaugh concludes that organic certification actually works to entrench inequality in the commodity chain as the cost of certification is not placed on retailers, but solely on producers.

However influential the role of private interests in formulating and governing standards, in the case of organics, states do continue to play an important role. So while an overall shift towards private regulation of the international trade of agricultural goods is evident, these observations should be tempered by acknowledging the state's relationship with these private actors. In this vein, Rebecca Schewe's (2011) article

compares private TPC standards alongside hybrid state/private USDA NOP (National Organic Program) standards—the latter of which she reports lack democratic involvement by producers, transparency, and regionally apropos standards. Therefore she turns the critique of the neoliberalization of food regulation on its head, suggesting particular TPCs might actually lead to greater democratic involvement rather than the mere exporting of monolithic, undemocratic USDA NOP standards abroad. This argument is productive in that it calls attention to the barriers, frustrations, and disempowerment felt by producers who struggle to navigate the complex governance of the organic industry. In her conclusion, she adds that "If even in their privieleged position New Zealand dair producers and processors are disempowered and frustrated by the USDA NOP, there are serious concerns about how agricultural communiteis in less developed nations might engage with the standard" (Schewe 2011: 1434). Here, Schewe reflects on the political economy of standards making and enforcing, noting that international producers lack input in the formation of the US standard to which they must comply.

There have been numerous case studies on the effect of transnational AAFNs that connect consumers in the Global North to producers in the Global South. Among them, many argue that increasingly bureaucaratic standards set by international organic certification privilege larger producers over smallholders (Gómez Tovar et al. 2005); that standards developed in temperate climates, reflecting the desires of consumers in the Global North, present significant barriers to producers in places that are distinct from these contexts in regions of the Global South (González and Nigh 2005); that the cost of certification along with other financial hardships typically faced by smallholders in the

Global South mean that the benefits from the organic market are minimal (Jena et al. 2012); and that TPCs enhance the ability of consumers in the Global North to exert power over the livelihood and land use choices of producers in the Global South through the environmental governance of the commodity chain (Waroux and Lambin 2013). Additionally, Campbell (2005) finds that the case of organics in New Zealand, stringent standards make it difficult for producers to comply, arguing that Euro-centric standards which are then exported to distant locations, do little to overturn the already established political economy. Together these case studies are useful tools for analyzing the larger political economy of AAFNs as they effect producers in disparate regions producing a multitude of products, even outside the case of quinua in Bolivia. All of these cases suggest that while larger producers may benefit from the valorization of their goods and accrue rents on their higher value, smaller producers have a harder time adjusting to the rigorous standards.

This discussion has reviewed the way in which standards emanate from particular (rather than objective) socio-economic view points and represent particular class interests, which influence distant places and people through a system of private environmental governance, increasingly influenced by retailers. Because AAFNs rely on TPCs, they can be said to be part of the regulatory shift towards neoliberal modes of governance. This shift entails the fortification of the role of for-profit private actors in determining the management of distant natures. What is often missing from this literature, however, is a thoroughgoing exploration of the assumptions undergirding AAFNs: that organic is a conceptual category alongside but separate from conventional agriculture. This conceptual categorization—like the institutions that enforce it—is

important to theorize as it influences the governance of organic commodity chains and has profound effects on the producers who wish to become a part of them.

Organic as a conceptual category

> In fact, it is exactly those 'natural' metabolisms and transformations that become discursively, politically and economically mobilized and socially appropriated to produce environments that embody and reflect positions of social power. Put simply, gravity and photosynthesis are not socially produced, of course. However, their powers are socially mobilized to serve particular purposes, and the latter are invariably associated with strategies of achieving or maintaining particular positionalities of social power and express shifting geometries of social power (Swyngedouw & Heynen 2003: 902).

As Swyngedouw & Heynen (2003) state above, ecological processes are often politically and discursively mobilized in order to work towards some outcome, which may reproduce social asymmetries. This theoretical understanding helps to locate powerful interests in the propagation of ecological narratives. "Alternative" agri-food networks only make analytic sense when placed opposite conventional agriculture. Likewise, "organic" as a labeling strategy differentiates these products from their conventional counterparts in grocery stores in the Global North: organic bananas sit alongside conventional bananas; organic apples are stationed near (but separate from) conventional apples. The material differences in these products (one banana is produced using chemicals and the other is not) mean that they possess different exchange-values. As Guthman (2004) points out, organic labels add value, and allow retailers to reap increased rents, a promise of the organic market that encourages producers to enter. But a commodity labeled organic can only reap higher rents if placed alongside a similar commodity that is not presumed to be organic. This means that since organic only makes

sense alongside the ubiquity of conventional agriculture, organic as a conceptual category (as it is operationalized in grocery stores in the Global North) is specific to a time and place: a context in which input-driven, industrialized agriculture is the default mode of production.

The assumption that the default mode of production is conventional agriculture, and that organic production is categorically distinct from it, does two things. Firstly, it de-politicizes the organic industry. Practices such as chemical testing of organic production allow the industry to make claims to scientific objectivity about the alterity of organic production to conventional products while silencing the power-laden process of establishing these standards.

Secondly, since the organic industry is placed in a conceptual category distinct from conventional agriculture, the governance of this commodity chain also makes itself distinct from the governance of the conventional commodity chain. In this way, participants of this commodity chain are subjected to the most stringent, most extensive standards. The affinity of AAFNs for stringent regulation is, of course, to be desired in a capitalist system that externalizes costs of production onto society. However, the logic of AAFNs, the particular point of view from which they emanate, and the fact that their governance comes not from producers but instead from retailers interested in reaping the benefits of added value together means that AAFNs only make economic sense if they are placed *alongside* not *instead of* conventional agriculture. An organic banana can only reap higher rents if placed *alongside* or *in relation to* a conventional banana. Therefore, AAFNs can only reproduce themselves if their governance maintains alterity to the governance of conventional agriculture. In this way, AAFNs rely on the continued

existence of conventional agriculture because it is only this ideological distance that makes them economically profitable. In this way, organic serves not as a challenge to the dominant food regime, but rather as a way to ensure established patterns of capital accumulation, even while the contradictions of industrial agriculture become more apparent (Campbell 2009). These points will resurface later in the empirical data, where it is discussed that smallholders are subjected to the most stringent, most extensive regulations of production, yet these expectations remain niche rather universal in order to maintain established patterns of capital accumulation.

This understanding of AAFNs is theoretically grounded in Harriet Friedmann's (2005) food regime theory, which was laid out in the introduction, but will be reviewed with more specificity in what follows. Applying food regime theory to 21st century issues, Friedmann (2005) describes the corporate-environmental regime, which allows for renewed accumulation of capital under new relations between farmers, workers, corporations, and the state after a period of mercantile-industrial food regime. Friedmann (2005: 250) states that the previous food regime was based primarily on liberal trade agreements and large-scale industrial agriculture: "In the South, the mercantile-industrial food regime had brought the Green Revolution and industrial agriculture. It simplified agro-ecosystems to increase production of basic food staples, such as rice in Asia and potatoes in the Andes. It marginalized rural communities based on mixed farming cultures and threatened loss of both indigenous cultivars and knowledge." This regime, which elsewhere authors describe as undifferentiated, place-less, standardized agriculture on mass scales, placed practitioners of small-scale agriculture, especially that performed by indigenous people on a subsistence basis, in a particular social position as receivers of

development: to be modernized and made to incorporate fertilizers, pesticides, and engage in the production of cash commodities. Productivist agriculture, exemplified by large scale production of staple-based export foods, was the reigning paradigm. It was only until the inherent contradictions of this regime were pointed out by various actors that these contradictions began to be named, which Friedmann argue can be attributed to disparate works such as Rachel Carson's *Silent Spring* and the 2001 World Social Forum. As Guthman (2004) highlights, these contradictions were also named in the organic movements of the 1960s and '70s in the US. Indeed, these rejections of industrial agriculture manifest in any number of social movements, including *La Via Campesina* and the MST of Brazil (Friedmann 2005). In another vein, radical social movements and back-to-the-landers are not the only ones that name the contradictions in the industrial food regime. Indeed, almost every article concerned with AAFNs points to the origins of alternative networks as a shift in consumer tastes away from industrial food due to mistrust in either federal regulations, food safety, or just a general shift towards quality food instead of undifferentiated processed food: all evidence that consumers, too, noticed and viscerally experienced the environmental and social costs of the industrial food system.

The conceptual distance placed between conventional and organic agriculture, therefore, is not reflected in the lived realities of the social relations of production, which play out on a landscape already characterized by asymmetrical power relations. In this vein, Julie Guthman's work (2004) shows that in reality, the lines between conventional agriculture and the organic industry are quite blurry as industry possesses an inflated amount of power to influence the definitions and regulation of organic, actually allowing

for conventional interests to enter the organic industry. This assessment bolsters Friedmann's food regime theory in that industry has managed to internalize the demands of social movements while maintaining established patterns of capital accumulation. Guthman's (2004) monograph shows that particular aspects of organic farming that were important to social movements were left out of definitions of organic in order to maintain standards that are easy to inspect, regulate, and standardize, particularly in the form of a prohibitive list of input-oriented standards. Guthmn's analysis of USDA organic standards is important insofar as the standards not only have jurisdiction over agriculture in the US—they also apply to imports. This means that producers outside the US hoping to tap into the profitable US market have to uphold USDA regulations. In this way, the concerns of industry, encoded in organic standards, are exported to distant people and places through the complex web of TPC (Friedmann & McNair 2009). While conventional and organic are neatly (and necessarily) separated on grocery store shelves, the regulations under which organic is governed make it such that the true conditions of production are not so distinct.

This point has been taken up and disputed by many in the literature, contributing to the conventionalization thesis, first formulated by Buck et al. (1997). While hosting very similar ideas to those in this thesis, I avoid addressing conventionalization directly due to the geographic and temporal peculiarities of this case. First, the organic market for quinua is not a subset of a larger conventional market for quinua. Therefore the argument that conventional interests gradually co-opt the organic sector are moot here. And in fact, I hope to distance this analysis from those underlying assumptions. The second reason for not seeing a clear link between this thesis and the conventionalization debates is that

quinua producers are entering a market in which the standards have already been conventionalized. Temporally, this case is distinct from the debates there. However, it should be noted that the work of Buck et al. (1997) and Guthman (2004) are extremely useful in this thesis, in that they show the ways in which the formation of standards is a politically messy process, with powerful actors influencing the outcome. Once established, these standards are then exported around the world as producers comply with them. Therefore, rather than the formation of these standards, the object of analysis of this thesis is the ways in which the governance of already-established standards creates exclusions.

"Organic," therefore, is anything but a natural analytical category, and instead these market mechanisms are power-laden and constructed through various social, cultural, and economic relations. And in fact, using food regime theory, the very presence of an organic network points simultaneously to the inherent contradictions of the industrial food regime, and also to the efforts of capitalists to compromise, selectively meet demands, and ensure future capital accumulation. In bringing to the fore the situated-ness of organic as an conceptual category, and in locating the institutions through which this concept is mobilized (TPCs) as part of neoliberal shift to private environmental governance, I now turn to the ways in which they confront producers in Bolivia, who live and labor in quite different socio-economic contexts.

The case of quinua in Bolivia

Leafing through a 100-page document in the small library of an NGO in a provincial city in Bolivia, I was struck by the detailed instructions of how to grow quinua

organically. Small diagrams of the life cycles of various kinds of worms and moths, including when they consume the grain, were scattered across the pages. There were also several mentions about what *not* to do, including using chemicals. Many of the books gave several examples about which bio-insecticides were in compliance with the norms set by various TPCs: products such as Entras, which come in a small plastic case and host millions of tiny organisms that are lethal to bugs but not plants. Among these documents were also intimidatingly lengthy books on the process to be certified organic as a quinua producer. It seemed these books came in an array of versions: the full 100-page document that included detailed chapters on the necessary steps in order to fulfill certification requirements or the more simplified version equipped with cartoons and large lettering.

Turning these pages, I could not help but wonder to whom these documents were aimed. Certainly communities were versed on growing quinua organically: quinua had, after all, been a crop that only twenty years ago was only grown only as a subsistence crop in rural indigenous communities. As such, pamphlets and books about how to grow quinua organically seemed moot and technical documents regarding certification seemed impractical.

In the small library in Bolivia, I was unaware that a complicated web of certification schemes at private, public, and international levels was at work in forming the norms that I was reading. At face value, it was easy to see that the bio-insecticides prominently displayed on pamphlet pages were quite different than ecological knowledge systems that had been described to me before as traditional. These contradictions that seemed obvious to me in the library that day fueled the kinds of questions I asked in interviews, and result in this chapter.

In what follows, the first section addresses the concerns raised in the TPC literature review, briefly outlining the *complejo de la quinua organica,* showing that neoliberal shifts in environmental governance are evident in the case of quinua in Bolivia. The next section shows the ways that this *complejo* creates a knowledge gap, by mandating proficiency in organic standards—knowledge of which is not universally accessible. In this process, technicians then become experts in quinua production, changing the centers of knowledge for growing quinua and how it is disseminated. The third section builds on this by showing the ways that "organic" gets translated by TPC—in tandem with pressures from the market—work to change socio-nature metabolisms and create class differentiation among producers. As capitalism produces new natures, only some producers have access to the more effective, but more expensive bio-insecticides. These differentiations provide opportunities for some, who enter the more profitable international market, and present barriers for others. In alignment with a few of the case studies presented in earlier sections that found that organic certification proves to present barriers to smallholder producers rather than provide opportunities, these findings show that alternative networks and the ways that these commodity chains are governed are certainly ideologically distinct from conventional agriculture, but do not promise radically alternative outcomes, themes that will be explored in the fourth and final section of this chapter.

El Complejo de la Quinua Organica

I later learned from Pedro, the technician at FAUTAPO, that there are two main international certifiers of quinua: BioLatina and Bolicert. Each of these certifiers is accredited by the USDA-NOP (in addition to its equivalent in EU, Japan, and Canada), which means that in order to become certified, producers must comply directly with the norms that the USDA has defined for organic production. These norms, the origins described thoroughly by Guthman (2004), are explicitly exported from the contexts in which they were formed to disparate places and people in the form of TPC. BioLatina, a private company and conglomerate of four smaller certifiers, hosts their standards on their website, where the document of "Basic Rules for Organic Agriculture of BioLatina" can be found. In addition, the website provides documents discussing the differences between USDA-NOP certification and certification under EU norms.

In its most basic form, the *complejo de quinua orgánica* consists of empresas, third party certifiers and producers. The management of organic quinua production is based on an "internal system of control" called SIC (*Sistema Interno de Control*) (Aroni et al. 2009), which means that while actors at local empresas certify producers, ultimately these empresas need to send samples of quinua to a lab overseas (Germany was often cited as the destination for quinua samples). SIC helps to harmonize standards when empresas need to communicate with outside TPCs that act at a distance.

The actual process of certification, discussed in more detail below, is highly variable depending on the circumstances of the individual plot. Likewise, the cost of certification can vary widely as a function of local conditions, but mainly depends on

location of the plot, number of inspections required, distance necessary for the certifier to travel, and complexity of the transition to organic production. When producers seek certification, they also need to be aware which certification is accredited to which markets. For example, some TPCs such as Ecocert (a French TPC) are only accredited by the EU, whereas BoliCert is only accredited by the US. If producers hope to gain access to both the US and EU markets, they have to pay for both certifications separately.

Given this landscape, FAUTAPO, the Bolivian government, and a few empresas aid some producers in the provision of equipment and the cost of certification.[1] To acquire access to this aid, producers organize in associations: in the department of Oruro, there are 40 quinua producing organizations and in Potosí there are 38, these alongside the largest associations of producers in the form of the quinua cooperatives (Aroni et al. 2009). Aroni et al. stress the importance of producers' organizations in accessing appropriate information and supplies for certification, and in navigating the transnational commodity chain for organic quinua.

New Centers of Knowledge

As the socio-nature metabolism associated with quinua production changes (the focus of Chapter Two), new ecological knowledge is necessary to meet a landscape

[1] More on the state's role in supporting producers, forming standards, and facilitating organic production can be found in Chapter Four when I review Law 3525 and the Policy and National Strategy for Quinua. However, as I note elsewhere, my analysis of these is limited to the letter of the law, and further fieldwork would be necessary to unpack the state's role in overcoming some of the affects of private regulation spelled out in this chapter.

produced by capital. Though the physical changes to the altiplano simultaneously occur as quiñeros seek to join the organic international market. Joining this market demands compliance with a litany of norms and also requires careful attention to documents that define organic production.

Some of the most important aspects of these documents are those specifying which forms of pest control are permissible, including a mix of pheromones and bio-insecticides, which will be discussed later on. BioLatina's version of the document, however, is almost impossible to read without specialized technical knowledge and is so specific, riddled with chemical terminology, and lengthy (139 pages) that it becomes clear the reasons why producers would seek out relationships with empresas in order to gain the knowledge necessary to access the market.

One way in which producers do this is by forming associations and organizing tallers, much like the one that was described in the opening quote of this thesis. In this case, the crowd of about 25 quiñeros who gathered that day were eager to learn about certification and connect with an empresa in order to enter the international organic market for quinua. This was an important example of how access to the market is mediated by one's ability to connect with those who possess intimate knowledge of the certification norms. The taller was organized by Javier, a man in a baseball cap who, like many, was extremely generous with his time.[2] The group had assembled that day for two reasons: the first was to hear about organic certification from an ingeniero, a locally powerful man who was an organic certifier for the empresa nearby. The second reason was to celebrate the group's official formation as a quinua association. In a later

[2] Javier agreed that I could use his first name in my thesis.

interview with Javier, he explained that forming this association and registering with the government would allow them to apply for a small amount of public aid in order to purchase inputs. As I sat in the workshop and listened to the ingeniero describe in detail the process for certification, using a large graphic behind him to illustrate each step, it became apparent that those in the room needed the workshop in order to learn how to produce in such a way as to enter the international market for quinua. This market, I learned from Javier, is more dependable than the domestic markets. The returns for certified organic quinua on the international market are, of course, higher than selling it in the markets of the major cities—and without this certification, one can only sell to the local markets. Therefore the ways in which TPC affects farmers is through this information gap, where some producers rely on pamphlets and factory owners to collect knowledge about farming quinua organically in order to meet international certification standards.

A more individualized example of this is a neighbor that I had while I lived in Oruro, by the name of Jorge, who was also one of Paty's relatives.[3] She took me to the small store that he owned in the neighborhood, where he sold various small snacks and drinks. We also happened to speak to Jorge on a Sunday, which meant that he had a full stand of clothing for sale outside his store out on the street, along with dozens of other venders on market day. I had first met Jorge at the *taller,* where he and his wife spoke closely with the ingeniero about how to be certified organic. That day, I walked with them to their plot of land, where their quinua was that they had harvested. Their plot was located behind an old abandoned home, not out of ordinary in an abandoned town: its

[3] Jorge agreed that I could use his first name in my thesis.

only residents two sacks of harvested quinua. So in the market on Sunday, with Paty by my side, I asked Jorge about his quinua production. He said that he was becoming certified with the help of the ingeniero: "*Con la empresa estoy trabajando*," he said, "I am working with the empresa." He offered that this was what he relied on for technical advice about how to produce organically using bio-insecticides and how to become certified; however, to grow quinua, "*Es mucho sacrificio—va y venir—pero despues, se vende,"* he admits, "It's a lot of sacrifice—to go and to come—but after, it is sold." Here, he adds that driving back and forth to the small plot that we had visited a few weeks ago—about a 20 minute commute from Oruro—is a burden. But the returns on selling organic quinua to the empresa seem, at least for now, worth it.

This example is an important illustration of the profound changes in the production of quinua that have occurred with its entry into the international market. Here is a success story—someone who has managed to overcome the financial and bureaucratic barriers to enter the organic market—someone who commutes to a plot of land 20 minutes outside the city to produce quinua, acquiring technical knowledge to do so from an empresa. This kind of relationship appears much different than communal land practices performed under traditional knowledge systems, yet nonetheless becomes a successful strategy for accessing international markets.

On the other end of this phenomena are those who do the certifying. Those who become experts of organic quinua production are most often agronomists, technicians, or licensed certifiers, who instruct producers how to grow quinua in compliance with the norms of certification. The terms of this relationship are well defined in a statement from BioLatina's website:

> The change from a traditional to an ecological agriculture is a multi-year process. For this reason, a gradual sequence must be programmed per producer, to verify year by year, significant progress in the Agroecological proposal. Thus, each year, the technical advisors and those in charge of the Organization must prepare an annual conversion or production plan together with each producer, which must be based on the activities necessary to comply with the certification. (taken from the BioLatina website on 2/12/17, translated by author).

The transition from traditional to ecological agriculture, then, demands detailed documentation on the part of the producer, who drafts a plan with an expert, and is certified after inspections of her or his compliance with the plan. This producer is held accountable to all that the long list of standards prescribes, and cannot enter the market without compliance.

The dynamics of this process speak to the concerns of those who form these standards—retailers, consumers, private institutions, the USDA. The stringent, detailed nature of these standards purport themselves to be answers to the environmental consequences of conventional agriculture. Perhaps in a context where conventional agriculture dominates the landscape, the exhaustive list of norms would work towards addressing the inherent contradictions of industrial agriculture, and internalize the normal production of externalities and environmental pollution. In Bolivia, however, the governance of these standards shifts knowledge to new centers—places where technicians become experts due to their ability to access, interpret, and enforce these documents—having real effect on who is able to foster those kinds of relationships and subsequently, what their production process looks like. And so instead of "*re*-embedding" agriculture back into ecological processes, as is the promise of AAFNs, the integration of quinua in international organic markets constitutes a shift in the geography of knowledge production of quinua growing away from the hillsides of indigenous campesino communities to private firms that act as the gatekeepers of the more profitable

market—the environmental and social tensions that come along with this shift are discussed in the next section.

Lastly, as has been stated in earlier sections, the ability of organic labeling to produce higher rents relies on the continued existence of a conventional market. To institute organic regulations over the entirety of the products lining grocery store shelves would be to acknowledge head-on the contradictions in the dominant regime, a move that would be disastrous to established regimes of capital accumulation. Recalling Friedmann's food regime theory, the organic industry is not antithetical to conventional agriculture, but rather, it is part of the food regime's effort to respond to the internal tensions of industrial agriculture made known through various social movements. Dominant actors stabilize the regime through compromises that maintain established patterns of capital accumulation. This can be seen through the governance of alternative commodity chains, which place the most stringent and at times prohibitive standards on smallholders. Those with the largest amount of regulations and accountability to "remain within ecological processes" are also those whose tendency to produce externalities from production are the lowest.[4] Yet even within an alternative network that seeks to hold producers to stringent codes of ecological "embeddedness," the relationship between capital and the environment are made evident, a theme to which I now turn.

[4] A parallel dynamic can be seen in issues of climate "adaptation" of peasants, where those whose lifestyles are objects of development projects are also those whose contributions to a changing climate are least (Watts 2015).

New forms of pest control

The ways organic gets translated by TPC, coupled with the pressures of meeting the demand of the market, changes the metabolism of quinua production in some places and for some people, as was described in detail in Chapter Two. This section looks first at how market incentives have changed the ecological knowledge necessary to produce quinua on a commercial scale (an issue that many political ecologists have taken up in other regions), but places this change in the context of the alternative network—one which seeks to "embed" production within ecological processes. Therefore, once I briefly review the realities of changing pest populations, I turn to the consequences of unreliable supplies of bio-insecticides—a condition of the market that creates an uneven ability to comply with certification norms.

The questions that I had begun to form in the small library of the NGO in Bolivia as I leafed through a technical document regarding certification and permissible pest control methods led me to interviewing Raul Saravia, a technician at the active NGO PROINPA, and the author of several of the pamphlets on growing quinua organically that I had found so fascinating. During our interview, I asked him for whom the pamphlets were directed, and he informed me that they were written for the technicians—the producers, he mentioned, liked the pictures and nothing more. One of the major themes of the interview with him was the need that Bolivian quiñeros had of new technology for growing quinua organically. I was as taken aback by this sentiment as I was the pamphlets. *New* knowledge in a place where there certainly is already tried and true knowledge for growing quinua? When I asked him what he meant by his statement, given

context, Saravia gave a three-fold answer: there are simply more bugs on the altiplano than there had been before; there is not enough labor in the rural areas to produce in the same way that they had been doing on a small, subsistence-based scale; and products certified organic for pest control are incredibly difficult to find, use, and afford. The first was taken up in detail in Chapter Two and will be discussed briefly below. The second will be taken up in this section as well, and the final theme will discussed in the final section of this chapter. Each of these contributes to the ways in which, through its integration into the international organic market, quinua is produced using different ecological knowledge—presenting challenges to producers when attempting to achieve certification.

In Chapter Two, the ways in which capitalism produces nature were shown—specifically in the issues of soil degradation and increased pest populations. This means that producers face serious risk of crop failure if they do not acquire the appropriate pest control. To avoid this, some producers have to resort to chemical pesticides. For instance, in an interview with Marcelina,[5] an indigenous woman who grew quinua on a communal plot of land, she informed me that they did use chemicals. In response to a follow up question, she put simply, "If I don't use it, there is no quinua. Worms eat everything. Everything is empty" (Interview with Marcelina 6/25/2016). Recalling the discussion in Chapter Two, a changing metabolism has produced new natures, and requires new techniques for pest control. A changing socio-nature with the integration of quinua into international organic markets was also a common theme in my interviews with a group of

[5] Marcelina agreed that I could use her first name in my thesis.

government workers from the MDRyT (Ministry of Rural Development and Land). Here they explain the ways in which pest control have changed as production has increased:

> But traditionally here, the production is organic, on the hillsides, where there are less pests. But with the introduction of the tractor, of the *sembradora*[6], fumigation, everything was mechanized. You can cultivate extensively: 10,000, 15,000 until 100,000 hectares of quinua. For this reason we are working with a very low price…So this we say is one of the factors that the producers are using pesticides.

Here a familiar story of mechanization, expansion of agricultural boundaries, extensive monocultivation resulting in reliance on pesticides and off-farm inputs is evident. This quote effectively captures one way in which socio-nature metabolism of quinua production has changed, and supports assertions made earlier in this thesis that pest populations are higher than they had been before. Additionally, this example underscores the idea that "re-embedding" comes from an already industrialized point of view—where industrial agriculture has dominated the landscape and agriculture needs to "return" to natural processes. In the case of quinua, however, it was not until the recent popularity of the crop in international markets that large-scale production made economic sense, and it was not until the popularity of organic quinua that the socio-nature metabolism changed.

The second reason for changes in ecological knowledge that Saravia pointed out was due to historic out-migration. This migration pattern from the rural southern altiplano to urban centers and other countries in South America left little labor in the countryside to perform the tedious tasks involved in traditional agricultural methods (Perez-Crespo 1991). To use 'traditional knowledge' not only means particular practices around pest control, but it also includes cultivation on the hillsides. However, while cultivation on the

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6 A sembradora is an attachment to tractors that is used to plant seeds.

hillsides would mainly be done using manual labor, quinua production on the plains is mostly facilitated by mechanized farming tools. To cultivate on the hillsides, Saravia informed me, would mandate enormous amounts of labor. And simply put, the manpower necessary to do so on the scale at which quinua is now being produced would not be possible. Therefore, as some communities transition to mechanized agriculture, and as urban entrepreneurs begin producing quinua on their abandoned family plots, necessarily the methods of pest control also shift. Therefore, integration in international markets in a longer economic and historical context has lead to a need for innovation in ecological knowledges.

The governance of the quinua commodity chain affects producers because the stringent norms shift centers of knowledge on quinua production to private empresas that channel the norms of TPCs, whose standards emanate from distant locations. Simultaneously, a changing socio-nature metabolism has increased pest populations, and in some circumstances, producers rely on pesticides to avoid crop failure. These realities, when played out over an already highly uneven socio-economic landscape, mean that some producers face barriers to enter the more profitable organic market and others do not—the main reason, as was stated in many interviews, is due to the unreliable supply of bio-insecticides.

Firstly, there are numerous problems with the products that are certified organic for pest control. As Julie Guthman (2004) notes in her study on organic farmers in California, the list for prohibited and allowable materials is constantly changing. Therefore, when I asked Saravia what most of the producers who sell to the international market do for pest control, he answered in the following way:

> They are using the products that we recommend. It appears to me that they are those that are in the market. There are other products that are restricted in the market for organic production. So this doesn't serve the [quinua] producers. Because for example there have been cases in which the producers are using some fortified fertilizers for pest control…some fortified products control pests as well, they, too, kill some pests. But it is not directed to pest control. But under organic production, bio-fertilizers cannot be used for pest control. So they mention it, but for this reason, for example, the certifiers do not accept it. They have to be products that are certified [slams fist on table] for the organic production. Like the case of "Entras," we have for certification.
> …So in the market, there are very little products to control pests. For this reason there are dificencies in pest control. If you go to the market here, and you go to look for the organic products, [and you ask] "Which thing can you offer me? What do you have for certification? What is certified?" They are not going to offer it to you, there is none. Possibly they will tell you "Entras," that has organic certification. But there isn't any. It would be good if you go where they sell the products, which products are for sale for organic production. You are going to see very little.

Here, we learn a few things from Saravia. The first is that most of the producers who are selling to the international market are using products like bio-insecticides: off-farm inputs that are easily certified by TPCs. Secondly, at times the list of products that are permissible is not clear to the producers: where bio-insecticides are allowable, bio-fertilizers are not. And thirdly, and perhaps most importantly, bio-fertilizers (and insect pheromones, another permissible product in organic certification) are not steadily available in the markets. Saravia explains that farmers need to search the market for products that are certified, and not always will they return successful. Furthermore, bio-insecticides are much more expensive than chemical insecticides because bio-insecticides and pheromones are imported from Europe. This was again verified by experts in the office of the MDRyT, who stated:

> **#1:** We have to search for the different strategies of pest control, including pheromones. PROINPA has introduced pheromones for pest control. But that depends on the technology because pheromones are not produced here
> **#2:** They are bought from outside [Bolivia]
> **#1:** PROINPA has brought from Belgium, from Holland[7]

[7] I use numbers to signify speakers here in lieu of names because in Chapter Four, I take a critical approach to the way this office framed certain phenomena.

Again the sentiment of the search for new technology can be seen vocalized here. The fact that the majority of quiñeros producing for international markets are unable to use local knowledge, and instead, depend on the latest (but unreliably available) technology in organic agriculture from Europe directly calls into question the idea that AAFNs work to re-embed agriculture into natural processes, and questions the alterity of AAFNs.

A more stringent market

With all of this in mind, this section considers how these processes play out on an already uneven socio-economic landscape: while certified organic pest controls can be difficult to obtain in the market and expensive, standards placed on producers are increasingly stringent—all of this in the presence of falling prices for quinua. This means farmers have less cash available to pay for organic certification. These barriers to enter the market effect producers in differing ways, and create differentiation in who can enter and who cannot.

Increased pest populations and unreliable/unaffordable certified organic pest control products together present serious risk to crop failure. To address this problem, some quiñeros put tiny amounts of chemical insecticides on their quinua, which put them at significant financial risk as quinua is subject to increasingly stringent laboratory testing. These themes were brought up in my discussion with the MDRyT. These workers, housed in the Oruro departmental branch of the national ministry were well versed in the difficulties felt by quiñeros:

> Yes, there are companies that are responsible for this work to certify organic production. They go to the countryside and they verify if the producer is complying with the norms, if they are applying chemicals…But this is not free because now all the exporters are performing the toxicity analysis…they take out a bit of quinua and they send it to the outside. Here in Bolivia, we still don't have a laboratory with which to have an analysis of the toxicity. So, if they detect traces of chemicals, they return it to you, and if it has traces of chemicals, you cannot export it…It's difficult, and it's costly (Interview with MDRyT, translation by author, 7/8/2016).

Here, the barriers to enter the international organic market are made clear. While the marketing benefits inherent in assuring consumers in the Global North that products are chemically-analyzed and certified-organic, these standards are out of touch with the realities and risks that producers face in a changing environment and unreliable local markets. These undemocratic, universally enforced, and unilateral standards create barriers to those who cannot purchase the more expensive, more difficult to obtain bio-insecticide.

The result is that private quinua exporting companies often prefer to deal with fewer, larger quinua producers who are well versed in international regulatory standards and able to provide a steady flow of uniform crops. This was also vocalized by Felix,[8] a quinua producer who lives in Oruro, and another attendee of the taller that was described at the beginning of this thesis. He informed me that he did not have a contract with an empresa, and only sold directly to the market in Oruro. When I asked him if he wanted to sell to an empresa, he replied:

> Well, we could, but we do not plant in quantities. If we maintained higher quantities, we could get a contract with an empresa. A certified empresa, *no vé*? But we grow too little [quinua] to maintain quantities for the certification" (Interview with Felix 7/6/2016).

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[8] Felix expressed that he preferred that I use his first name in my thesis. Although Felix from the central altiplano should not be confused with Abdon Félix, a producer from the southern altiplano whose interview I discuss in Chapter Four.

Because the cost of sending quinua to be tested in laboratories in Germany is enormous, empresas tend to only want to buy from a few, relatively larger producers who they know will test negatively for chemicals (Interview with an Ingeniero by author 7/14/2016): the result being that this creates a barrier for producers who do not produce in large enough quantities.

The latest development of chemical testing of quinua before it enters the international organic market has another affect in addition to incentivizing empresas to buy from fewer, larger producers. A comment from Saravia suggests that this move towards chemical analysis is something that puts a degree of stress on producers, who also face increasing problems with pests:

> Yes, the majority of producers are going to tell you that the production is organic. But recently—because the price in the market as you know since 2013, 2014 has risen to 2,000 bolivianos per quintal—they have begun to use these products [bio-insecticides] for the organic production, but they say, "we are putting a little—a few drops of chemicals" they say, in the production. And maybe this quantity wasn't detected via the methods of analysis that they had at the time. But now, the *empresas* that certify and the *empresas* that perform the analysis of all the chemicals in the grains, already they have methods that detect in minimal quantities. So, the producers this year are in a very worried state. They are asking, "What quantity? How is the analysis?" And they are personally interested in doing an analysis of their products themselves to see if the quantity of the chemicals that they used could be detected in their analysis (Interview with Saravia 7/8/2016).

These comments emphasize the precarious state of organic certification. While producers could risk losing their entire crops to insect infestation, they also face increasingly stringent standards that they cannot determine or inform. What is even more troubling, however, is that prices for quinua have fallen significantly since 2014. Given this, the price associated with being certified becomes more difficult to justify. In a brief conversation I had with one quinua producer who I met in market for quinua in Challapata, he said that he did produce organically. However, also included that: "I don't

have aid to pay for a certification. The prices are too low to buy a certification" (Interview with quiñero by author, 6/26/2016). Prohibitive costs of certification when prices are low acts as a serious barrier to some producers. While local markets plummet, international organic markets, while also relatively lower than previous prices, do not move so violently. Therefore, to benefit from a contract with an empresa that links producers to the international market becomes a way to safe guard against the volatility of the market—this economic assurance, as has been explained, is not equally available to all producers.

An illustrative example is the vacancy of the quinua market in Challapata. Save for a few people with whom I spoke that day, the market was empty of quinua. "The prices have fallen," people would repeat to me when I asked why no one was selling quinua at the time. "We are waiting." What they were waiting for, of course, was for prices to rise again. And because quinua stores well, there was not much risk of losing the yields; however, the delay in income, I would imagine, is less than preferable.

This phenomenon is not restricted to local markets, though it is exacerbated there. I also was able to secure a tour of the factory that the ingeniero works for. As we removed our facemasks and stood outside the factory for a chat, he admitted that the prices for organic quinua are not just. He also mentioned that because of this, the factory only tended to buy from a few producers who could produce in large quantities. With fewer producers, the empresa has to perform fewer chemical analyses. Analyses are costly and time consuming due to the fact that the empresa I toured has to send all of the quinua they test to a lab in Germany, where the TPC is located. The implication of this conversation is that the empresa is financially motivated *through* the governance of the

organic commodity chain to buy from larger producers—and since these are the quinñeros who managed to produce organically under the norms of certification, they are also those who were able to secure the appropriate methods of pest control.

But everyone feels the volatility of a market for a non-traditional agricultural good. With the prices falling the way they did after 2014, the ingeniero says, the market for organic quinua is not sustainable. To illustrate, he pointed to an enormous truck that workers were loading with sacks of raw quinua. Workers were diligently wrapping the inside of the truck in several layers of cellophane. Eventually the container would be taken off the truck and loaded directly onto a boat, the ingeniero informed me, and the cellophane was to protect the quinua from the humidity during its trip over the ocean to North America. But he also mentioned that the factory was capable of sending off four of these a month. I certainly believed it. The loud noises, numerous workers, multitude of mechanized stages, and floor to ceiling stores of giant bags of quinua were testament to the productive capacity of the factory. Yet for the last six months, they had only been sending out two containers every month. The factory was at half capacity due to falling prices. The ingeniero's explanation for this seemed to align with what many expressed at the market in the streets of Challapata: they were waiting for the prices to rise again.

At least for those who produce quinua outside of cooperatives, the information gap and the crash in prices mean that only a few partake in the lucrative international organic market. Expensive costs of certification, inputs, and increased risk all mean that there are barriers for most. The origins of organic certification, namely its starting point from an industrial, capitalist agricultural context, become obvious in the context of a place like Bolivia. The fact that a place that has always grown quinua organically now

has to abide by regulations and sanctioned types of pest control decided upon in the Global North shows that while certifiers depend on scientific analysis and bureaucratic documentation to prove quinua is organic, these standards are not in fact objective, but rather emanate from a particular geographic, political, and economic context. The mechanisms of the market (even an alternative one) mean that only some overcome the barriers to enter—creating differentiation. While those who produce large tracts of land get better prices, those who cannot afford certification and bio-insecticides have only to sell to the local markets where these is less demand.

Conclusion

The "alternative" in alternative food networks begs the question alternative to *what*? Perhaps when placed alongside conventional agriculture, small-scale production under a litany of regulations is a production process that will prioritize sustainable values such as on-farm inputs or year-round processes. On the other hand, when placed in a longer historical context, it is difficult to argue that the alternative network for organic quinua *replaces* agriculture back into ecological harmony—despite the stringent norms that producers meet.

This chapter has sought to problematize the duality of the conceptual categories of conventional and organic by first presenting a literature review that shows that AAFNs are very much a part of the neoliberal shift towards governance—making room for the interests of private actors in the regulation of distant natures. Employing food regime theory, I bring a critical perspective to the AAFN literature. This theoretical frame helps

situate the governance of the organic commodity chain not as a countervailing trend to globalization, but rather as very much a part of neoliberal regulatory shifts. This chapter also discussed that organic products, as they line grocery store shelves in the Global North, rely on the continued existence of conventional products. The governance of these commodity chains in all their strict regulation is only profitable while held in contrast to conventional agriculture. I argue that the governance of TPCs and their geographic locus of power in key interests in the Global North does little to disturb the North-South political economy. Understanding the organic commodity chain in this way politicizes the fact that smallholder producers face the largest amount of regulation, and fulfill the most commitments to ecologically harmonious agriculture.

These political economic relations then play out on a landscape already characterized by inequality as knowledge about certification is not universally accessible, bio-insecticides are not reliably or cheaply available, pests are at an all-time high, and standards are increasingly stringent. These together create differentiation among producers. Those who become part of the international organic market are those who connect with empresas and implement technical knowledge from an ingeniero, purchase certification, and obtain bio-insecticides. These producers become well versed in the library of pamphlets on bugs and applying bio-cides, and produce in large enough quantities to meet the demand of empresas.

Within this conversation, it is important also to mention that economic opportunities for people are certainly not deleterious for everyone everywhere—indeed, quinua has lifted many people up out of poverty. Instead, this thesis focuses on the dynamics of capitalism (i.e. development through the market) in that while many reap the

benefits of a lucrative international market, the market tends not to have equalizing results. To avoid generalizing, it should be said that the quinua boom has provided many with means to new incomes that they had not had before. Although, the volatility of the market and the way it is structured means that busts follow booms, and there is unevenness of who succeeds and who does not.

Chapter Four
Contestation

Introduction

From my conversations with an agronomist in Bolivia, Ronald,[1] it became clear that those who research quinua in Bolivia have some *preocupaciónes,* he told me, worries. Some of those worries had to do with the decreasing fertility of the soils. Another worry was the fact that other countries as disparate as Italy, France, India, and the US had begun producing quinua. This was often explained as the reason for the price crash for quinua after 2014. After other actors began producing quinua, the market was flooded and supply exceeded demand.

During the course of our conversation, Ronald slid a few articles over the desk to me. One was provocatively titled, "Bolivia falls to second place in in the sale of quinua to the US." The 2016 La Razón article detailed recent and worrisome phenomena for Bolivians. The article forewarned that Peru, Bolivia's comparatively more developed Andean neighbor, had surpassed Bolivia as the largest exporter of quinua in 2014, and that as a response, the government together with NGOs and producer organizations were working to address this issue. These disparate social actors worked to do so by attempting to create a Denomination of Origin (DO) that would be recognized on the international

[1] Ronald agreed for me to use his first name in this thesis.

level (Quispe 2016). The findings in this article are supported by the FAO's statistics, which shows that after 2013, Peru's quinua exports exceed Bolivia's.

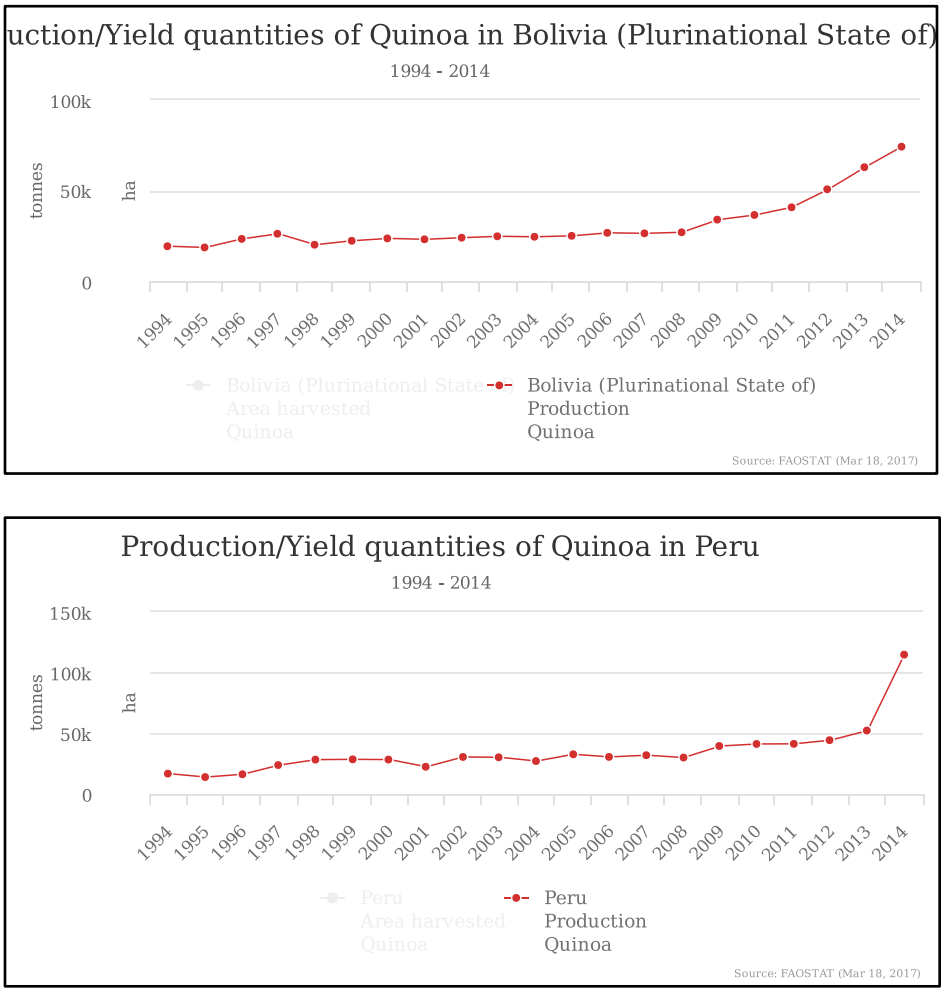

Figure 4.1: The charts above, taken from the FAOSTAT website, show that in 2014, Bolivian production was 75,000 tons while Peruvian production exceeded 100,000 tons.

The explanation that Ronald gave me about Peru's latest boom in production was a sentiment that was reiterated by many with whom I spoke, including the ingeniero, producers, technicians, and patrons of quinua stands whom I casually conversed with in a market in Oruro. Ronald, like so many others, described Peru as more developed—there,

they grow quinua on enormous tracts of land, process it in efficiently churning factories, and importantly, they grow using "*un montón de pesticidas*," "a ton of pesticides."[2]

Describing quinua production in Peru this way, I later learned, was also a way to distinguish the quinua production in Bolivia. By *contrasting* production in Peru and Bolivia, many individuals communicated something that was unique to Bolivia. Talk of mass-produced quinua doused in chemicals from Peru was almost always followed by descriptions of the quinua in Bolivia as "*más natural*," "more natural." In Bolivia, unlike Peru, these actors would tell me, the production was more in-tune with the ecological cycles of the altiplano. And importantly, this fact *adds* values to quinua that comes from Bolivia.[3]

The fear, anxiety, and vexation that accompanies the news of the proliferation of quinua production beyond the Andes made it clear that actors in Bolivia understand quinua to be uniquely Andean—a grain that belongs to *orginario* people and not to scientists in the US who attempt to bio-engineer the crop to grow in places other than the highland environment to which it has been adapted.[4] Additionally, the averse response to the Peruvian production of quinua—a place that, like Bolivia, has grown quinua since

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[2] I keep this phrase in Spanish here to emphasize the frequency with which it was said by those with whom I spoke in Bolivia.

[3] At this point in time, data from Peru about what percentage of its quinua exports are organic are unavailable. Therefore, it is unclear to what extent these anecdotes reflect reality. Nonetheless, I understand these comparisons to be productive insofar as they contribute to a narrative about the uniqueness of the quinua grown in Bolivia. This, we shall see, is productive for constructing a trade monopoly on quinua exports to the US and Europe in the form of a Denomination of Origin (DO).

[4] This refers to the often-cited incidence in 1997 in which Colorado State University was forced to surrender its US patent for 'Apelawa quinoa,' considered by those who pushed back against the patenting of this variety, such as ANAPQUI (a cooperative of Bolivian quinua producers), as "…a great victory for the Andes and a wonderful day for Andean farmers" (RAFI 1998: 1).

before the Incas (Reinoso 2016)—shows that Bolivians also associate quinua with a *I* of production. It is on these terms that some producers, government officials, and even state law attach quinua to a unique identity and contest the terms on which the international trade of quinua operates. Imporantly, however, the kind of production that these actors have in mind when they contrast Bolivian production with Peruvian production is tied to a specific region of the altiplano. In the ways that Bolivian production is *mas natural*, it is also in large part due to the unique ecology, traditional methods, and indigenous knowledge utilized in the southern altiplano. As such, there are efforts to create a Denomination of Origin (DO) are for Quinua Real—the highest value quinua and one that only grows in this region.[5]

In this way, during my fieldwork, I noticed that as actors articulated the uniqueness of the environment and production methods typical of the southern altiplano, they worked to construct *terroir*, a concept that will be defined and reviewed later in the chapter. Constructing terroir on the basis of ecology, certain methods, and even certain producers, works to construct quinua that comes from this region and by these producers as more authentic, not only in relation to quinua produced outside Bolivia, but also to other sub-regions on the altiplano. Insofar as constructing terroir seeks to ground quinua in a particular place and people, these efforts actually serve as contestations of the commodity chain described in Chaper Three. The commodity chain for quinua, therefore, can increasingly be thought of as commodity chain*s* as some actors in Bolivia hope to

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[5] It should be noted, then, that while there are efforts by the state to lift up quinua as a symbol of national identity, what the state really has in mind is to lift up the quinua grown in one specific area as a symbol of national identity. This can be seen as an effort in state building as an outward-looking MAS hopes to convey an "ecological Boliva" to the international audience. Achieving this international legal recognition, however, would also entail excluding producers outside the designated area.

reinvent the commodity as a platform for articulating Bolivian identity to the international community.

In this context, this chapter shows that the commodity chain covered in Chapter Three is actually contested by some actors on the basis of labor and identity. Producers, state actors, and the state itself differentiate quinua produced in the southern altiplano as being higher in value due to the fact that it is produced under traditional methods, using traditional knowledge, and grown organically without the use of heavy machinery, pesticides, or in large quantities. Endeavors to form a DO for quinua can be understood as efforts to self-determine the environmental governance of the altiplano, and to include notions of identity and ethnicity in this governance. When held up alongside the commodity chain discussed in Chapter Three, this commodity chain calls attention to the fact that organic, as it is governed by TPCs and actors in the Global North, comes from a particular socio-economic point of view, and represents particular class interests.

In order to show this, this chapter first presents a brief literature review of terroir, showing that the popularity of denomination of origin (DO) agricultural goods comes along with a wider shift in cultural value of food. This chapter then moves on to review the findings of anthropologist Andrew Ofstehage (2011; 2012), which help illuminate the way that producers in the Lipez region of the southern altiplano construct their own terroir, and contest the commodity chain covered in Chapter Three as undermining their *authentic* quinua—quinua that is grown using traditional methods. By using this terminology, I am not arguing that any one quinua is authentic or not. Rather, I put forward these framings of authenticity to illustrate the way actors utilize this discourse in order to call into being and push back against the commodity chain described in Chapter

Three. These constructions of authenticity, which actors hope to use as a stepping stone towards international legal trade protection, also speaks to changes in the global economy, where small scale agriculture done by indigenous campesinos may circulate in the economy as a luxury commodity.

My own interviews with state actors also channeled the efforts of these producers. As such, the next section of this chapter presents my interviews with technicians and government workers, showing the way that they too construct value as being connected to both the ecology of the southern altiplano and the particular production methods involved there. These sentiments are also written into state legislature in Law 3525 and the National Strategy and Policy for Quinua, in which local knowledge and indigenous agricultural practices are protected and, at least in the letter of the law, supported. These efforts, on the grounds that this type of production should be protected as part of a Bolivian identity, are significant to point out in the longer historical relationship between the state and the indigenous peasantry. If these various actors are successful in re-inventing Bolivian indigenous campesinos into artisans recognized on the international level, these producers stand to benefit as they have greater say in the standards that govern their labor. Additionally, the DO will enforce a monopoly that allows these producers a greater share of the international market for quinua. However these efforts, which seek to differentiate quinua not only based on the fact that it is organic, but also that it holds cultural, historical, ecological, even mythological meaning in the southern altiplano, come with some tensions. These tensions problematize this alternative chain as it relies on a homogenous construction of particular cultural and material practices that necessarily excludes others in different parts of the altiplano, and may not even practiced

by everyone in the region. This section also considers concerns raised by other studies of DO or GI (Geographic Indication)[6] efforts, which question this market practice's ability to bring about all that it promises (social equity, ecological stability).

In what follows, I hope to show the ways that quiñeros and the Bolivian state work to differentiate quinua based on claims to identity. This chapter will highlight the ways that this effort "from below" attempts to forge an *alternative* alternative commodity chain (Ofstehage 2011) rooted in the concepts of the labor practices, identity, and cosmology of indigenous campesinos in the southern altiplano, an effort which contests a commodity chain that entrenches an already established North-South political economy. This effort shows that changing notions of value, which include concepts like organic and smallholder production, are also increasingly pushed to include the identity and cultural values of those producers—who, along with others, hope to influence the terms on which the products of their labor circulate through the economy. Putting this in terms of regime theory, these efforts both call into being the contradictions of the industrial food regime (by nature of their being organic, small scale, rooted in place), but also push against the class compromise of the emerging corporate-environmental regime. They do so by rejecting the organic markets that displace indigenous campesino knowledge in the production of quinua, and rely on foreign TPCs. All of this together means that the commodity chains for quinua can be understood as sites of struggle.

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[6] DO (Denomination of Origin) and GI (Geographic Indication) are similar and related phenomena, and will be used interchangeably in what follows; they will be considered separately where appropriate.

Terroir

Denomination of Origin (DO) is a protection granted by a nation-state to a particular ecological and cultural bio-region; when this protection is internationally recognized, it becomes a Geographic Indication (GI) (Friedmann & McNair 2009). Many scholars of alternative food networks argue that GIs signify a paradigm shift in agricultural production away from standardized, mass produced and place-less food. On the international level, GIs are governed by the World Intellectual Property Organization (WIPO), a self-funding agency of the United Nations. According to WIPO, a geographical indication is:

> …a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin. In order to function as a GI, a sign must identify a product as originating in a given place. In addition, the qualities, characteristics or reputation of the product should be essentially due to the place of origin. Since the qualities depend on the geographical place of production, there is a clear link between the product and its original place of production (WIPO website, accessed 3/8/2017).

GIs are a special kind of intellectual property that relate to a specific territory. They are not owned by individuals or corporations, but rather, are established by and remain property of governments, granted international legal jurisdiction by WIPO (Bowen and Zapata 2009). The fact that GIs are by definition rooted in a particular place means they stand in contrast to "anonymous" mass-production, and contest the trends of globalization by adding stoppages to an otherwise "frictionless economy where neither space nor time impedes the free flow of goods, labor, and capital" (Barham 2003: 129). When defined in this way, GIs are framed as a "counter-trend" (Gade 2004) or even as resistance to (Bowen & Zapata 2009) globalization and its homogenizing march towards a mass trade of place-less products.

Casting doubt on GI's ability to stand as resistance to globalized food, however, Tregear (2003) points out that GI foods, as they typically are produced under special circumstances in order to achieve their high-quality and artisanal status, can only make economic sense as they stand next to industrial food items and are differentiated from them. Insights from the economic literature confirm this thesis, as firms become competitive in the market either through price or value creation: while undifferentiated, mass produced products remain competitive through extremely low prices, differentiated products add value (and sacrifice quantity) through fulfilling "personalized demand" (Cañada & Vázquez 2005: 475). This point echoes earlier arguments made in Chapter Three, that differentiation (at work in organic and GI products) cannot possibly replace the industrial food system, but rather fundamentally depends on its continuation as it is only through differentiation from those products that alternative networks maintain economic viability. This view, then, posses a different perspective on GIs than those that claim GIs are a form of resistance to globalization.

This view also undergirds a food regimes theory approach to understanding GIs as part of an emerging new regime. This regime replaces the former "Food from Nowhere," regime, as McMichel (2009) describes the mass production of place-less food under the neoliberal era. In order to understand GIs as part of an emerging regime, many scholars consider their rising popularity in relation to a wider shift in the symbolic value of food. In keeping with food regime theory, this discursive shift away from mass produced food towards food that is rooted in place is also part of a class project, and is a historical process. For example, the post-WWII Fordist regime of mass production informed particular cultural values about food (Friedmann 2005). Tregear (2003) describes the way

cultural constructs of food are tied to both the historical specificity of the Fordist period, and the way these constructs are tied to a performance of class:

> …in previous eras, foods symbolic of rusticity and artisanship (e.g. breads made from dark grains like rye) were accorded low status, whereas for the bulk of the population, refined, processed and convenience foods were prized for the liberation they represented from the tedious and often unpleasant labor entailed in making typical products (Tregear 2003: 98)

Here, Tregear specifically refers to Europe in the 1950s and '60s, a time during which high-value was associated with processed food, while low-income demographics unable to afford novel and more expensive processed food continued to make it by hand. While Fordist food is associated with "standardization, mechanization, intensification, and the application of new discoveries…" (Tregear 2003: 96), more recent decades show signs of a reverse trend among high-income eaters: today the performance of calss very much becomes about "food symbolic of rusticity and artisanship" (Tregear 2003: 98), and the higher prices of these products reflect this as high-income consumer demand shifts away from heavily processed products to artisanal, handcrafted food.

To further describe what is entailed in these changing notions of food, Campbell (2009) emphasizes the importance of cultural meaning assigned to food in dismantling or disturbing established food regimes:

> Just as the 'Food from Nowhere' Regime is concentrated in the cheaper end of the food market and rooted within a set of cultural framings that emphasize cheapness, convenience, attractive transformation through processing and rendering invisible the origins of food products, affluent consumers in Western societies are attaching cultural status to foods which they perceive to be opposite; that is, attractively socially- and ecologically-embedded (Campbell 2009: 313).

Campbell's insights here emphasize that cultural framings (i.e. valuable food is mass produced or valuable food is hand-made) are important in food regime theory, where these changing notions of value signal regime change.

Wrapped up in the success of these special foods is the notion of terroir. This concept, without a clear English translation, comes from French philosophers to describe the uniqueness of a place, both the specific climatic conditions *and* the methods of production, ecological knowledge, and tools that go into producing whatever unique food or beverage comes from that geographic location. Bowen & Zapata remark that "…although the French word '*terroir*' is literally translated as 'terrain, soil, land, ground, or earth,' the cultural concept of *terroir,* as it relates to food and wine, is understood as the product of *interacting* natural and human factors. The deeply rooted traditions and cultural practices that have contributed to the development and evolution of particular foods and flavors are thus also viewed as central to *terroir*" (2009: 109 emphasis in original). Terroir, then, is not only constituted by the natural characteristics of a unique micro-climate, but also involves the way humans interact (and have interacted over a long period of time) with this climate to produce special products culturally important to both the sites of production and consumption. Scholars say that terroir is associated with, "…small-scale artisan-based agrarian production, organized on a collective basis, with products combining local raw materials with inherited customs of production" (Tregear 2003: 99). All of these descriptions of unique sites of production, as they are popularized in high value food circles, contribute to a notable change in the global trade of agricultural goods away from uniformly privileging agricultural landscapes dominated by modernization.

Importantly, the shift in the symbolic value of food to include notions of terroir also has discursive and material effects for smallholders. Discursively, in the rising popularity of DOs and GIs (and other commodity chains such as fair trade), practitioners

of small scale agriculture are reframed from "peasant" to "artisan." The material consequence of this is that select smallholders gain a foothold in the global market that some say was on pace to eliminate their livelihoods completely (such as Bernstein 2006).

Yet this discursive transformation from peasant to artisan is an *uneven* process, just as terroir has an uneven geography. While respect for traditional, small scale, and specialty foods might be familiar in French wine country or Italian cheese farms, certainly the same kind of valorization has not been historically allocated to smallholder farmers in the Global South (Gupta 1998; Escobar 1995; Mitchell 1991).[7] The ideological shift about small scale agriculture seemed to take place comfortably in Europe, where small scale agricultural landscapes began to be appreciated by European consumers as soon as the 1980s (Tregear 2003), yet their counterparts in South America at the time were still peasants subjected to modernization projects. With significantly less GIs registered by WIPO in the Global South, in addition to the prevalence of ongoing land grabbing and massive dispossessions, these uneven geographies prompt questions about the relative difficulty that smallholder producers of crops important to local cultures in the Global South have in gaining international legal status. Additionally, in the context of the political economy of consumption and production in alternative food networks, smallholders in the Global South who produce specialty items with local significance for wealthy consumers in the Global North may not be able to transfer all that encompasses terroir to distant consumers (a geographic barrier much smaller in European contexts, where smallholders make products that are culturally familiar to those who will consume

[7] A notable exception being tequila in Mexico, though even this commodity shows troubling trends (see Bowen & Zapata 2009).

them).[8] The efforts to communicate to distant consumers the unique aspects of Quinua Real, and to gain official legal rights over quinua based on claims to authenticity is what this chapter aims to reflect on. The struggle to do so, even while profitable quinua is increasingly produced in other parts of the world (and by larger landholders in Bolivia who abide by and benefit from international certification norms), politicizes GIs as a counter-trend to globalization by calling attention to the difficulty of gaining international legal recognition from a position in the Global South—an agricultural landscape with a distinct history and relationship to the global market than Europe. A critical perspective on GIs leads to important questions about the persistence of colonial geographies that position smallholder farmers in Europe as artisans and their counterparts in the Global South as "receivers of development." This not so distant history seemingly continues to play out as some actors in Bolivia seek to reformulate the terms on which Quinua Real circulates through the economy. To avoid apolitical notions of terroir, and to better understand the struggle that Bolivians might experience in the international arena in attaining a GI, it is important to foreground these relations, which contribute to the geographically uneven discursive shift from "peasant" to "artisan."

With these concerns addressed, I now turn to the ways in which actors in Bolivia channel the concept of terroir[9] in order to construct Quinua Real as unique to the southern altiplano—both a factor of ecology and production methods—working to forge a link

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[8] Similar critiques of the political economic spatial distribution of consumption and production have been made against Fair Trade (see Fridell 2007; Johannessen & Wilhite 2010; Goodman 2004).

[9] It is unsure how consciously these actors "construct *terroir*," or even if they would frame their efforts in this way, but I use this phrase in order to describe the language/act of linking quinua to Bolivian identity, a particular landscape, and traditional production methods.

between quinua and Bolivian identity. This effort, vocalized on a spectrum of formal and informal ways, aims to privilege Bolivian quinua in an increasingly competitive market by creating a label that would differentiate it from other quinua products on the shelf as having higher nutritious, cultural, and ecological value (Lozano 2014)—the tensions wrapped up in doing so in light of the current commodity chain will be taken up in later sections in order to highlight the material struggle entailed in transforming the ideology about who are artisans and who are peasants in the small scale production of cultural products.

Constructing terroir in Bolivia

Paty and I visited Challapata, a small town outside Oruro that is known for its important role in the quinua commodity chain, both as the location of several empresas and also as a stop on the black market for quinua as it makes its way across Bolivian borders into Peru. We went to Challapata in order to visit the market for quinua, the same market mentioned in Chapter Three. We talked to the few producers who were there, though most of them were absent due to the precipitous drop in prices for quinua at the time. When I asked one producer what type of pest control he used, he replied that it was a secret. Slightly taken aback, but respectful of his decision to withhold that information, I continued to ask general questions about his production process and if he was certified organic. Paty and I walked away from the man and stood across the street. I reread everything I had written down from the conversation with the man, and she helped remind me of things that I had missed. As we discussed the interview, the man

approached us. He looked perturbed, and asked me what university I went to, adding that he did not believe I was a student. As Paty and I both reassured him that I was a researcher, he said he suspected me of attempting to apprehend his knowledge about how to grow quinua and take it back to my country in order to begin growing it in the United States. Finally it seemed we convinced him that I was nothing more than a student, uninterested in growing quinua myself and only in learning about the struggles of growing in Bolivia, and though he looked incredulous, he nodded his head and walked away.

This unexpected experience spoke volumes about the current climate among Bolivian quiñeros, in this time of dismal prices and the proliferation of production outside the Andes, whether it be perceived or real. This man, who may or may not have had distrust of *gringo/as* before the prices crashed, certainly read my interview questions as strategies to abduct knowledge from Bolivians about quinua and take it back to my country in order to cash in on the profitable grain—an act that might seem egregious to someone who saw quinua as *belonging* to Bolivians. Claims to this belonging, however, are differential among producers. While the man who confronted me in the market in Challapata grew quinua on a nearby plot in the central altiplano, some producers in the southern altiplano might feel his quinua is inauthentic. Additionally, interviews with technicians and government officials emphasize that the most valuable quinua can be attributed both to its rootedness in indigenous knowledge and the ecology of the southern altiplano, although this, as will be discussed, is a claim full of tensions.

In various ways, these examples showcase sentiments that quinua is a product of the Andes, and that, given the competitive market, to Bolivians in particular. In more

formal settings, these sentiments are vocalized on the basis of the unique ecology and production methods employed in the southern altiplano, aspects of quinua production that *add* value, in keeping with the earlier section that hand crafted and place-based food is higher in value. This section first presents the work of anthropologist Andrew Ofstenhage (2011, 2012) in order to show how some producers in southern altiplano construct quinua from that region as authentic. Because of this, they argue that other commodity chains, such as the organic one, undermine the high value of quinua that is rooted in their practices, ecosystems, and knowledges. The next section looks at how similar claims about the southern altiplano were also vocalized in interviews. Lastly, I move on to show how these claims are formalized in legal documents in order to formulate quinua as a strategic crop for an "ecological Bolivia."[10] Both of these together showcase the significant changes that have occurred in the ideology about smallholder producers, indigenous knowledge systems, and particular landscapes. And while all of these facilitate the construction of terroir, they also hold within them certain exclusions and generalizations that trouble Dos as a strategy to address more systemic problems. These reflections work towards more critical perspectives on the power of the market to foster equalizing tendencies, to be considered in a later section.

[10] "Ecological Bolivia" is a phrase used in Law 3525. This term is used in the sense that, through particular policies, the contemporary Bolivian state stands in contrast both to its past and also to industrialized countries. In this way, the phrase exemplifies the broader platform of the MAS to decolonize the state.

Constructing terrior in the southern altiplano

The work of anthropologist Andrew Ofstehage (2011, 2012) provides important insights into the ongoing struggle of producers in the Lipez region of the southern altiplano to establish a DO for quinua. Ofstehage's (2011) ethnographic research shows that quiñeros very much seek to construct terroir: producers highlight the ways that the ecology of the southern altiplano produces a particularly larger grain, but most importantly, they emphasize that this quinua is special as a function of their laboring processes, the special skills that they employ, and their localized knowledge of the region. Local activists and an organization of producers work to establish a DO for Quinua Real specifically from the Lipez region. While Quinua Real is grown in other places outside the Lipez region (for instance, the largest producer of Quinua Real is the province of Salinas de Garci Mendoza), this association works to differentiate Lipeña quinua (quinua from Lipez), "as a method of re-embedding the quinua trading economy with farmer identities. One of the ways they do that is to revalue quinua to include both the farmers themselves and the labor that they perform" (Ofstehage 2011: 106). Here it is clear that the differentiation of quinua from this region is based not only on ecology (though this plays a large role), and even deeper than laboring practices (though this, too, is essential), but also on a sense of *identity.* For instance, in the southern altiplano, where quinua is one of the few crops able to grow, it also holds mythological significance for some campesinos (Ofstehage 2001).

In this study, farmers often differentiated their production methods from other regions based on the fact that they did not used mechanized agricultural tools. Ofstehage reports that the producers in the region use plant extracts for pest control and performed

each part of quinua production by hand, even the laborious stage of threshing. This arduous task, however, was something that from their perspective made their quinua much more valuable than that of the production from the Challapata area. Producers in the southern altiplano articulated that farmers in Challapata used mechanical threshers and tractors. To the producers, the greater time and sacrifice of producing quinua by hand warranted higher prices. This sentiment is well represented as Ofstehage describes the anger producers expressed at the possibility of their quinua being bought by intermediaries and mixed in with other quinua that may be conventional, to be sold in markets abroad where it might be mixed again with Peruvian quinua (Ofstehage 2011).

The importance of the laboring process, and the defense of it by producers, means that to these producers, commodity chains like the one for organic quinua described in the previous chapter are not representative of *authentic* quinua. In formulating a regional DO, the producers establish what production looks like (rather than taking cues from foreign TPCs). This is well expressed when Ofstehage uses the phrase more-than-organic to describe the laboring processes and their significance to Lipeños:

> Many of the *quinueros* in San Agustín spoke of the DO in terms of identity and of ownership, thereby demonstrating their intimate concern for the social labor, cultural know-how, and person sacrifices that is materialized in their quinoa. Rather than focus on the physical qualities of Lipeña quinoa, farmers often explained that the difference between their production and that of other regions was the work performed by Lipeño farmers. Lipeño quinueros were said to use manual labor in planting, harvesting, processing, and protecting their quinoa while other regions' producers used tractors. They argued that in producing quinoa, they were using more-than-organic practices and recreating traditional farming practices—both initiatives, they thought, should distinguish their product" (2011: 108)

The above quote summarizes well the ways in which Lipeño farmers prioritize their laboring processes as part of identity. While chemical testing may prove that quinua

in different regions is organic, to some quiñeros in this region, that alone does not constitute this quinua as authentic. In short, history and culture add value.

I also had an interview with a producer from the Lipez region of the southern altiplano, who I connected with via the most important peasant organization in Bolivia, the CSTUCB. This organization has a long history of activism around campesino rights in Bolivia. The person I interviewed there was Abdon Félix,[11] whose ayllu is in the Lipez region of the southern altiplano. His positionality as a representative of the CSUTCB probably informed much of the responses to my questions, and therefore do not represent the views of indigenous people on the whole: Félix's refusal to enter the market for quinua, described below, is a political choice that should not be taken as an essential viewpoint of being indigenous. Nonetheless, Félix informed me that in his ayllu, they cultivated Quinua Real on the shores of the Salar de Uyuni, which helps the quinua grow. Felix and I talked for a long time about the changes that have occurred in the cultivation of quinua: it is now grown on plots larger than 20 hectares, using machinery throughout the production process, and people migrate back to the ayllus from the cities to produce on the land of their ancestors. Felix made a point that he was someone who lived in the community, and who had lived there all his life. He contrasted the quinua grown on huge tracts of land with his own: mass produced quinua had no flavor—and of its producers, he said, "*No le importa la madre tierra,"* "Mother Earth does not matter to them." One of the aspects of quinua production that he emphasized the most was the sacrifice of growing quinua using traditional methods: he stepped through his production process, from forming individual holes in the ground by hand, to harvesting, drying, threshing,

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[11] Felix permitted me to use his name in my thesis, and so I do not use a pseudonym here.

and winnowing—an arduous process that demands long hours. But the *value* of quinua, he said, could not be put in monetary terms: a price did not adequately capture this sacrifice. When I asked if he sold his quinua he replied he did not, and this, it seemed, was a very purposeful political choice.[12] The commercialization of quinua, therefore, did not adequately capture all that is entailed in its production. Again, it is clear from the work of Ofstehage that this view should not be taken as widespread or essential to indigenous perspectives,[13] though it shows the deep way in which Lipenos construct the significance of their laboring process, which is part of their identity, to be embedded in the product itself.[14]

Constructing terroir in interviews

The efforts of producers in the Lipez region signal a way that some producers work to establish a commodity chain for quinua that transmits (or represents) their identity throughout the commodity's travels abroad. This is not a sentiment only held by groups of producers, but is also expressed in interviews with technicians and government workers, who vocalized the exceptionalism of the southern altiplano not only through its

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[12] Félix's worldview that rejects the basic principle of the commodification of quinua shows that opinions among producers in the southern altiplano are not unanimous. While some understand the formation of a DO to be an important part of embedding identity into a commodity, Félix rejects this process entirely.

[13] For examples of how indigenous practice and quinua production persist in capitalist modes of production, see Walsh-Dilley (2013).

[14] It is interesting to note here that even after describing the labor-intensive process of growing quinua, when I asked Félix what was the greatest struggle of growing quinua, he replied that climate change is the biggest challenge producers face growing quinua in the southern altiplano.

particular set of physical characteristics, but also the methods that producers use to grow quinua there.

As has been mentioned earlier in this thesis, the altiplano experiences a gradient of precipitation from more to less along a north-south axis, where the northern altiplano experiences slightly more annual rainfall than the southern altiplano. This means that in the northern altiplano, smallholder producers rotate quinua with a number of other products (such as lettuce, beans, onions, wheat, among others). Methods for growing these cultivars, according to my interview with the MDRyT office in Oruro, include the use of pesticides—and so, even if no chemicals are used in the production of quinua, it cannot be considered organic due to the use of chemicals on the same plot of land for the other crops. Since the northern altiplano allows for the production of other agricultural goods, whereas the southern altiplano only quinua can be grown, the southern altiplano is said to be, "100% natural organic" (interview with MDRyT 7/8/2016). In more biological terms, the climate of the southern altiplano is said to produce special nutritional attributes of the grain. The solar rays that reflect off the large, white surface area of the largest salt flat in the world provide extra energy to the quinua that lines its shores (Laguna 2015). Also, longer periods before harvest mean that the *saponina* in the grain (the attribute that makes quinua bitter) has a longer time to be removed, and the larger grain means there are higher concentrations of amino acids (Lozano 2014).

In addition to this climatic difference, the southern altiplano was also described as having differential social characteristics. This sentiment was expressed by Pedro, a technician from FAUTAPO who explained: "It is more traditional and old-fashioned in this zone [the southern altiplano]" (Interview w/ Pedro 7/5/2016.). As Pedro stepped

through each stage of production, describing in detail the months in which the rain falls and the moment of planting, he also remarked that in the southern altiplano, producers did not have extensive irrigation systems; for him this meant that the quiñeros in this zone only produced with the rain, with the natural processes, making this quinua more valuable. To emphasize, he began this conversation with the following statement: "For us, here in the southern altiplano, we have a production that is within natural conditions."

This is all put in contrast with the production in Peru, the US, and even with the northern and central altiplano. The description of the production process in the Southern Altiplano above was said to take 18 months due to its adherence to natural processes. Meanwhile, in Peru, some producers are said to be able to harvest quinua twice per year (interview with Saravia 7/8/2016). The intense production there has meant that Peru has surpassed Bolivia as the primary exporter of quinua since 2014 (FAOSTAT accessed 3/10/2017).

In this vein, the interview with the Ministry of Rural Development, the MDRyT, assigned different values to these different kinds of production, vocalizing that quinua from Bolivia was more valuable than quinua from Peru based on the particular methods of production that are employed in each of these locations. I have put in italics the two places where this differential quality is made most obvious in order to emphasize how Boilvian quinua, and specifically Quinua Real is *contrasted* to quinua grown in other places, and characterized as more valuable.

> **MDRyT #1:** Now, the pests have increased as a result of the prices. But still, the communities here in the intersalar zone grow totally traditional-organically. They do not use chemicals, they don't need to. Because they rotate the soils, because they produce on the hillsides, because they do not use a great quantity of agricultural machinery, they rotate the soil by hand…*This is more valuable*

quinua. Because after the rest have entered the plains with tractors, problems with the fertility of the soils began…

Me: Do you know if the international market is more secure than the domestic market?

MDRyT #1: No, the prices have fallen because Peru has entered with more strength in the market for quinua

Me: Everything there is conventional?

MDRyT #1: Yes, the products are three times cheaper there. *That quinua has no quality.*

Me: And they [in Peru] can cultivate two times per year

MDRyT #1: But they don't have Quinua Real. Quinua Real is known throughout the world because it is organic.

Over the course of this conversation, it becomes clear that *valuable* quinua is that which is not grown using machinery or pesticides, but rather, is grown using methods associated with how quinua is traditionally grown. These sentiments are reminiscent of Tregear's (2003) discussion of value, where categories of quality have shifted to the value of handcrafted over mass produced food.

This conversation can be paralleled by a later one with the MDRyT, which put these characterizations in more tangible terms of differences in price: whereas the price of quinua has fallen, the price of organic quinua has remained relatively high. They cite that at the time, conventional quinua costs 300 Bolivianos (43.41 USD as of 2016) per quintal while organic quinua costs 800 Bolivianos (115.76 USD) per quintal. And while "Peru, India, France, Chile….Indonesia, Malaysia, Australia, everyone is producing quinua…" (interview with MDRyT 7/8/2016), Quinua Real is different and therefore maintains a relatively higher price.

Pedro was not as hopeful in regards to this topic. After taking time to elaborate the cultivation of quinua in Peru, the extensive use of chemical fertilizers and pesticides, the frequency with which Peruvian quinua is cultivated, he adds that Peru also exports organic quinua, a reality that he admitted was difficult to understand. And yet, he said, "We are working with the same certifiers." As he listed a few third parties that certify both Bolivian and Peruvian organic quinua, he lamented that despite the deep differences in quality, the market does not differentiate between the two. Though quinua might be from two very different regions, it would have the same label on grocery store shelves. In this vein, he said that with the government, FAUTAPO was working on establishing a Denomination of Origin (DO) for Quinua Real: "Something to differentiate us from the rest of the countries" (Interview with Pedro 7/5/2016)

The government has been successful in gaining DO recognition regionally. In 2014, the Comunidad Andina (CAN), a politico-economic association of the Andean countries of Bolivia, Peru, Ecuador and Colombia, recognized Quinua Real as a product solely of Bolivia. Yet still, Quinua Real has yet to achieve international recognition by WIPO. As Pedro puts it: "We have yet to work with the European Union."

As these actors construct the terroir of the southern altiplano by emphasizing the physical properties of the sub-region's climate and the fact that there are traditional methods of production used to grow it, they articulate that a characteristic of Quinua Real is that it is organic, adding value in relation to its less valuable conventional counterpart. Yet they also note the differences between organic production and traditional production:

> In fact, the zone of the southern altiplano of Bolivia, between the south of the department of Oruro until the department of Potosí, is unique. There, conventional quinua is not produced: only organic quinua and traditional quinua. Why traditional quinua? Because you will find that the producers of quinua produce on

> the hillsides. So there, there are ancestral *usos y costumbres*,[15] the techniques of the grandparents. And this quinua is healthful, it's purely natural. But it doesn't have certification.
> What is the difference in the organic product and the natural product? It is just the certification. Someone has to tell you your product is organic. And for them to tell you it is organic, you have to truly comply with the norms and practices… (interview with Pedro 7/5/2016).

This theme, the differentiation of organic producers and traditional producers, had become a familiar one to my ears by the time I interviewed Pedro. In any kind of pamphlet produced by the NGOs, informational text about growing quinua organically, or even government document about organic certification, this differentiation would be made. It became so familiar I began referring to it as "the tale of the three producers:" one that would first describe conventional production (large-scale production with pesticides and tractors), traditional production (production using the knowledge of the ancestors) and organic production (production that complies with international certification norms). The distinction between traditional and organic rests in the fact that even while traditional methods may avoid chemical inputs, they still cannot enter the international market for organic quinua without certification: which means that producers need to comply with norms set by third party certifiers. The way Pedro phrases this dynamic in the quote above hints at the power relations wrapped up in this process; and the themes taken up in Chatper Three also suggest that this differentiation plays out on a landscape characterized by social inequality—the organic market itself being power laden and tending to increase economic differences among producers.

Pointing out the differences between these conceptual categories of producers helps foster terroir in that it maintains the image of quinua being grown by those who use

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[15] Usos y costumbres, or customary practices, are the place-based rules of indigenous campesino communities that govern and allocate resources (Perreault 2008).

indigenous knowledge systems and place-based production methods. But this discussion was not normally followed by the financial and logistical barriers that producers face towards becoming organic producers (such as those covered in Chapter Three); or the fluidity with which producers may enter and exit these categories in practice (such as when the prices for organic quinua are too low to justify the higher cost of certification); or the realities that many producers may need to rely on pesticides in order to save crops, even while they may otherwise be considered "traditional" in every other sense. To emphasize this point, the graphs below, taken from Aroni et al. 2009, show differences in types of pest control in the departments of Oruro (central altiplano) and Potosí (southern altiplano). In Oruro, 34% of pest control is performed using *piretro,* a popular certified organic form of pest control (the type of pest control mentioned in Chapter Two), while only 5% is grown using chemicals (depicted on the graph as QMC). Meanwhile, the graph on the right depicts pest control in Potosí, where 45% of pest control uses chemicals and only 13% uses *piretro.*

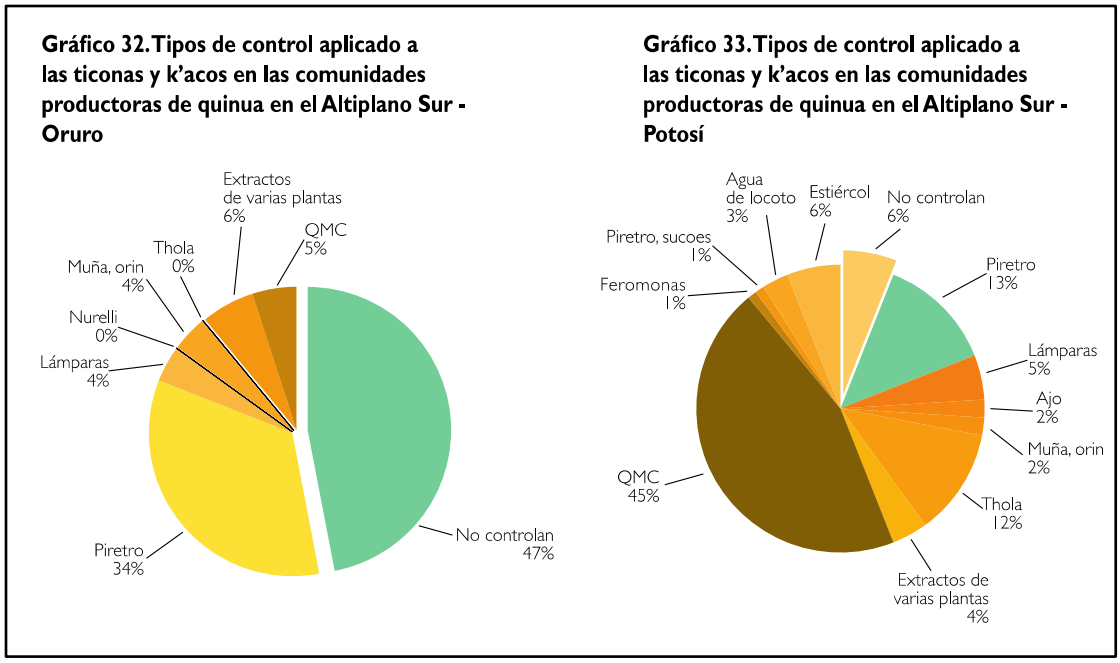

Figure 4.2: Different types of pest control use in the production of quinua on the central and southern altiplano (Aroni et al. 2009: 50).

While it is difficult to extrapolate from these graphs as to why these regions show different preferences for pest control without more wide spread interviews from producers in these areas, this data disturbs the image that the southern altiplano is a landscape where production is purely organic and natural in comparison to other regions. While this imagery of the landscape as such is important for constructing terroir and creating a DO for Quinua Real in the southern altiplano, it in part may silence the ongoing struggles of producers who battle increased incidence of pests, threats of crop failure, and increased reliance on pesticides in a market with crashing prices and little access to expensive certified organic pest control (for a review of these issues, see Chapter Three). These realities politicize the facile distinctions between "traditional" and "organic" producers. To further review this topic, the following section examines the legal framework that affects quinua producers, taking care to point out the legal distinctions made between traditional and organic (or, in the case of government

language, ecological) production, the implications of which are discussed further in the third section of this chapter.

Constructing terroir in legal frameworks

As was formulated in the first section of Chapter Two, ideas, conceptual categories, and worldviews inform state decisions about land use strategies. Therefore particular discursive formations have material effects on what agricultural production looks like and how landscapes dominated by indigenous identities are supported or unsupported by the state. In Chapter Two, part of this analysis considered the rhetoric of the state during the 1952 Revolution to modernize peasant agriculture through its efforts to formulate a *mestizo* Bolivian identity. As can be seen from the interviews above and the language of the legislature below, however, these conceptual categories about the value of indigenous agriculture have changed. Smallholders producing non-traditional agricultural exports (in the sense that they are not producing coffee, wheat, or corn) using indigenous knowledge add value to the crop instead of being seen as unproductive. Additionally, the landscape of the southern altiplano, long considered a desolate wasteland since colonial times, resurfaces in the quinua boom as an exceptional place, a unique landscape that reportedly adds both nutritional and cultural value to quinua.

All of these strategies specific to quinua can be placed in the broader political platform of the MAS. Headed by Evo Morales, the MAS came to power with the promise to bring "a cultural democratic revolution" in the spirit of the uprising of Tupac Katari (Postero 2010: 18) to the Bolivian people. Morales' government stands on a broad

platform of cultural, economic, and ecological revolution through the rhetoric of privileging indigenous worldviews instead of liberal ones (Escobar 2010), the principle of *Vivir Bien* that privileges other markers of development besides raw economic growth (Farthing & Kohl 2014)[16] and a new national plan that gives rights to and protects *Pachamama* rather than destroy her (Morales 2011).

While an analysis of the state could span several chapters, only a few pages are devoted to this task here in order to show the ways in which the state constructs quinua as part of Bolivian national identity, in specific ways with certain ends in order to formulate it as a strategic crop for a more "ecological Bolivia." This effort signifies a paradigm shift in government rhetoric about the place of smallholder, indigenous agriculture in a national economy and the global market. Additionally, this shift not only considers quinua a strategic export, but also as part of a Bolivian identity in order to construct the terroir of the southern altiplano and gain international legal recognition, and gain a foothold on the international market. Yet even while these identities are valorized, the promotion of quinua is also as an export. This therefore makes it necessary to concede to international organic standards. This can be seen in action in the legal distinction between traditional and ecological production: while one is sanctioned to move freely beyond Bolivian borders, the other is not. The discussion below analyzes the language of two pieces of legislation, including Law 3525: Regulation and Promotion of Ecological

[16] *Vivir Bien* is literally translated as "to live well," although it has a wider political and cosmological meaning in many parts of Latin America to move beyond market paradigms of development and to privilege other ways of being (Escobar 2010). It is important to note as well that vivir bien is a rough translation itself of *suma qamaña,* an Aymara phrase, and *sumak kawsay*, its Quechua translation.

Agriculture and Non-timber Forestry Production and *La Política y Estrategia Nacional de la Quinua* (Policy and National Strategy of Quinua).

Firstly, Law 3525 (2006) comes as part of the larger National Plan of Development to *Vivir Bien*, developed in 2006. In its statement of purpose, Law 3525 seeks to:

> …promote and fortify the sustainable development of ecological agricultural production and non-timber forestry in Bolivia, based in the principle that in the fight against hunger, it is not sufficient to produce more food, but that these are of quality, innocuous to human health and biodiversity. At the same time, food should be accessible and within reach of all human beings; and the processes of production, transformation, industrialization and commercialization should not cause a negative impact on or hurt the environment (pg. 1, translated by author).[17]

Here the Law states as its purpose both to foster ecological and human health insofar as agricultural production should promote biodiversity and food sovereignty, a principle often referred to in the Law. The Law defines the principles of ecological production as production that is sustainable over the long term, benefits from ecological cycles, achieves environmental equilibrium, and tends to a socio-cultural balance the following way: "…respect for the forms of community organization of indigenous peoples and/or peasants; Respect for cultural customs in the use of plant and/or animal species; Respect for the territory of indigenous people in the exploitation or use of plant products and/or animals that sustain or support food sovereignty" (pg. 6). Here, ecological production is defined in acknowledgement of cultural difference.

In order to realize this definition of ecological production, the law sets out national legislation that creates norms to regulate production and to create an institution that enforces the standards. Importantly, of these standards, the law states that:

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[17] Quotes taken from legislation for the remainder of this chapter have been translated by author.

> Standards for the organic production of crops, animal production, and rational use of non-timber forest resources, procedures, food handling, labeling and social justice, will be elaborated according to customs, culture and local wisdom, with equivalence to the national and international regulations of the ecological production, described in the regulation of the present law (pg. 6).

Here again cultural difference is taken as a starting point for drafting national norms. Couched in this legislation, however, is the recognition of two types of certifications for the trade of ecological products: international and national. While the law states international trade will follow certification recognized under ISO Guide 65 (following international norms), within the country, products will be evaluated and controlled under norms approved by the National Authority of the System of Control of Ecological Production that the legislation sets up. What this legislation seeks to do, then, is to set up a national system of regulation of ecological agricultural products that are to follow norms based on, "customs, culture and local wisdom" *in addition to* the norms set by international actors. Effectively, the state here is contesting the terms on which quinua circulates through the economy by setting up its own system of control. At the same time, however, it lacks power to supplant international norms with Bolivian ones. If Bolivian producers hope to enter the more profitable international market, they must continue to comply with international norms.

Reinforcing this dynamic is the legal distinction between traditional and ecological production. Though traditional methods are what make quinua valuable and help to construct terroir, they still are different than ecological production, which complies with norms, and in the case of international export of quinua, complies with international norms that Bolivia has virtually no control over. Thus, these two categories

remain distinct, and producers face barriers to enter international markets, even while traditional methods are valorized.

This difference between these two can be found in the technical definitions of ecological and traditional agriculture. According to the document, ecological production: "responds to norms of production, by which it differs from traditional agriculture and conventional agriculture." Here, it is explicitly stated that ecological production is by definition different than traditional production. The exact reason for this difference is described in the definition of ecological production: "It is a holistic system of agricultural production that foments and betters the health of the agro-ecosystem, in particular biodiversity, the biological cycles, and the biological activity of the soil; and that it complies with the requirements of the present Norm." What sets ecological production apart from traditional production, then, is the compliance to the norm set out by the legislation. The norm's definition of traditional agriculture confirms this:

> The system of production based in the knowledge of the *originario* people and the application of ancestral techniques, such as minimum tillage, reciprocity of work, crop rotation and/or plots; use of local inputs; collective cultural techniques in the care of crops, collection and/or breeding of animals; collective precautions in the care of soils and/or prairies of common use. Is the production system in which no products or techniques prohibited by this standard are used (pg. 7).

In this way, ecological and traditional productions differ in the fundamental way that ecological production complies with the norm, while traditional agriculture has to be converted to ecological in order to be certified. As such, according to Law 3525, conversion from traditional system to ecological system takes a period of 12 months in order to be certified ecological (conversion from conventional can take between 24-36 months, and normally the third crop can be considered ecological) (pg. 12). This distinction is important to point out because it calls attention to the fact that traditional

agriculture is not ready to circulate unless it complies with international certification norms. In this way, while the state works to incorporate cultural difference into standards for ecological production, construct terroir, and push back against institutions that do not incorporate these types of norms, the present reality of complying with TPC means that these trends continue to play out as external markets (where the state has little input) are more profitable.

In a similar vein, the Policy and National Strategy of Quinua (2010) comes as part of an effort by the government to valorize quinua as a strategic national export that also aligns with the government's wider efforts to privilege indigenous identities and promote an "ecological Bolivia." This piece of legislation also sees itself as part of the National Plan of Development to *Vivir Bien* (2007), in addition to the Ministerial Plan for Rural, Agrarian, and Forestry Revolution (2006), which the Policy and National Strategy of Quinua states was a plan for an alternative pattern of development that would be environmentally sustainable in order to achieve food sovereignty (pg. 13).[18] The National Strategy explicitly states from the outset: "That quinua is a strategic natural resource, is property and direct dominion of the Bolivian people, is indivisible, imprescriptible, and a fundamental element of the Productive Complex of the Altiplano, and as such the MDRyT as head of the agricultural sector has determined to put into effect the 'Policy and National Strategy of Quinua' that establishes guidelines ... for the sustainable development of organic quinua" (pg. 1). With this stated, the plan takes as its objective to promote quinua production on the altiplano, but with the explicit goal to "eradicate poverty and inequality, oriented to guarantee food sovereignty, harmony with nature, and

[18] Many critiques have been made regarding the ability of the agrarian reform to actually bring about such a result (see Morales 2011 and Anthias & Radcliffe 2015).

the community with the hope that they can *vivir bien*" (pg. 7). To summarize the specific ways in which the plan aims to do so, it states that it aims to support the strategic development of technology, promote the sustainable use of natural resources, establish systems of credit for producers, support the internal and external commercialization of quinua, support producer organizations, and fortify productive infrastructure of the commodity chain.

To review specific aspects of the most pertinent of these, the plan states that strategic development of technology in regards to quinua includes a strategy to "Develop and implement an ancestral technological development program, exchanging local knowledge to generate added value in quinua products preserving the cultural values of local populations and integrated management of the natural resources of mother earth" (pg. 20). This knowledge is to be combined with "advances in clean technology" in order to produce organic quinua sustainably (pg. 20). In order to simultaneously preserve local knowledge and promote external commercialization, the plan states that it will promote the creation of a Denomination of Origin. This it does in order to distinguish Bolivian quinua in the exterior market (pg. 22). More tangible aspects of the plan also include promises to install industrial plants in rural areas so that the processes of added value can take place closer to the cites of production, create centers for the production of organic fertilizer, as well as promote irrigation technology (pg. 25).

There are other efforts in addition to these two pieces of legislation that can also be listed as state efforts to solidify quinua as a strategic export. In 2014, for instance, the government published a 131-page document discussing the historical significance, cultural uniqueness, and material conditions of production of Quinua Real in order to

promote a Denomination of Origin. Additionally, the government conducted an Agricultural Census in 2013, in which extensive counting was done down to the community level throughout the country, reporting information on what types of crops are grown, surface area devoted to each crop, livestock rearing, irrigation technology, machinery, and pest control fumigation, among other things. One of the crops that this census reported on was quinua, producing specialized information on the spatial distribution of quinua production. In addition to these, both MDRyT offices in La Paz and Oruro had special offices specific to research on quinua, where I was directed in order to talk to a government worker who specialized in analyzing data on quinua production, consumption, and export in and out of the country.

Together, these efforts are significant when placed in the larger historical context of the relationship of the state to indigenous knowledge systems, social organizations, methods of production, and agricultural crops. Devoting time and resources into promoting quinua as a strategic crop of an "ecological Bolivia" due to the ways in which it is tied to indigenous identities breaks with rhetoric of the past, such as the strategies employed in the 1952 Revolution discussed in Chapter Two, which manifested as efforts to forge a *mestizo* identity through the promotion of productivist agriculture. In doing so, the language of the state in Law 3525 and the Policy and National Strategy of Quinua promote new environmental governance of the quinua commodity chain by incorporating cultural difference and indigenous knowledge systems into the norms for quinua, as well as promoting it as a strategic export. Law 3525 constructs norms based on the importance of indigenous knowledge and *originario* production methods, breaking from a long history of erasing these. Importantly, however, Law 3525 acknowledges that ecological

production for the more profitable international market continues to need certification from international governing bodies. This means that traditional agriculture, though it appears to be championed by the state, is legally distinct from that which is sanctioned to cross national boundaries, and needs to undergo a conversion process. The Policy and National Strategy of Quinua brings a crop associated with indigenous campesino communities to the fore as a national strategy, again promoting indigenous knowledge systems and organizational forms. Wrapped up in these efforts, however, is also a language of ecological modernization, promoting the power of both national and international markets (with the help of a DO for Quinua Real) to bring equality to the altiplano via sustainable development.

This section's aim has been to point out the ways in which the state's language works to construct quinua as emblematic of an ecologically harmonious, culturally diverse pluri-nation, helping to constructing the terroir of the southern altiplano: the tensions of doing so given the commodity chain as it stands now are reviewed in the next section. The extent to which the language of this specific legislation does or does not take material form is beyond the scope of this research project, however, and would demand extensive and more broad-based fieldwork to investigate producers' experience of government support in quinua production. It would be a fruitful research project in the future to investigate the extent to which the establishment of national norms for internal markets work as a counter-trend to the tendencies of the international market and the power of distant actors to exert influence over the environmental governance of quinua production. Additionally, this project would be well-aimed towards investigating the ways in which food sovereignty is defined, imagined, and governed, specifically to see

whether this concept contests (rather than entrenches) the presence of TPC in the commodity chain for quinua. The promotion of food sovereignty over the development of larger markets for quinua abroad, and the democratic creation of norms that are enforced by the state, might work to overcome some of the critiques expressed in this thesis.

Tensions in the construction of terroir

Despite the efforts of the government, technicians, and producers to create a DO for Quinua Real, the construction of another commodity chain for quinua also holds within it some tensions. For example, specifically from Ofstehage's work (2011: 109), he reports that even in the Lipez area, there are some producers who, "…see the flow of quinoa to the market as unrelated to their attachment to the quinoa. If quinoa is an essential part of life and family, it is also a cash crop to be disposed of expeditiously." This is an illustrative point for understanding that even in this special place of quinua production, there are some producers who have no interest in laborious processes involved in traditional production methods. Additionally, Ofstehage reports that a single crop from the same field can yield multiple grades of quinua, from low grade small grains to high grade large ones (hence the reason for sorting out the grains using the wind, or other mechanized tools). Selling this low grade quinua to intermediaries for trading networks outside established organic and DO commodity chains is important for agrarian livelihoods in rural areas—in addition, trading quinua with local intermediaries, who bring goods from disparate areas such as vegetables, is essential for rural communities (Ofstehage 2012; Walsh-Dilley 2013). Ofstehage asks critically what would happen to

the informal exchanges of quinua facilitated by intermediaries if a formal DO is established. Additionally, the DO depends on a consistant production of high grade quinua that is rooted in the cultural values of producers. Meanwhile, many households rely on additional income from the sale of low grade quinua. Some might perceive these informal trades to potentially undermine formal constructions of terroir, and an important income could be eliminated.

Expanding further out, however, to the regional scale, the boundaries around which GIs are officially delineated can also lead to significant inter-personal conflict. Producers with land outside the GI boundaries could potentially greatly miss out on added value of a GI, even if they live meters away from the established territory (Canada & Vazquez 2005). This critique is important to consider since efforts around a DO for Quinua Real often rely on contrasting production in different regions, meaning the producers in the central and northern altiplano would surely be left out.

Taking an even wider consideration of global capital flows, while the formulation of the DO is based around ideas that this quinua is *más natural*, other case studies show that the formation of a DO does not always lead to social equity and ecological harmony. The case of tequila in Mexico is an illustrative example (Bowen & Zapata 2009). Bowen & Zapata's (2009) case study shows that in the case of tequila, transnational firms reap larger benefits from tequila production than smallholder producers. This, they add, occurs while the intensification of agave production leaves smallholders more vulnerable to the consequences of increasingly prevalent environmental degradation. Importantly, their case study shows that despite the GI, familiar patterns of capital accumulation persist and environmental degradation continues. They also argue that much of this outcome

surrounds the fact that the GI for tequila delineates a geographic boundary, but is not so specific about production methods—allowing larger private actors into the production of agave. However, even if producers in the southern altiplano are successful at achieving international recognition, is it even possible for producers in rural Bolivia to forge a "concomitant visualization of labor, history, solidarity, and identity" (Ofstehage 2011: 109) with distant consumers vis a vis a label, even if it is one that producers feel is more representative of their identity and laboring processes? And while it would benefit producers if the price of the commodity better reflected their labor-time, these adjustments to the international trade of agricultural goods does not speak to the uneven ability of consumers to afford these products. While some are ale to partake in the flight to quality towards goods produced under socially/ecologically embedded contexts, others continue to consume cheap, mass produced goods. This is without considering the ability of poor urban indigenous populations in Bolivia to afford quinua in as it is increasingly associated with luxury consumption, and prices shift to reflect this.

If quiñeros produce commodities for a special commodity chian, they continue to do so competitively with one another (Goodman 2004). Does this mean that environmental degradation automatically avoided? Additionally, what do bucolic narratives of the southern altiplano hide as producers use pesticides perhaps for a spectrum of reasons? These reasons include lack of ideological association with quinua production, the inability to manage pressures from increased pest populations, and the ability to afford more expensive organic pesticides. These points should be considered alongside laudatory assessments of the contestation of the commodity chain based on

identity, indigenous knowledge, and localized laboring practices, as inserting a new commodity chain alongside more powerful ones is itself an act full of tension.

Blurring the lines

So far, this chapter has shown the way that producers, technicians, government workers, and even the state itself laud production in the southern altiplano, and contrast it with production elsewhere. Quinua outside this bounds is considered inauthentic in that producers in those places lack indigenous practices and ecological values—at times this means in the US, at others it means in Peru, and at still other times, in other regions on the altiplano. This section reflects on an interview that I had with an urban producer in an attempt to unsettle, even just slightly, assumptions about urban quinua producers, who in one interview with the MDRyT, were described as only interested in the *plata* (money).

The young man I interviewed is Javier, who lives in the same neighborhood in which I stayed during my fieldwork in Oruro. When I interviewed him on a chilly afternoon in July, he had been cultivating for three years. As we sat on a bench in the median of a main road in our neighborhood, Javier told me that he grew quinua on a plot of land he inherited from his father. This plot was passed down from his grandfather. Before Javier revisited the plot only a few years ago, the land had not been worked for two generations. He was part of an association, the story of which began this thesis. My interview with Javier was informative as to why producers need to create these associations, both for financial and logistical support. He relayed that the association was formed to receive aid from the government and finance the purchase of a venteadora, a

machine like the one pictured in Chapter Two. This is a small example of the government efforts to aid producers outlined earlier in this section. The second reason these associations are necessary are to access information: a theme that was prominent in my conversation with Javier. He explained that as of now, knowing how to grow quinua was a huge challenge—he has to learn through experimentation, observation, and repetition. Aside from events like the taller, he learned how to grow quinua through youtube videos, other quiñeros, and trial and error. Knowledge of the ancestors, he says, had been lost: only the people who stayed in the ayllus still have that. Yet even still, Javier listed off quite a few bio-indicators that I had read about. He described how before, producers would read the environment, including the wind, moon, stars, birds, and foxes, all of which would signal the rain. While he knew about this localized knowledge system, he said he had trouble implementing it because the climate is different: the rain is unpredictable, the animals are different, and the vegetation cover is changing. Given this uncertainty, Javier relies on technical advice from the ingeniero. Yet this is not the only techniques he uses. He also added that the reason they do not have pests is because they pay tribute to Pachamama in a ceremony before the planting, in which they ask not to have worms, birds, or vicuñas. They do similar ceremonies before they plant, prior to harvesting, and after harvesting in order to ask for a good sale of their quinua: "*Estamos rescatando los costumbres…Es los costumbres los que hemos olvidado, pero estamos recordando,"* "We are salvaging the customs…it is the customs that we have forgotten, but we are remembering." For Javier, while *saberes ancestrales*[19] were difficult to access

[19] *Saberes ancestrales*, or ancestral knowledge, was the way that Javier expressed what has so far in this thesis been loosely termed "traditional knowledge." I leave his words

and implement, given his social position and the uncertainties of a changing climate, it remained important for him to carry on certain traditions. He made clear that he did not just mean this in a spiritual sense but in a way that had material consequences for how many pests he had. Certainly these are not strategies for organic pest control that are not written into the international certification norms, but they are nonetheless important to certain producers. Indeed, Javier said that he needed both technical knowledge from the ingeniero, *and* to reconnect with saberes ancestrales in order to be successful at growing for the international market for organic quinua—a commitment that further problematizes facile categories of "traditional" and "organic" producers.

This story shows the day to day ways in which a producer of quinua might navigate, accept, and/or reject (as was the case for Felix) the market, seeing quinua and the process of producing it as part of her or his identity in various ways. While Felix sees quinua as part of his identity, and therefore a reason *not* to sell, Javier sees reconnecting with indigenous practices as a key aspect of being successful at producing for the market. Given these, facile categories of producers as "traditional" and "organic" based on the use of particular knowledge systems is much messier in practice in that producers navigate a politics of identity at every step along the way. There are indeed a multiplicity of social positions from which producers act from that include class *and* race, and regardless of legal frameworks or international norms, these actors continue to negotiate these axes of difference day to day, choosing to reject the market completely, forge a new one in its stead, or integrate personal practices into existing chains as they see fit.

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here in an attempt to remain close to Javier's conceptual categories about knowledge systems as he relayed them to me.

Reflecting on these points is important in order to avoid an abstract discussion on the ways in which landscapes, quinua, and identity are interlinked.

Conclusion

This chapter has sought to describe the many ways—both through formal and interpersonal means—in which quinua and identity are articulated and used as a platform for contesting capital accumulation created by quinua production in (sometimes) distant places. Doing so helps to theorize the commodity chain described in Chapter Three as one in which distant actors exert influence on the laboring practices of producers and environmental governance in quinua production. Meanwhile evidence from Chapter Two helps to politicize the ecological narratives of this commodity chain. This commodity chain continues to create exclusions to relatively smaller landholders, and produces new natures that put producers at greater risks, even while they feel increasing pressure to avoid chemicals. Chapter Four puts that commodity chain alongside a burgeoning alternative: a commodity chain in which producer groups seek to defend their laboring processes and create their own nature. Interestingly, this effort is recognized and channeled through the ideology technicians, government workers, and even state law—albeit in incomplete ways full of their own tensions. In this vein, idealistic characterizations of the southern altiplano, while important for constructing terroir and certainly the case for some producers in some places, may silence some of the ongoing difficulties producers face with pests and crop failure given the ongoing monocultivation of quinua (in addition to leading to essentialized assumptions that are not representative

of all producers). More broadly, this chapter contextualized GIs and DOs as part of a larger ideological shift regarding smallholder production of cultural goods, both in the international economy and in the rhetoric of the Bolivian state, which reformulates indigenous agricultural practices on the southern altiplano as exemplary of the nation. These great strides to both reformulate the relationship between indigenous identities and the state, and also to carve out space in the global economy for peasant agriculture, are testament to the power of peasants and peasant movements that have historically pushed back against narrow visions of citizenship and racialized exclusion from the market (Bebbington 2001; Kerssen 2015). Importantly, however, these strategies should also be hedged with questions about the power of the market to provide equalizing opportunities among the peasants whose re-imagining as artisans satisfies demand in distant luxury niches of consumption. This chapter closed with the interview that I had with Javier, an urban quinua producer. When held up alongside other stories of those told earlier in the chapter, Javier's story shows that producers engage in/reject the commodity chain in diverse ways, concluding that regardless of legal frameworks or international norms that do or do not promote ethnic/cultural difference, actors navigate questions of quinua and identity from a number of social positions with diverse outcomes. In terms of the broader statement of this thesis to question the ability of the market (even an amended one) to realistically create the social and ecological circumstances that it promises, this chapter has sought to show how identity and cultural difference are increasingly part of that strategy as well. These wider economic, cultural, and political shifts make themselves known as ideas about value transition from one food regime to the next.

Chapter Five
Quinua or Quinoa?

As quinua travels from Bolivia to the United States, the way it is spelled changes: quinua is translated to quinoa. This linguistic conversion is symbolic of a material one as well. After it is produced on the alitplano, quinua passes through various hands, networks, and machines in order to transform it from a plant to a meal wrapped in plastic. Exactly what this transformation looks like may be determined by actors far outside Bolivia, who formalize good practices for production, and mandate compliance with these in order for quinua to even begin its transformation into quinoa. In this commodity chain, the relationship between quinua and quinoa fortifies asymmetrical power relations between producers in Bolivia and professionals and consumers in the Global North. Some producers reject the quinua that flows through these networks. This quinua trades is "u" for an "o" somewhere early on in its transformation, and is inauthentic: not representative of all that quinua is. These producers in the southern altiplano envision a way for quinua (rather than quinoa) to sit on the shelves of grocery stores in the Global

North. Claiming ownership over quinua, valorizing their production methods, and rejecting outside actors that wish to cash in on what they see as a part of their identity, they fight to feel represented overseas by maintaining their ability to determine their own production methods in the international trade of quinua. This translation from quinua to quinoa, then, is a political ecological process that implicates both sites of production and consumption as battlegrounds over place, people, and power.

In theorizing the ways that the material realities of producers in Bolivia are largely impacted by the discursive spaces of quinua consumption the Global North, Marygold Walsh-Dilley (2016) analyzes the messages inscribed on Fair Trade quinua packaging:

> Food packaging and other materials of quinoa importers and distributors use words such as "heritage" and "heirloom" to connect quinoa to a simpler time. Ancient Harvest, a company that specializes in 'ancient' grains including quinoa, emphasizes that these crops are "practically unchanged since their origin." Inca Organics notes "These ancient heirloom grains are not genetically modified or hybrids." They are thus constructed as 'authentic' and 'traditional'… But while these discourses use simplistic and essentialized framings of native peoples to build "solidarity" or to pursue more ethical market systems, they in fact reproduce the very hierarchical logics and systems of power that produce and support global inequality…How can we build solidarity between North and South while also reproducing the very categories and hierarchies that have been so destructive in the past? Building solidarity between white elites and the global poor requires a deep reflection on and reconciliation of colonialism and its ongoing effects. (Walsh-Dilley 2016)

Walsh-Dilley describes the ways in which the packaging of Fair Trade quinua commodities relies upon and reproduces essentialized narratives about indigenous people.

By employing imagery to construct the products of their labor as "Other" to industrial agriculture, a productive cognitive distancing taps into changing ideology in privileged circles of consumption in the Global North about small scale agriculture, ethical food, and the environment. These constructions perpetuate rather than deconstruct North-South power asymmetries. Though Walsh-Dilley's (2016) object of analysis is the discursive power of Fair Trade quinua packaging, a commodity chain that this thesis did not examine, her argument remains a potent reminder of the ways that ideologies about food that circulate in privileged circles of consumption in the Global North are productive in creating power-laden networks that have real effects on the producers whose labor falls under the purview of distant actors. And importantly, while packaging reproduces an ethos of this "ancient grain," some actors in Bolivia, such as those with whom this thesis began, search for new strategies and new technologies. These technologies include bio-engineered pest control methods manufactured in the Global North, which producers use in order to produce quinua in the face of a changing local ecology and global climate.

The quote above from Walsh-Dilley, and one of the over-arching efforts of this thesis, has been to untangle that which is wrapped up in the contemporary commodity fetishism. First theorized by Marx in *Capital Vol. I* (1867), the commodity fetishism continues to be a constructive concept for understanding the class power relations that work to conceal the true circumstances under which commodities have been produced, albeit in many contradictory, transmutable, and multitudinous ways.

In *Capital Vol. I,* Marx was concerned with the historically specific social relations under capitalism that shape the metabolism of nature vis-à-vis human labor. This labor transforms nature into a commodity, a process by which the qualitatively

distinct product of human labor is made quantitatively commensurable to all other commodities. As such, this process veils the social and ecological conditions under which it has been produced. And while organic labels (along with a growing list of other, similar labels) seek to make those conditions known through rigorous standards and alternative forms of environmental governance, they recreate and rely on an already established political economy, social inequality, and the production of new natures. As such, some producers, among other actors in Bolivia (including the state), contest this commodity chain and hope to embed the more-than-organic qualities of their history, identity, and labor into quinua products—calling into being the power-laden and contradictory nature of the organic industry. Yet these actions are not without their own tensions and barriers, as even still, this effort relies on the circulation of a commodity into distant cultural, economic, and geographic spheres.

Chapter One introduced these topics by first presenting the general context for the quinua boom, followed by a section that laid out my theoretical approach. The production of nature thesis helps make sense of the phenomena covered in Chapter Two, which politicized the ecological narratives of the organic industry by historicizing quinua's rise to an internationally-recognized commodity—a process that produces historically specific socio-natures. Food regime theory provides a useful framework for critiquing the political economy of the organic industry and the power-laden structure of transnational governance. This theory makes sense of the popularity of organic agriculture as a class compromise by corporate interests to include ecological aspects to their production (signaling the emergence of a new environmental-corporate regime). As such, established patterns of capital accumulation remain, even while cultural meaning around food

changes and the contradictions of the industrial food regime are made known. This theoretical framework proved useful in Chapter Three, in which I reviewed the contradictions of the trade of organic agriculture along with the differentiations that occur among producers, who have little say in what the standards may look like, insecure access to expensive certified organic pest control in the context of increasing incidence of pests, and limited access to the knowledge necessary for jumping through the hoops of organic certification—all while subjected to increasingly stringent norms and chemical testing. Put simply, this commodity chain works to disproportionately benefit the standards keepers, who reap higher rents on differentiated organic products.

Yet importantly, this is not an exclusively unilateral process. Commodity chains can be sites of contestation—and they are always under construction. Chapter Four showed how some producers and other actors in Bolivia seek to differentiate certain quinua from the commodity chain discussed in Chapter Three by proposing norms that better represent the specific laboring processes, ecologies, and knowledges of producers in the southern altiplano. Yet while these actors stake claims on quinua and valorize particular methods of production, the process of inserting identity into the commodity itself relies on a few tensions.

As this thesis has shown, the process of stabilizing a new regime is messy and uneven; a close look at the transformations of ecologies is a productive exercise in politicizing bourgeois ecological narratives; and commodity chains can be sites of contestation over claims to authenticity and identity as the place of smallholder agrarian livelihoods in the global economy is refashioned in the 21st century. The destabilization of the industrial food regime re-imagines peasants, peasant agricultural methods, and

indigenous knowledge as factors that *add* value to production: yet the discursive transformation of peasants into artisans is uneven, power-laden, and contestable.

Limits to Research and Future Directions

Even as debates in the agrarian question rage on in regards to either the death or persistence of the peasantry (Akram-Lodhi Kay 2010), the popularity of quinua—a grain grown primarily by indigenous campesinos on the Bolivian altiplano—shows that regimes of capitalist accumulation act not in a unilateral direction, but rather, are constantly under construction, negotiated, contested, and re-arranged. This has provided a useful framework for this thesis, and helps establish a potential future direction if it were to be expanded into a larger project.

As was stated in the methodology section of my introductory chapter, my positionality as a white American woman necessarily creates limits to what I can say about the struggles of Bolivians. Additionally, as a student-researcher in the field for the first time, the number of interviews I had with producers was quite limited; therefore it is unclear to what degree the empirics presented in this thesis are representative of wider experiences. As such, the argument laid out in this thesis could be considerably strengthened with a much larger base of interviews.

In this thesis, there are three main limits to research, which could be greatly improved with more fieldwork. The first is gender. Gender, a no doubt important axis of difference, was left untreated in my thesis. Since my time in Bolivia was spent mainly interviewing technicians and government officials (sectors that in Bolivia, as is the case

elsewhere, women are underrepresented), issues of gender were not at the forefront of the interview responses. Though gender was not part of my initial research questions, nor was it a topic that was broached in interviews, there could be gendered patterns of exclusion at play in the quinua boom, and would prove to be an important but understudied research project.[1] A second limit to research has been noted in other places in this thesis, but I revisit here again to suggest that it could also be an important contribution if pursued further. The role of the state in supporting producers hoping to enter the organic market is an important one in order to determine the true extent of the exclusionary power of third party certifiers on the altiplano. Additionally, interesting work could be made of comparing the Bolivian state's national norms to the USDA NOP and EU norms. The inclusion of indigenous campesino identities and worldviews into national norms is a drastic departure from norms for organic production established elsewhere. Finally, another limitation of this thesis and fodder for a future project would be to return to Bolivia with questions specifically regarding changes in landholding since the boom. These themes are extremely complicated in Bolivia due to laws that protect communal landholdings, limited formal documentation, and the historical persistence of ayllus. Altogether, this meant that these research questions were unfeasible for a relatively short research trip, but an interesting future direction for a larger project. As of now, transnational capital has not invested in land on the altiplano, therefore campesinos remain the primary producers of this international commodity, at least in Bolivia and at least for now. Therefore, land conflicts would be between smallholders themselves. This

[1] For more on gender on the altiplano, see work by Olivia Harris (2000) and Melissa Draper (2008).

would be an interesting investigation into a more nuanced understanding of the ways capitalist relations do or do not lead to land consolidation and alienation.

A final word

In thinking about this thesis' contribution to ongoing conversations in the academy, I have aimed to move towards an understanding of the state of agrarian livelihoods in the context of the multitudinous and at times conflicting nature of capital. In this characterization, industrial capital's drive to enclose resources, cause ecological destruction, and cheaply produce food alongside the increased popularity of smallholder, handcrafted food are inter-related processes. Rather than a linear march towards ecological collapse, capital takes many forms. As the contradictions of capital are made known, powerful actors and privileged individuals co-opt the messages of social movements in order to maintain class structure. In this way, this thesis has sought to politicize the narratives and discourses on nature propagated by an emerging food regime—one where value is moving towards organic, small scale, and eco-friendly, and away from the modernist appeal of pesticides, industrialization, and mass production. This thesis has shown that these ideological shifts have real effects on producers, who in some commodity chains, fall under the governance of distant actors that benefit from tapping into these new consumer discourses. This thesis has aimed to show that market-led solutions to environmental crisis, insofar as they rely on individualized choices and bourgeois notions of ethical consumption, do not address structural problems. In fact, these social formations actually reproduce that which they claim to undo—and justify the

status quo. Having shown the way these processes work through the commodity chain for quinua, this thesis has politicized the commodities that sit on grocery store shelves and the ecological narratives they seek to communicate through their labels by revealing the asymmetrical power relations, exclusions, and ecological transformations that are wrapped up in establishing this form of environmental governance. These commodity chains, however, are contested and contestable. Producers are not just passive recipients of these power relations, but also in some places, they actively work to rewrite the terms on which products of their labor circulate through the economy—although, as was shown—this act can also hold within it some tensions.

As this thesis has shown the way identity and ecology are increasingly aspects of commoditization, a lingering question remains. Is quinoa different than quinua? As a quiñero transforms nature through her or his labor, this process is rooted in the social fabric of local interpersonal relations, the ecological knowledge necessary to cultivate successfully on the altiplano, and the material environmental limits and climactic conditions of an arid landscape at 13,000 feet. Yet even still, her or his quinua travels through various networks, across oceans and under microscopes, to arrive on the shelves of central New York as quinoa—discursivly understood in drastically different contexts. This thesis has illuminated at least some of what is entailed in quinua's transformation into quinoa—a highly multiple, contentious, political, and ecological process—and one that is constantly under construction.

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Thesis: Quinua or Quinoa? Transformation, certification, and the contestation of the commodity chain on the Bolivian altiplano

Louisiana State University, Baton Rouge, Louisiana
Bachelor of Arts, International Studies
2015
Regional focus Latin America and Concentration Environment and Development

TEACHING EXPERIENCE

2015 – 2017
Teaching Assistant, Syracuse University,
Physical Geography, 3 semesters, 150 undergraduates
Responsible for teaching three discussion sections once a week, grade tests, and write quizzes.

Teaching Assistant, Syracuse University,
Environment and Society, 1 semester, 170 undergraduates

RESEARCH EXPERIENCE

2012-2013
Work Study Student Assistant, Louisiana State University
Assisted a professor in the Geography department at LSU transcribing interviews collected from the field.

INVOLVEMENT and LEADERSHIP

2015 – 2016
Graduate Representative, Syracuse University
Liaison between the graduate students and faculty, take minutes at faculty meetings, and organize graduate student meetings.

2015 – Present
Supporting Women in Geography, Syracuse University
Member of the Geography Department's SWIG chapter supporting women, queer, and feminist interests in academia.

2014 – 2015
International Studies Society, Louisiana State University
Treasurer of Louisiana State University's chapter of the national honors society for International Studies Majors.

2013 – 2015
Student Worker, Louisiana State Univeristy
Worked in Middleton Library Government Documents Department assisting patrongs in utilizing microfilm and microfiche machines, locating documents, and checking out discharged materials.

2011 – 2015
Student Athlete, Louisiana State University
Athlete on Louisiana State University's Track and Field team

CONFERENCE PARTICIPATION

2017
Association of American Geographers Conference
Poster presentation of thesis research

2015
Circuits of Justice Workshop, Pennsylvania State University
Presenter

2015
Nature and Society Workshop, Cornell University
Attendee

HONORS

2012 – 2013
Academic Excellence Award for the College of Humanities and Social Sciences, Louisiana State University

2015
Wally Pontiff Jr. Academic Excellence Award,
Louisiana State University
Awarded to the top four highest GPAs among all student athletes

2013
Women's Academic Achievement Award,
Louisiana State University
Awarded to the woman on the Track and Field team with the highest GPA in addition to outstanding athletic achievements