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**The last llamero: Development and livelihood changes in the high Andes**

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**The last llamero: Development and livelihood changes in the high Andes**

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**Thesis**

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## **Dedication**

This thesis is dedicated to the community of Pampa Aullagas. Without their generosity and support, this research would never have been possible. To Apolinar and Florinda for welcoming me like family. To Angir, Brian, and Johan for showing me how to meet every day with a smile and laughter—your strength humbles me.

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## **Abstract**

### **The last llamero: Development and livelihood changes in the high Andes**

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The University of Texas at Austin, 2012

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Since the mid-2000s, the production of the pseudo-cereal quinoa (*Chenopodium quinoa*) for export has increased due to growing demand in the United States and Europe. To meet demand, many of those living in the Bolivian high plateau or *altiplano* have transitioned from traditional livelihood strategies to commercial quinoa production oriented at the international export market. The following looks at how Bolivians living in the community of Pampa Aullagas have adapted to commercial production by looking at three vignettes of different actors living in the community. Looking at traditional agropastoralists, teachers, and modern producers, this thesis seeks to understand the nuances and complexities associated with integration into the global export market.

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## Forward

My initial interest in quinoa production in Bolivia was sparked by a January 2011 article on National Public Radio.<sup>1</sup> The article addressed how the increased demand for quinoa in the United States has encouraged many farmers in Bolivia to begin production for commercial purposes. This has raised questions about environmental degradation and Bolivians' access to quinoa for consumption in the future. I found the article intriguing, not because I was a consumer of quinoa, but because quinoa appeared to occupy a unique niche in U.S. consumer culture. Its promotion as a health food by stores like *Trader Joe's* and *Whole Foods Market* indicated that it was not marketed to the average consumer. Instead, it seemed to be directed to an emerging group of health conscious consumers, choosing natural foods and whole grains over the processed foods that have become ubiquitous across the country.

The Fair Trade, Organic, and Objective Carbon Zero labels on the packaging indicated that it was meant to appeal to the moral values of this same consumer class. While I had seen these labels before on coffee or bananas, their appearance on quinoa packaging seemed to have a different tone, one that was more about marketing than eliminating exploitation (as in bananas, coffee, or chocolate). In this sense, quinoa came across to me as a 'feel good food' aimed at an elite and educated consumer class, allowing the consumer of quinoa to take a moral high ground on their consumption choices: it was not only healthy for them, but the labels indicated that it was also healthy for the environment (Organic) as well as healthy for the producers (Fair Trade).

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<sup>1</sup> See Murphy (2006): *Demand for Quinoa Creates Boon for Bolivian Farmers*.

<sup>2</sup> These products were found at Whole Foods located in Austin, Texas in April 2011. Three of the products were advertising the whole quinoa seed and two were advertising gluten free pasta (ironically, quinoa was not even the first ingredient).

What I found problematic with the emergence of quinoa into popular culture, was that it paid little attention to what was happening on the ground in producing regions. The labels that adorned most packages led the consumer to believe that paying a premium for Fair Trade or Organic would remedy any of the negative consequences associated with their actions as consumers. At the time, I still knew little about the subject and could not accurately speak for consumer habits, but was familiar with consumer attitudes regarding Fair Trade and Organic from previous years spent working in the coffee industry. I had found that consumers cared more about the idea of the label than they did about the reality of its impacts where it was produced. In this sense, my original intent was to unpack these labels and expose what I liked to call the ‘seedy underbelly of Fair Trade.’ Rather than focusing on quinoa, I could use it as an organizational device to tell a bigger story of exploitation, neo-colonialism, and dependence. As one would expect, this goal became far too large a project for a Master’s thesis, especially considering my minimal knowledge on the subject of consumer habits, labeling processes, and quinoa production.

As a result of this complexity, this thesis has undertaken a strikingly different tone. While I do touch on the labels found on the packaging and consumer attitudes, this only functions to introduce the subject, serving to contextualize quinoa within our own lives. The majority of the thesis looks at vignettes of actors and how their lives were, are, or could be impacted as a result of expanded quinoa production for export. Taking this approach, I illustrate some of the everyday details of life for different actors, looking at eating, community, food production, and transportation, as I find that each detail is somehow significant in the wider context of development and consumption. I hope that analyzing the topic in this manner allows the reader to come to their own conclusions based the details that I have shared.

That being said, my interest in the subject does stem from contradictions that I see within the emerging trend towards capitalism with moral values. At times I may seem overly critical of development and consumer culture. I have based the following on extensive field notes and photographs compiled during my research in the small Bolivian community of Pampa Aullagas. The details that I share are not intended to romanticize traditional lifestyles, but to illustrate details that were important to the people that I met while doing my research, leaving it up to the reader to interpret these narratives on their own.

## Chapter 1: Introduction

Inca Power Fuel, Soul Food of the Andes, The Mother Grain, Andean Dream, Ancient Harvest, Fair Trade, Organic, Supergrain, Objective Carbon Zero. These are just a few of the labels found on packages of quinoa products on shelves of a local grocery store.<sup>2</sup> For some, the simple act of looking at these labels makes them part of a larger world with a deeper history, perhaps conjuring images of Incan Warriors, shamans, or snowcapped peaks; others still might read into them a different way, choosing to see the environmental justice, social equity, or nutritional benefits associated with the value added Fair Trade or Organic denominations (Goodman, 2004; Moberg, 2005; Fridell, 2006; Jaffee, 2007; Watson, 2007; Schreck, 2010). From our vantage point as consumers at the supermarket shelves, assessing the true nature of what is in front of us is difficult. The myriad certifications cause what Shreck (2010) calls ‘label fatigue.’ Additionally, what we see on the labels can often conflict with what the media tells us. Such is the case with quinoa, where a March 2011 article in the New York Times titled *Quinoa’s Global Success Creates Quandary at Home* reported some of the negative externalities associated with the rise of quinoa’s popularity (Romero, 2011). By reading into labeling, marketing, and media, we can build an identity of food; this identity however, is inherently intertwined with our own values and the way that we choose to see the world and other narratives do exist.

To the naked eye the small and slightly asymmetrical shape of quinoa<sup>3</sup> makes it appear much more like a grain than the seed that it really is (Figure 1). More closely related to spinach and beets than the amaranth that it resembles, it was domesticated in

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<sup>2</sup> These products were found at Whole Foods located in Austin, Texas in April 2011. Three of the products were advertising the whole quinoa seed and two were advertising gluten free pasta (ironically, quinoa was not even the first ingredient).

<sup>3</sup> *Chenopodium quinoa*

the highlands of the Andes. To those who have depended on quinoa as an essential food source for the past four thousand years, it is known as *chisiya mama*, the Bolivian Quechua term for mother grain (National Research Council, 1989). The Quechua term and association with the mother is fitting considering quinoa's nutritional content: quinoa contains a complete set of amino acids, high fiber, and high quantities of both vitamins B and E (Table 1). Both NASA and the Food and Agriculture Organization of the UN (FAO) consider it to be a *superfood* due to its high nutritional content.



Figure 1: Rainbow quinoa, threshed and ready for the market.

Since the quinoa boon began in the mid-2000s, quinoa has sprung up in restaurants, food carts, and grocery stores across the country. To the international

consumer, quinoa may come across as the ultimate moral food: production is often labeled as both fair trade and organic, playing on consumer desire to become a part of what Goodman (2004) calls the “transnational moral economy.” Other consumers are perhaps further inspired by the recent ‘real’ food movement, promoted and championed by such prominent authors as Michael Pollan and Wendell Berry.<sup>4</sup>

<b>Amounts Per 1/4 Cup (uncooked)</b>				<b>%</b>
<b>Serving (185 grams)</b>		<b>% DV</b>		<b>DV</b>
<b>Calories</b>	222	11%	<b>Thiamin</b>	0.2 mg 13%
From Carbohydrate	157		<b>Riboflavin</b>	0.2 mg 12%
From Fat	32		<b>Niacin</b>	0.8 mg 4%
From Protein	32.6		<b>Vitamin B6</b>	0.2 mg 11%
<b>Total Carbohydrate</b>	39.4 g	13%	<b>Folate</b>	77 mcg
Dietary Fiber	5.2 g	21%	<b>Calcium</b>	31.5 mg 3%
Starch	32.6 g		<b>Iron</b>	2.8 mg 15%
<b>Total Fat</b>	3.6 g	5%	<b>Magnesium</b>	118 mg 30%
<b>Protein</b>	8.1 g	16%	<b>Phosphorus</b>	281 mg 28%
<b>Vitamin A</b>	9.3 IU	0%	<b>Potassium</b>	318 mg 9%
<b>Vitamin E</b>	1.2 mg	6%	<b>Sodium</b>	13.0 mg 1%
			<b>Zinc</b>	2.0 mg 13%
			<b>Copper</b>	0.4 mg 18%
			<b>Manganese</b>	1.2 mg 58%
			<b>Selenium</b>	5.2 mcg 7%

Table 1: Quinoa nutritional facts (USDA, 2008)

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<sup>4</sup> The popularity of Michael Pollan’s books, *The Omnivores Dilemma* and *In Defense of Food*, as well as Wendell Berry’s *Bringing it to the Table* are characteristic of the United States’ renewed fascination with whole foods and understanding the provenance of foods purchased. While these books are not the sole reasons for the moral health food fascination, they reflect and influence new trends in US consumer choices.

With organic quinoa's rapid surge in appeal in North America, Europe, and Japan (NACLA Report on the Americas, 2007; Flores, 2012), many farmers in the *altiplano*, or high plains, of Bolivia and Peru have chosen to transition from production for subsistence and domestic consumption, to expanded production oriented towards the export market (Laguna, 2000; Hellin, 2003). Market participation has come as a result of a changing development context and economic incentives offered by changing consumer demands. Farmers, who once participated only minimally with the global market, are becoming integrated socially and economically, increasing their susceptibility to oscillations of the world economy (Damman, 2008; Jacobsen, 2011). With market integration comes a panoply of impacts, some of which can be seen in a positive light, others in a decidedly negative one. On the one hand, the new interaction with the global economy has given impoverished rural populations new access to capital, and has allowed people to purchase a wider variety of foods and goods that were once inaccessible, raising their standards of material living (Godoy et al, 2011; Winkel et al, 2012). However, from a different point of view, the increasing export of quinoa can be seen as a development that undermines indigenous solidarity, disrupts traditional cultural practices, damages delicate ecosystems, and causes dietary changes (Hellin, 2003; Damman, 2008; Jacobsen, 20011). From this perspective, critics see market integration as making Andeans rely on extractive exports and once again becoming dependent on the unstable consumer markets of the North, thus repeating a recurring theme in Bolivia's history (Cook, 2004; Morales, 2010).

What follows is an attempt to explore how rural Bolivians have adapted to the changing global social, political, and economic climate. Using the commercialization of

quinoa in the Bolivian altiplano as a thread in the complex fabric of globalization, the intent of this thesis is to look at some of the diverse and unique ways that global processes impact various stakeholders. I aim to do so by presenting three ethnographic narratives of distinct actors in the indigenous community of Pampa Aullagas and describing what residents say that life used to be like prior to the export of quinoa. First, I will share the perspectives and practices of a traditional *llamero* (or llama herder), who still remains largely exogenous to the global cash economy (Postigo, 2008). My second ethnography will look at the lives of teachers in Pampa Aullagas. They can be viewed as people with a partial connection to the new quinoa market. Their livelihood strategy is mixed, and relies neither on subsistence nor export oriented production. Almost as though they are outsiders looking in, teachers offer unique perspectives of the livelihood changes that have occurred and how the community has adapted to the stresses these changes have caused.

In contrast with the *llamero*'s narrative, the final vignette will illustrate the views of the commercial quinoa producers in the region, most of whom have only begun production for export outside of the community within the last 5-10 years. The thesis will then conclude with a brief discussion of how quinoa, as a development mechanism, has impacted those living in Pampa Aullagas, changing everything from environment and ecosystems to culture and diet. In this final discussion, I consider to what extent these changes are new and unique to the neoliberal development regime, and to what extent they mirror past cycles of dependency and unequal relationships with external actors. Informed by deep ethnography and explorations of everyday strategies and lives, I

believe that a balanced and thoughtful account of the transformations that are happening can be achieved, and will provide insight into possible implications for the future.

## **RESEARCH AREA AND METHODOLOGIES**

Both the name of a town and a *marka*, Pampa Aullagas—or Pampas, as it is known colloquially—is located in the Bolivian Department of Oruro in the province of Ladislao Cabrera (Figure 2). Coming from traditional Aymara and Quechua social and political organization, *marka* is a unit organization made up of smaller *ayllu* units. *Ayllus* are fictive kinship groups or “geographically widespread endogamous clans” (Knapp, 1992: 7; Fabricant, 2010). The region, which surrounds the Salar de Uyuni, is considered by many Bolivians to be the *quinoa real* capital of the world. Quinoa real or royal quinoa, is the most typical variety for export, and is characterized by its large white seeds (Astudillo, 2007). Although Pampas is located within this region, their production of quinoa at the export level has only begun in the past 5-10 years, where districts to the south such as Salinas de Garci Mendoza, have been integrated both domestically and internationally for several decades. Given Pampa Aullagas’ proximity to Garci Mendoza, it is a wonder that Pampas has not entered the commercial market until recently. While quinoa production in Salinas has been well documented since it began commercial production in the 1970s, little research has been done on the agricultural systems of Pampas Aullagas (Figure 3) (Saravia, 1988; Soto, 2006). Salinas has made a transition to near complete dependence on quinoa production—as Pampa Aullagas enters the market, it will be interesting to see if they follow similar development patterns of Salinas. Documenting Aullgeño narratives as they make the transition can serve as a baseline for future studies.

# Plurinational State of **Bolivia**



Created by: Jonathan A. Gehrig  
Data source: ESRI (2012)  
Projection: WGS 1984  
Map created: April, 2012

Figure 2: Map of South America and the Plurinational State of Bolivia.

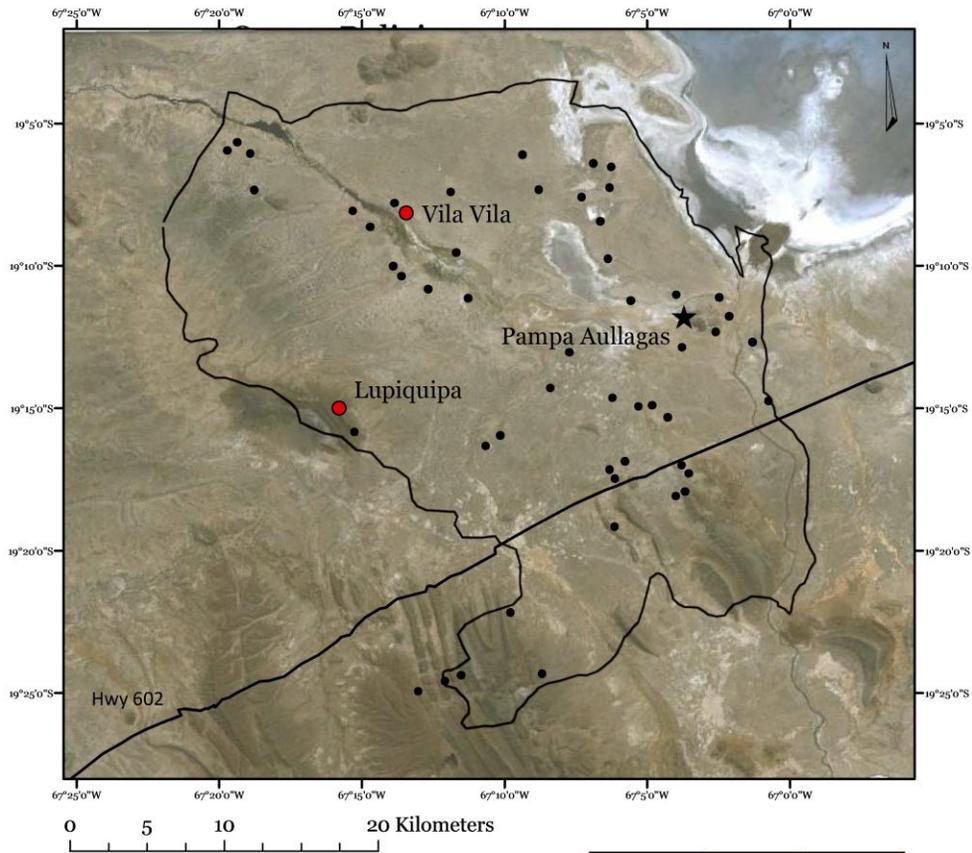
The marka Pampa Aullagas consists of 56 *estancias* scattered across an area of roughly 30 square miles (Figure 4) (Ministerio de Desarrollo Rural, Agropecuario y Medio Ambiente, 2006). An *estancia* is a small group of families living on the periphery of a larger community hub; they are often agriculturalists. Directly to the north lies Lago Poopó, a shallow saline lake connected to Lake Titicaca through a series of aboveground and hidden rivers, the largest of which is the Río Desaguadero. Sixty miles to the south and barely visible on a clear day is Cerro Tunupu, which marks the northern most tip of the Salar de Uyuni, the largest salt-pan in the world. The region has a tropical wet-dry climate, and suffers from floods so extreme during the warmer summer months (November–March) that travel to the community and even nearby *estancias* becomes all but impossible (Jacobsen, 2003). Average annual precipitation is around 350mm (Ministerio de Desarrollo Rural, Agropecuario y Medio Ambiente, 2006). The winters (May-August) are arid and extremely cold, often seeing temperatures below negative 10 degrees Celsius and as high as 20 degrees Celsius, although the average temperature is far less extreme (Ministerio de Desarrollo Rural, Agropecuario y Medio Ambiente, 2006; Jacobsen, 2011; Winkel, 2012). The severe environment is further complicated with its high elevation, ranging from 3,200-4,200 meters above sea level, which means there are only 100-160 frost-free nights throughout the year (Jacobsen, 2011). All of these factors combined make the cultivation of typical lowland crops such as maize, wheat, and rice difficult. As a result, residents in the region depend on crops that are largely resilient to extreme cold, and are well adapted to the short growing season, as well as the well-drained saline soils. Among the crops that are practical for cultivation include quinoa, oca, potato, onion, and maize, although the majority of production has been limited to quinoa and potato landraces (Jacobsen, 2011; Jacobsen et al, 2007; Rosa et al, 2009).



Figure 3: Looking at Pampa Aullagas (middle left) from the south. It is located at the base of the hill, Pedro Santos Willka.

According to the 2001 (INE) census which was the most recent information available, nearly 3,000 people claimed partial residency of Pampa Aullagas, 525 of claiming to live within the municipality itself. Spanish and Aymara are the dominant languages (45 percent of those interviewed in 2001 spoke both) while Quechua remains a minor language. Nearly all of those from Pampa Aullagas—who are known as Aullgeños—identify as Aymara, Quechua being the dominant minority group accounting for just over two percent of the population. In the community, most families own their own homes, most however sharing access to water through wells with their neighbors.

# Marka Pampa Aullagas



Created by: Jonathan A. Gehrig  
 Data source: ESRI (2012); Google (2012);  
 Ministerio de Desarrollo Rural, Agropecuario,  
 y Medio Ambiente (2006)  
 Projection: WGS 1984, UTM Zone 20S  
 Map created: April, 2012

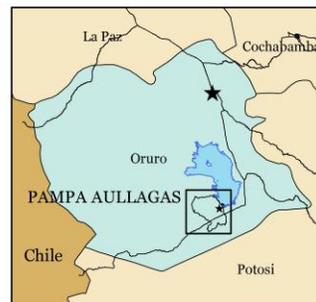


Figure 4: Marka Pampa Aullagas and Surrounding Estancias. Province of Ladislao  
 Cabrera, Department of Oruro, Bolivia

Pampa Aullagas was chosen for several reasons. As a small community, it is optimal for understanding how global processes impact individual places. According to Zimmerer, such ‘locale-specific scale’ is ‘necessary for illuminating the basic inter-connections along the gradient of scales that range from extremely local to fully global’ (Zimmerer, 2007:10). The study of such a small community can serve as a snapshot in time. Its late entry into the quinoa market has required that the farmers transition rather rapidly from low production for familial subsistence, to full commercial production involving tractors and plows—and this transition is still occurring. Pampas also provides contrast, since some community members are still not connected to the quinoa market and continue to rely on more traditional livelihood strategies, including llama herding and subsistence food production strictly for family consumption. Lastly, Pampa Aullagas was only given official titling to their lands in 2006 as a Communal Indigenous Territory (TCO). As a result, their ability to produce on a commercial level or get loans to begin production has been limited in the recent past.

In order to sort out the subtleties and nuances of how quinoa production has impacted the community as a whole, my time in Pampa Aullagas was spent living and participating in the livelihood activities of a variety of actors. These lives will be discussed at length in subsequent sections as vignettes to describe daily livelihood activities. Written much like an oral history, the use of my vignettes serves to move beyond existing assumptions about the benefits and consequences of quinoa production and to develop a more meaningful and diversified understanding of the complexities at hand (Harvey, 2005). According to Wiles (2005) narrative analysis can help the geography researcher to interpret the situated experiences of different actors, whether individual or group. The use of narratives has been successful in other geographical work. Lawson (2010) uses migrant stories to address more complex issues of identity,

neoliberalism, and social relations. For Lawson (2010: 174) “stories are also informative theoretically, as their expressions of ambivalence about their experience of modernity reveal the contradictions embedded within modernization itself: contradictions that are rarely voiced in ruling-group discourses.” Using narratives in this thesis also allows for the actors involved to some extent direct the research themselves, showing me what they as important in their own community. The style in which the vignettes are written is deliberate and aims to insert the reader into the individual lives of people actually living on the ground, to—in the words of Carl Sauer—“convey to the reader the feel of the horizon, sky, air, and land” (Sauer, 1956: 298). It is my hope that such an approach will allow the reader to understand the complexities and nuances of the situation and to give them a personal stake in the changes that are happening on the ground.

In addition to the time I spent with individual families or ayllus, my time was spent (whenever possible) participating in community activities. I attended plays, concerts, and presentations put on by the local school. This served to enhance my own understanding of how the community functions at an aggregate level. I attended meetings with three of the six ayllus, which helped to build an appreciation for the diversity of each clan. Like my attendance at marka activities, my attendance at Ayllu meetings also built on my understanding of how the community functions on a spectrum from individual to marka level. It also helped me to understand how it functions within the broader context of Oruro. These meetings were often sponsored by various NGOs, both domestic and foreign, and gave me an insider perspective on how each group sees change, often depending on the resources associated with each ayllu’s geographical location. I attended one agricultural fair (*La Feria de Quinua*) where different estancias displayed their own development plans. At the fair, ayllus competed for a grant sponsored by the Bolivian Ministry of Agriculture. The criteria for winning was based on

a variety of factors, including how the group planned to dually preserve cultural traditions and natural resources while increasing their productive capacity (in all but one situation this was associated with the increase of quinoa cultivation). I also attended various soccer games as well as numerous community festivals, including the *Año Nuevo Aymara*, *Corpus Cristi*, and *Dia de la Madre*. All of these experiences helped me build an understanding of the community and its complex dynamics. My time spent in Pampa Aullagas was limited to six weeks; as a result what I have learned is only the beginning of a far more complex history involving a multitude of environmental and cultural dynamics. Spending additional time throughout the year would have been useful, and would have allowed me to observe changes that happen seasonally as the community shifts from harvest in the winter, to planting in the spring.

In this thesis I use an actor-based approach (Knapp; 2010). This allows analysis of how different actors or actor networks function in a specific location at a specific time, utilizing Vayda's (1983) concept of progressive contextualization. As it is based on the rationality principle, this method assumes that each actor chooses his actions based on chains of logic and provides a 'commonsense' way of seeing the world (Vayda, 1983). In seeing how integration into the global quinoa market has impacted the various lives of those living in Pampa Aullagas, this method allows us to see that range of complexities at hand in determining livelihood activities.

Another key method to this thesis is participant observation. As a core methodology of ethnographic research, participant observation assists the researcher to fully consider the positions of each individual and group to "empathetically consider the perspective(s) of the people one is working with." (Cook, 2006: 660). The primary utility of participant observation is that it functions well for informal interviews and direct observation, allowing one to both discover hypothesis as well as to test them. Participant

observation also proves useful to the single researcher with little funding, as it is labor intensive rather than capital intensive. This permits the lone researcher to gather a large amount of data at relatively little cost (Gann, 1999). These qualitative data collected in Bolivia between May and July of 2011 through these methods will be combined with quantitative information when necessary, including available statistics from the FAO, USAID, and producer cooperatives. Empirical data from these sources will serve to contextualize the perspectives and opinions gathered from informants.

## **Chapter 2: Background**

Bolivia's economy, like many economies in Latin America, is extractive in nature. Although the geographic location of Bolivia within the Andes gives it great mineral wealth, historically little of it has benefitted the country as a whole. The history of this extractive economy dates back to the arrival of the Spanish in the 16<sup>th</sup> century and has played an elemental part in Bolivia's development history until present. Initially, this extractive nature was played out predominantly with mining (nearly 70 percent of GDP during WWII was directly associated with the tin mining industry) however more recently the extractive economy can be considered to include agriculture as well.

This thesis does not focus on traditional extraction such as mining, but sees extraction through agriculture as an increasingly important theme in the development of the country. Although the Andes have been productive agriculturally for thousands of years (Knapp, 1982; Orlove, 1985, Erickson, 1989) production was not historically oriented towards export like the eastern lowlands whose fertile soils and flat terrain are well suited for mechanized agriculture. Valdivia (2010) notes that the department of Santa Cruz is the 'economic engine' of Bolivian agriculture, where rice, wheat, sugar, soy, and cattle are produced both for export as well as domestic consumption. Much of the recent literature that has been published on agriculture in Bolivia, has thus focused on the lowlands as this is where the majority of commercial production takes place (Valdivia, 2010; Killeen, 2008; Reynolds, 2004). The domination of agricultural development in the eastern lowlands has in a sense, left the country divided: the productive lowlands have mechanized and expanded production for export, while the highlands of the Andes still largely rely on subsistence production and traditional techniques. This divide is nothing new, and has been characteristic of Bolivia since the

Iberian conquest (Jamieson, 2005). Today, Bolivia can be characterized as two separate countries, with larger mestizo populations and increased development in the east around Santa Cruz and indigenous Quechua and Aymara people living in the Andes around Potosi, La Paz, and Oruro.

These inequalities have not only shifted attention away from the feasibility of commercial agriculture in the Andes, but it has also reorganized Bolivian labor, causing migration from the impoverished highlands to lowland valleys where extra labor for cane and soy production were needed (Fabricant, 2010). While those living in the Andes have always been marginalized and characterized as backwards or racially inferior, the focus on agriculture in the east exacerbates the development gap between the Andeans and their lowland counterparts (Paulson, 2006). In this context, the production of quinoa—which is historically associated as an Andean food and only associated with the indigenous poor—has become a unique opportunity for development (Rodriguez Alegria, 2005).

As a result of their removal from the global commodity trade, many rural Andeans have relied on traditional systems of trade that dates back centuries. Systems of vertical ecological integration rather than markets based on money have been essential to the region (Murra, 1968; Orlove, 1985). Food crops from three distinct agricultural regions (lowlands, coast, and highlands) were traded based on complex ayllu relationships (Brush, 1976). Here, salt and llama meat from the highlands would be traded for coca, sugar, or fish acquired from other production zones. This complex system of verticality provided complimentary foods to those living in different regions, and functioned based on a complex non-economic market systems organized around ayllus and reciprocal labor known as ayni and mink'a (Fabricant, 2010; Klein, 2011).

The communities of the marka Pampa Aullagas have maintained similar systems of trade for goods and money up until recent decades. Where Murra (1968) and Orlove

(1985) describe Andean trade circuits based on long distances spanning from coast to Amazon, those living in the altiplano have relied on medium distant trade for the diversification of diet. For the communities surrounding Pampa Aullagas, temporal migration and trade provided money and food through mine labor and salt and llama trade.

Perhaps more unique to Pampa Aullagas than temporary migration as mine labor is the llama train. The medium distance trade circuit of Pampa Aullagas relied on llamas to transport salt blocks from the Salar de Uyuni to the south, to the valleys to the northeast near present day Cochabamba. As is detailed by Molina Rivero (2006) trade was based on ayllu organization, each sending several llama trains consisting of around 60 llamas on a five day journey to the salt flat. Llamas would be loaded with salt blocks weighing between 20 to 30 kilos. Then, loaded trains would make a month long journey to the valleys. Once in the valleys, llameros traded bricks of salt for a variety of goods, including coca leaves, maize, and sugar. Extra llamas not needed for the journey back to Pampas were also sold or traded. Spending two to three weeks in the valleys, the llameros headed back to Pampas Aullagas, another long journey requiring three to four weeks to complete. The last of these llama trains involved in the trade made their final trip in 1997.

Through the salt trade, Aullgeños have long been a trading community. Even now, as llameros no longer participate in the salt trade, they are still connected to the wider market, selling llama meat, leather, and wool as needed to pay what few bills they have. As roads have improved, buses have replaced llamas, but trade still remains largely face to face and is only minimally connected to the market.

The politics of Bolivia have impacted communities in the altiplano in unique and diverse ways. As was mentioned earlier, indigenous Andeans (or los andinos, which has become a pejorative term) have suffered marginalization from the populations in the

lowlands of Santa Cruz. While there have been agricultural reforms in the past, aiming to overturn the large estates created by the Spanish, a majority of this was limited to the lowlands in the Agrarian Reform Decree of 1953 (Valdivia, 2010; Kohl, 2003; Zimmerer, 1993). It wasn't until the early 1990s under the administration of Gonzalo Sanchez de Lozada (Goni) that these reforms reemerged. Under what was called the *Plan de Todos*, land reform that was considered incomplete under the 1953 agrarian reform was continued through the Law of the National Institute of Agrarian Reform or Ley INRA (Kohl, 2003). The 1996 law, which was designed to give indigenous communities the opportunity to claim Communal Territory of Origin (TCO); however, corruption and a lack of transparency within the Goni administration kept Ley INRA from titling the majority seeking reform (Schaick, 2008). Pampa Aullagas did not receive land titling until 2006 under the administration of Evo Morales (Ministerio de Desarrollo Rural, Agropecuario, y Medio Ambiente, (2006). While lands had always been managed by the six ayllus in the region, titling granted both ownership and governance of the roughly 65,000 Ha to the Marka Pampa Aullagas and its six ayllus (Sacatiri, Collana, Taca, Gihuapacha, Suctita, and Choro).

More than five hundred years since the arrival of Europeans in the country, today's social and political organization in the southern Altiplano is a hybrid of pre-Colombian and Spanish tradition. In Pampa Aullagas, ayllu organization remains—albeit in a smaller scope—alongside the typical colonial political structure. The marka Pampa Aullagas, which was once part of the larger organization of the señorío Quillacas. Each year, ayllus choose one person who will serve as the autoridad (or authority) for the year, someone who is entrusted to make decisions to best suit the needs of his ayllu. The six Jilaqata, together with the Cacique Territorial of Aullagas (who also changes yearly based on a rotation between the six ayllus) make decisions on such things as how best to

approach development (tourism, commercial quinoa production, llama rearing) as well as dividing up communal lands to individual families. This traditional organization is combined with a municipal government that is characteristic of Spanish colonialism; these include a Corregidor and Alcalde (mayor), the former serving as the liason between Autoridades and Cacique, while the latter's role functions quite like that of the modern day mayor (Salvatierra, 2006).

Receiving official title to communal indigenous lands under Ley INRA has been instrumental in the recent development opportunities that Pampa Aullagas has had. Earlier development strategies were largely foreign based, the Peace Corps having played a role in the construction and maintenance of water pumps off and on until 2003. As a TCO however, Pampas has seen an influx of Non-Governmental Organizations (NGOs) and national aid agencies. National government aid has been oriented at education and health reforms, many of them associated with broader reforms of the Morales administration since 2006. These include the *Bono Juancinto Pinto*, which allots families Bs 200 per year for each child attending school between first and sixth grade. This also includes the Bonosol, which gives Bs 248 to Bolivians 65 and older (Muller, 2008). Much of the development by NGOs has been recent, with an emphasis on the commercial production of quinoa as a development mechanism. While NGOs and government development agendas are a significant part of Pampa Aullagas' development, especially considering the turn to quinoa production, they will not be the focus of this thesis, but deserve mention to understand the complexities at hand.

### **Chapter 3: Murmurs from the pampa and visions of the past**

Many researchers studying the impacts of globalization on rural Latin Americans have focused predominantly on those actors directly connected to the global commodity chain, such as farmers, middlemen, and politicians (Ofstehage, 2011; Jenkins 2011; Laguna, et al 2006; Jaffee 2007). Useful in identifying actors within a food chain, these trade-centric approaches provide little insight into the diversity of lives that are impacted through the complex processes of globalization. As a result, the vignettes that follow are in part a response to Cook et al.'s (2006) plea for geographers to research the diverse lives of real people, and in part an attempt to make our research more vivid so that it has the ability to resonate with those both inside and outside academia.

The first vignette is that of a traditional llamero, or llama herder. The importance of beginning with the life of the llamero is that it offers us a starting point to understand the way that things once were in the community of Pampa Aullagas. Different from the pure pastoralist who is most often associated with Africa, Asia, and Europe (Postigo, 2008; McCabe, 1990; Shahrani, 1978; Webster, 1973; Murra, 1968) the llamero of Pampa Aullagas can be considered an agropastoralist, where cultivation of subsistence crops and herding form parts of an integrated livelihood. Until the mid-1990's, the pastoralist has had a dual role, providing both a means of traditional subsistence as well as a mechanism of trade with regions to the south (near the Salar) and east with the fertile valleys near Cochabamba and Sucre (Browman, 1974; Molina Rivero, 2006). As a means of subsistence, llamas provided not only a source of protein, but also a source of fertilizer, wool, and leather (Markemann, 2009; Iñiguez, 1996). It is important to note here the centrality of the llama in the everyday life of the Pampa Aullageño—its role as a trading mechanism, source of food, and provider of fertilizer to replenish the soil, have

made the llama the historical hub of life in this region (Markemann, 2009). Considering this, it is not surprising that the llama is still a symbol of health in the community. Even today, the camelid is present at nearly every community event—dried llama fetuses are burned as sacrifices to the *pachamama*. Roughly translated as *earth mother*, the pachamama is the feminine spirit of the earth. It is believed that taking care of the pachamama will result in the pachamama taking care of producer fields and family health. During harvest festivals as blessings and a live llama is often sacrificed at sunrise during the Aymara New Year to bring Aullgeños a fruitful harvest (Figure 5). The llama continues to be a sign of fertility. Dried llama fetuses are sold at nearly every market in the Altiplano and are used in numerous festivities, many of which were witnessed during research. The llama is not unique to Pampas. Canessa (1998) notes the ubiquity of the llama and need for wool, fetuses, and fat for spiritual purposes all across the broader Andean region, illustrating its role in both economic and spiritual realms.



Figure 5: A dried llama fetus is prepared for ceremony by Taka ayllu leaders.

For the purposes of this thesis our typical llamero will be known as Roberto and while problematic to suggest that his life is typical, Roberto's life does reflect common practices within the community of Pampa Aullgas. This short vignette of Roberto's everyday life during the harvest is based on a weekend of conversations and observations. In order to better contextualize the practices that he follows and the opinions that he espouses, I have drawn on the other conversations and opinions of sheep and llama herders, and will reference these interviews where appropriate. My weekend spent with Roberto was at the beginning of June in his estancia just northwest of the community of Pampa Aullagas.

To arrive at the llamero's house is a chore in and of itself. Like many Bolivians living in the remote altiplano, the lack of transportation is a chief difficulty, impacting everything from communication between populations to development opportunities. For Roberto, a 56-year-old llama herder, it is a 25-kilometer commute between the community center of Pampa Aullagas and Vila Vila, the estancia—or small village—where the llamero spends the majority of his time. The trip, which he makes between four and five times a week, is made on a single-speed bicycle labeled 'Phoenix.' It is a bulky machine imported from China that is ubiquitous in the central altiplano. Bicycles, which were once a more common method of transportation between estancias are now generally associated with the poor and their mechanical condition is typically less than sound. Depending on the wind and the load, this journey takes between two and three hours of riding on a combination of rudimentary roads, sandy trails, and paths cut through the dense *tola*<sup>5</sup> and *yareta*<sup>6</sup> of the pampa. As cars and other mechanized transport are fairly new, many of the routes that are commonly used follow old walking or llama train paths. Many of the roads that do exist are often too sandy to use with bicycles and are thus avoided. His cargo, can be seen wrapped in a brightly colored blanket and fixed to the rack over the rear tire. As Roberto grows his food and raises his herd of llamas in the estancia of Vila Vila, he often transports food from Vila Vila to Pampas, which frequently consists of as much as the meat of half a llama (weighing upwards of 34 kilograms) or a half quintal of potatoes.<sup>7</sup> On weekends—when school has been let out—

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<sup>5</sup> Tola (*Parastrephia lepidophylla*) is a hearty and wind resistant shrub that is common in the area and resembles North American sagebrush; it is typically used for cooking fuel wood (*leña*) and for fodder for llamas.

<sup>6</sup> Llareta (*Azorella yareta*), an evergreen perennial is another historical source of fuel wood, growing compactly and close to the ground. It is estimated that this plant only grows at a rate of 1.5cm per year (Kleier, 2004).

<sup>7</sup> One quintal can signify 100 kg or 100 pounds, depending on the geographical context. For the purpose of this paper, one quintal is the equivalent of 100 pounds or 45 kg.

his cargo is often matched by the weight of his youngest daughter, who takes her position balancing precariously between the handlebars on the front of the cycle.

Due to the lack of sufficient pasture surrounding the municipality of Pampa Aullagas, most llameros are relegated to maintaining their herd in locations where there is readily available water and bountiful *leña* (firewood) and other shrubs. For the older llameros, living in remote corners of the Marka is preferred; however, those with children are burdened with finding a way to divide their time between their rural estancia and the municipality in order to maintain compliance with the state requirements for education. As Roberto notes, splitting his time between his family and his herd gives him little free time in which to think about changing his livelihood. In a sense, once a llamero, always a llamero. Even though becoming more integrated into the global economy is not possible, Roberto sees his position in the community as one of great importance—without the llamero, there would be no fertilizer for the quinoa fields, no local source of llama meat for resident consumption, and nobody to pass along the generations of traditional knowledge about the llama and its importance in maintaining ecosystem balance.

Although the majority of pastoralists in the altiplano typically self-identify as llama herders, most llameros tend to rear some sheep<sup>8</sup> alongside their camelids. This diversification offers several advantages: it allows them to sell both llama and sheep in times of economic hardship, provides them with a degree of variety in their diet (however most prefer the lean llama meat to the greasy meat of sheep), and allows them to utilize a variety of grazing areas. Roberto is no different—his 170 head of llama are accompanied by around 30 sheep that graze the shallow valley near his home (although he did admit

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<sup>8</sup> *Ovis aries*

that the sheep have become a bit of a nuisance, requiring several visits a day to ensure that they have not wandered too far onto other herder's territory).

Whereas the nomadic pastoralist relies solely on their herds for subsistence, whether it is from foods provided by the animals themselves (as butter, milk, meat, and wool) or food acquired from the trading of the animals with agriculturalists (Dyson-Hudson, 1980), the agropastoralist maintains herds alongside of agriculture in an integrated system. While the herders of Pampas identify as llameros first, their subsistence is primarily based on agricultural production and only secondarily on herding, a phenomenon that has been noted elsewhere in the Andes (Browman, 1974; Webster, 1973). Aullgeño agropastoralists thus rely on several traditional crops for the basis of their caloric intake, namely potato, *chuño* (coming from the Quechua for wrinkled potato), and quinoa. Caloric needs are often met between these crops and llamas or sheep, however herders are seen to raise llamas for several other reasons: as a commodity to trade for goods which cannot be produced (Markemann, 2009; Dyson-Hudson, 1980); a source of fertilizer to aid crop growth (Godoy, 1984; Weinstein, 1983; Winterhalder, 1974); a mechanism for transportation (Molina Rivero, 2006; Browman, 1974); and 'banks' to insulate against climatic variability and other disaster (Murra, 1968; Paine, 1971).

#### **CHANGES AND LANDSCAPE**

The landscape immediately surrounding Roberto's estancia of Vila Vila is dominated by *tola*. Growing up to one meter tall, *tola* is another key component to life in the altiplano and is used for many things, from wind blocks to firewood (Torres, 1993; Stouse, 1971). A robust plant, the *tola* is both resistant to drought and freezing temperatures, making it ubiquitous in the cold arid region. Over lunch one afternoon,

Roberto explained to me that tola was once sparse surrounding the region of Vila Vila and that previously, the landscape was covered in *paja brava*. Paja brava is a stiff grass that grows in dense clumps throughout the altiplano. It is mainly used for llama fodder as well as the thatching on the roofs of traditional adobe houses. For Roberto, the change in flora from *pajonales* (fields of paja) to *tolares* (tola scrublands) has been a positive one, as the taller tolas are more resistant to the harsh climate, ensuring that there is ample llama food during the hard years with increased drought (Wickens, 1998).

The tolares also provide Roberto and his family with a nearby source of fuel for cooking, which is the predominant use of tola in the altiplano (Figure 6). While also known for its medicinal properties amongst the locals, the plant is rarely referred to by its common name, but is rather called *leña*. The constant reference to the tola as *leña* illustrates its importance in the maintenance of rural livelihoods—without *leña*, there would be no ability to cook the food which they produce, no source of fuel for boiling water, and little for the llamas to eat. The conversation with Roberto about the use of *leña* in Pampa Aullagas cannot, however, be discussed without asking the question of why the *pajonales* of Vila Vila gave way to the tolares during Roberto's lifetime.<sup>9</sup> Roberto's acknowledgement of this change is integral to understanding the llamero's connection to the land, and how he is able to recognize the myriad ways in which the landscape is changing. One plant giving way to another can stem from many different causes, from a changing climate to pressure put on the land by the human rearing of pastoral animals. While Roberto was not able to identify the proximate cause of this change, the conversation did bring up the topic of the changing climate with which Aullageños are now coping with. Roberto mentioned the occurrence of snow in early May of 2011 and

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<sup>9</sup> While the reasons for this change are unknown, it is likely caused by llama foraging: Vila Vila was once the site of the largest llama herds in the Marka. Roberto's grandfather was reported having over 400 head of the animals, as were several of his neighbors.

how it had damaged many of their crops, his inability to cultivate potatoes in some of the same places where he grew potatoes in the past, and the reduced size of Río Lacajahuira in the valley to the west of his house.<sup>10</sup> For being far removed from the chatter about climate change that has become ubiquitous in the media, Roberto was still cognizant of the climatic changes that were occurring and had learned to adapt. Not able to recognize the causes of these changes, Roberto's intimacy with the land gave him the tools necessary to both see change, and to react to it appropriately.



Figure 6: Landscape typical of the area near Vila Vila.

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<sup>10</sup> According to the locals, the reduction in the size of Rio Lacajahuira was attributed to industrial activities upstream.

Roberto was not only aware to the changes in the landscape around his estancia, but to the broader changes occurring as well; when the conversation turned to quinoa production, Roberto cited his concern for the environmental damages that it has caused. Roberto didn't seem concerned with the production of the seed for export. In this sense the production of quinoa was just another way to survive from what the land provides you, just as raising llamas, cultivating potatoes, and burning leña for fuel. Roberto did however show his concern for the way in that the change from subsistence to commercial production has damaged the land. Roberto's concern did not arise from the use of new technologies for cultivating quinoa, such as the tractor and disc plow, but arose from the changes in which the way the land was being managed. Citing his quinoa producing neighbors as an example, he explained how the tilling of large areas of land without wind breaks of tola every twenty meters had led to significant wind erosion, leaving parts of his neighbors once fertile land *"like a rock,"* where little was now able to grow. Similar conclusions have been drawn in other regions, including Salinas de Garci Mendoza to the south. Workers from the NGO APROSAR who were visiting Pampas verified that some growing regions have been swept of much of the topsoil. In Roberto's eyes, those who had taken to commercial production had lost touch with the land, no longer recognizing the cycle of giving to the land so that it can give back to you. With the cultivation of quinoa on the commercial level has come the disruption in the cycle of nurturing between the pachamama and the community, where one can take from the land as long as they also give back to the land. Roberto continued to complain how quinoa producers no longer care about the future of neither the community nor their children, as they were taking more from the land than they could possibly give back, rather than preserving the land for future generations. The preservation of the land for future generations has become an issue in Pampas. There have been recent attempts at creating a constitution for

Pampa Aullagas. However there are many members of the six main ayllus who oppose putting land preservation in writing, as they feel it could inhibit their productive capacities.

### **FOOD AND THE LLAMERO**

Of the people I met throughout the duration of this research project, Roberto was perhaps the one most proud of his family's diet. With relatively few exceptions, llameros remain largely self-sufficient, growing the majority of food themselves and purchasing inexpensive staples such as oil, sugar, coca leaves, and rice when needed. Since the bulk of the food comes from the surrounding land, the llamero tends to have a unique perspective on food security,<sup>11</sup> which differs greatly from those integrated into the market economy. During the time spent with Roberto, it became apparent that the llamero has a view of the environment (and subsequently food security) that is strikingly different from that of a typical producer. People who work directly with the land tends to have an acute awareness of environmental fluctuations associated with mountain environments. As Denevan (1983: 402) notes, the pastoralist has a different understanding of the risks posed by the environment: "Traditional farmers, or herders, in contrast to the visiting observer, tend to be sensitive to the dynamic character of both nature and society. From their heritage, they are aware of short-term fluctuations and longer-term extremes as well as their own diversity of options for coping or adapting". Here, the llamero's connection to the land becomes his greatest strength—it forces him to accept that there will be both fat and lean years, enabling him to stratify his crops and reserve food for just such occasions.

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<sup>11</sup> The term here refers to easy access to plentiful stores of food that is maintained by the llamero, and does not intend to take on the discursive baggage generally associated with the phrase.

As one would expect, llama meat is one of the most important staple foods for the llamero. Consumed at least once per day, the average llama will last Roberto's family of nine<sup>12</sup> two to three weeks, necessitating that Roberto kill a llama at least once a month. Unlike most Western societies where only the best cuts are served (typically without the bone), in the Pampa every part of the animal is consumed in some fashion or another and has a unique purpose. The larger pieces of meat are used for *charque*—meat cured with salt and dried in the winter sun—is typically eaten in a light, brothy soup with quinoa and potato (Vidaurre, 2005). The smaller pieces of meat that are generally on the bone, are not uncommon to be found in the form of a knee joint or rib floating amongst potatoes and quinoa in soup, while larger pieces are served alongside a side of potatoes, quinoa, or rice.

Early one morning during my stay with Roberto we set out to 'matar una llamita,' a process that is necessary to describe to further understand the agropastoralist's connection with the land and food that his family eats. The process begins at his small adobe cook shack, where he gathers a rope, wheelbarrow, and well-worn knife, which he sharpens on a rock near the front door. Tools in hand, he walks to the llama corral nearest the house. The corral is entered through a rudimentary gate comprised of dried cactus stalks from the surrounding pampa. Apart from the stomping of the hooves and the occasional chirp from the llamas, there is no sound. The llamas see that Roberto is calm and so they remain calm, going about their business.

Each llama is marked with a strand of pinkish yarn or tag on the ear to indicate its age. Those that are younger are kept for reproductive purposes, while the older llamas between the ages of 5 and 9 years are used for consumption. Even though the animals are

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<sup>12</sup> While Roberto laid claim that it would feed his family of nine for that long, it should be noted that his entire family was rarely present, several now residing seasonally in the city of Oruro.

tagged, the selection process takes about a half an hour. Roberto occasionally lunges to grab a llama, grabbing onto its ears, forcing it to the ground and rendering it incapacitated. Holding the ears, he checks the tag, looking at its teeth and under its tail to determine which llamita he will use. The whole process allows him to not only choose an animal, but gives Roberto an opportunity to survey his herd and their condition. Even though he has 170 head of llama, Roberto knows his animals extremely well, almost as if they were his children. The details that he knows—while impressive to me—is typical of the agropastoralist, who has an acute knowledge of everything from llama age, quality, and which llamas are the best for husbandry. Surveying the herd, he sees a young llama with a large tumor in his cheek. I am instructed to hold the llama by the ears, allowing him to pry open the bulging mouth revealing that the tumor was in fact a large ball of partially chewed leña that was caught in the llama's tight cheek. The wad of food is removed and Roberto eyes his next victim. In the end, an eight-year-old female is chosen and dragged out of the corral. As his assistant, I hold its ears, forcing it to the ground while Roberto expertly secures the woolen rope around the hind legs, binding them to the body and disabling it from running off. Now on the ground, I am instructed to sit on the llamita's back while Roberto straddles its neck and raises the llama's calm head, exposing the throat.

It seems to be over as soon as it begins. The worn blade is raised to the throat. When it first makes contact with the fur, Roberto moves his hand vigorously from side to side, sinking the knife deep into the llamita's throat, sawing through the jugular. Bright red blood spews from the throat and steams to the cold ground. This will be the only waste. We lift the fallen llama by its warm legs onto the old wheelbarrow and push it through the loose sand the 200 meters to the tiny cook shack where all of the family's food is prepared. Most families that live in town have transitioned from the cook shack to

propane stoves; while only a few still exist in town, this remains the predominant cooking area in the campo. Cook shacks are typically constructed of adobe bricks and used both for cooking and eating. Food is cooked using leña and other shrubs on an oven built into the wall of the cook shack. Here, with the llama on its back, Roberto skins the animal. He is careful not to damage the hide, periodically honing the blade (which dulls quickly on the llama's coarse fur) on a nearby rock. Expertly, he manages to keep all of the blood from staining his clothes, spilling only traces on the ground during the entire process. Now bare, with head and hooves removed, Roberto opens up the still warm body cavity. Piece by piece he removes each organ and sets it aside. To the average observer it would be considered waste, but to the llamero, each organ removed will serve a unique purpose: the lungs are hung up to dry on the thick wire clothesline; the heart is drained from a peg on the wall of the cook shack (Figure 7); the liver is to be transformed into today's soup; the tripe is emptied, washed out with clean water, and is set aside for grilling. Similar to tripe in Mexican cuisine, llama tripe is the small intestine and generally grilled over open flame after it is cleaned; often the first part of the animal consumed, many Aullgeños consider it a delicacy. Towards the end, Roberto lifts out an organ that I have never seen before. Noting my confusion he tells me that it is '*una cria de llamita*'. No more than four inches long, Roberto looks at the fetus and admits that he was not aware of the llama's condition, however it did not matter as the fetus would certainly have perished during the long winter. He sets the fetus aside. It will be used at a later time for ceremonial purposes, perhaps as a sacrifice to the pachamama during the upcoming *Año Nuevo Aymara*, where it will bring luck and fertility to the entire community. The remainder of the llamita is expertly divided into six pieces—ribs, hind quarters, front quarter, and neck—and taken into the windowless store room adjacent to the cook shack where it will remain until it is needed. There are no refrigerators in the region; meat is

stored loosely covered with a canvas bag in a cool, dark, dry place. The thick adobe walls of traditional storerooms moderate the fluctuation of inside temperatures, keeping meat from spoiling.



Figure 7: Organs from the llama kill dry on Rosa's adobe cook shack.

From start to finish the entire process is over in less than two hours. With very few exceptions, every part of the animal will be used at some juncture for a specific purpose. Nothing is wasted except the blood spilled from the initial kill. What isn't acceptable for human consumption will be fed to the family dog. Most dogs in the area are strays and a nuisance; however Roberto and Rosa's dog is much more like a family

pet, following them between Vila Vila and Pampas. The hide and wool will be saved to sell until the family can make the six-hour trek to the market. Unlike the alpaca or vicuña (both closely related to the llama) llama wool and hide sells for surprisingly little. At the time of research, Roberto estimated that both the hide and wool from one llama would fetch Bs 25 (around \$3.00 U.S.) at the market in Challapata.

Potatoes are another staple food for the Andean agropastoralist. As most agropastoralists reside far from the community centers, the transport of heavy potatoes is prohibitively difficult. Thus, the potato must be grown by the llamero near his home in order to meet the dietary needs of his family. Between herding llamas and making the journey between Vila Vila and Pampas, Roberto spends much of his time cultivating his potato crop, which is especially intensive during planting (November) and harvest, which takes place between May and June.

Unlike some activities in the Altiplano, both men and women, young and old, carry out the potato harvest. Roberto's crop this year was located on the hillside to the south of his house, requiring a strenuous fifteen minute walk through the loose sand from the bottom of his field to the house. The plot, which must have been around one half of a hectare in total, was planted with five different varieties of potatoes (of these varieties Roberto was only familiar with one name,<sup>13</sup> but informed me that they are varieties that his family has been growing for as long as he can remember). The numerous classes of potatoes grown coincide with Brush's (1991) assessment of potato cultivars in the

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<sup>13</sup> According to the International Potato Center, there are over 200 varieties of wild potatoes still found in the Andes; however, only 30-40 of these varieties is widely grown. While improved varieties exist (those specifically bred to withstand cold, drought, pests) many rural producers tend to only produce native non-commercial varieties, as they are not oriented toward the market.

altiplano. It should be noted that Roberto's description refers more to how *picante* and *fuerte* they are, descriptions that take into account both the flavor of the potato as well as their ability to grow under different environmental conditions. Again, as with the meat from the llama, each potato has a unique purpose depending on its size and variety. A brief description of the potatoes follows: round red skinned, yellow fleshed potatoes grow in a variety of sizes, from marble to racquetball—the smaller ones used for making chuño and the larger ones set aside for soups; elongated purple and white striped potatoes up to eight centimeters long, which have the strongest flavor and are often baked in a rock oven and served with fresh llama; an oval, yellow skinned variety resembling a miniature version of what we know as a Yukon Gold, which are used for both soups and *platos fuertes* (main dishes);<sup>14</sup> a deep purple variety about the size of a baby carrot, which are typically dried as chuño; and a golf ball sized yellow-red variety, which is also used for chuño.

Varieties are planted in short furrows about a half-meter apart, alternating varieties row by row. The soils where they are grown are extremely sandy and are fertilized by the periodic addition of *abono* (fertilizer obtained from llama droppings) from Roberto's llama herd.<sup>15</sup> As Roberto explained, the llama is an extremely 'clean' animal (*un animal bien limpio*); unlike sheep, the llama has the tendency to defecate in the same place, leaving mounds of abono throughout the pampa where the herd roams, making it exceptionally easy to gather. Once collected, the abono is spread out in small

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<sup>14</sup> A plato fuerte in Pampas was never a soup, and often consisted of rice or noodles, with an egg or piece of llama meat and potato and is typically consumed during the main meal at lunchtime.

<sup>15</sup> Although we can think of *abono* as synonymous with fertilizer, Roberto only associates *fertilizantes* with chemicals, while abono only refers to manure.

piles on the field, and then sprayed out in a fan-like pattern by bending over and flinging the abono with both hands (Figure 8). Once spread out, the abono gets worked into the soil during the process of planting. ‘Seeds’ for cultivation of the five varieties are acquired from a store of potatoes that are reserved from the year before, thus if there is a bad year for one variety due to pests or frost, the seed stock will be greatly reduced. The experience of harvesting the potatoes is unique, and can be described as ritual, communal, and in a sense, spiritual, and is worthy of description.



Figure 8: Fan-shaped pattern of distribution of llama manure onto a typical field.

By the time I met Roberto in late May, his potatoes had already been harvested for the year; however I was able to assist his uncle on a similar potato plot near Vila Vila. As is often the case, harvesting the potato is a familial event. Roberto, his wife (Rosa), son, niece, uncle (Tío) and I all participated in the task.

Before we begin to harvest the papa, Roberto sets off to find one of Tío's sheep, which he kills and cleans. It will be used for the communal lunch later in the day. While Roberto is cleaning the sheep, Rosa and his niece set off to build a rock oven near the potato field to cook potatoes for lunch. The oven is the traditional way to cook the tubers, and is comprised of rocks tightly fitted together in a dome shape; leña is then used to heat the rocks on both the inside and outside, and then covered with *paja brava* (*Paspalum millegrana*) and topped with sand to prevent the heat from escaping. Typical of Andean notions of reciprocity, Tío is responsible for supplying the meal for those assisting in his harvest. The concept, loosely referred to as *ayni*,<sup>16</sup> is integral to the Andean way of life, and used in everything from harvest to the construction of a house. This was explained to me by Roberto as “*hoy para mi, mañana para ti,*” where one's labor is traded for the possibility of needing another's labor in the future. In this exchange, meals (along with coca leaves and drink) are supplied to fuel the laborers through the work in which they will participate.

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<sup>16</sup>Interesting enough, the definition of *ayni* was disputed by many people who attended a later meeting from the ayllu Sacatiri. Other traditional definitions of reciprocal exchange were also disputed, indicating that while the concepts still exist on a general level, many people have fallen out of touch with the individual meanings.

Once the sheep is cleaned and the portions for lunch are selected, Roberto gathers several short hoes and passes them around. The first potatoes that are harvested are then given to Roberto's wife, who places them in the rock oven, which is sealed and allowed to cook while the harvest continues by everyone present.

The process of harvesting is arduous. Using the hoe, a V is cut at the base of the plant, the plant itself in the open part of the V. A final sweep of the hoe cuts perpendicular across the V exposing the roots. Bare hands then sift the exposed soil to gather the tubers below, using both sight and feel to separate the potatoes from the soil. Rosa was very particular in the method used to harvest the potatoes, suggesting that other techniques could damage the tuber or lose it in the sandy soil. Depending on the conditions of the growing season (water, temperature, pests) and the variety of potato, one plant yields between three and ten potatoes of various sizes and shapes. Plant by plant, the process is repeated, the yield tossed in a basket, the basket emptied onto a blanket, until the row has been completed (Figure 9). When there are too many potatoes on the blanket to easily move it around, potatoes are transferred to a quintal-sized canvas sack (now made of plastic and recycled from a variety of past uses) until the entire field has been cleared. Each person works to their own ability: the young move quickly to finish, while the elderly work more slowly, sometimes using only their bare hands, squatting barefoot on the loose soil.



Figure 9: A variety of potatoes from the harvest.

Midway through the day we all take a break to eat lunch (or as Roberto says '*tenemos que alimentarnos,*' a relevant difference in word choice that will be discussed later). The sheep is cooked over a fire of leña on bits of wire and metal discarded from past uses found near the field. Even in the more remote parts of the pampa trash can still be found (although, as opposed to town life, most of the refuse will, at some point, be repurposed). The rock oven where the potatoes have been baking is opened, the potatoes are placed in the remaining half of a broken pot, and pieces of the sheep are passed out to everyone, with the fattiest and choicest pieces going to the guests first. The food is eaten with bare hands, which are first washed with a bottle of water retrieved from a nearby well. Potatoes are eaten after the skin has been peeled and discarded. Roberto explains

that it is our culture (*nuestra cultura*) to remove the potato skin,<sup>17</sup> whether it is from a fresh potato or chuño. No further explanation was given nor needed in Roberto's mind. The mood seems almost solemn while the meal is eaten in silence, as if it is an opportunity to reflect on the day's work. Each piece of meat is eaten until the bone is completely bare, with no remaining fat, gristle, flesh or tissue, and then it is tossed to the waiting dog. Lunch is washed down with a bottle of Coca-Cola which is shared by all from a single cup. Drink. Refill. Pass. Similar to the consumption of alcohol in the Andes, the experience feels like communion.

Following lunch, the remaining potatoes are harvested and transferred to burlap sacks, each weighing somewhere between 25 and 50 kilos. The bags are hoisted onto the back and carried to Tío's storeroom, where a portion of the potatoes will be processed into chuño, and the remainder stored and to be consumed throughout the remainder of the year. While the unusually cold weather damaged many of the plants this year, reducing the yield, we were still able to harvest well over four quintals of potato, which will still be almost enough to get through the year, even while saving a portion for seeding at the onset of the rainy season. This leaves Tío with around one half kilo of potatoes to eat per day. This results in about 400 calories (or 20 percent) of his daily caloric needs being met with potato consumption. Caloric intake in the altiplano has been analyzed by several researchers to be around 1800 calories per day (Shapiro, 1963; Stousse, 1971; Hoag, 1992). While this may not be the exact situation for Aullgeños at present, the number is likely close. While the number may seem high initially, the amount of Tío's calories that

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<sup>17</sup> This is likely because potatoes—especially wild varieties—contain glycoalkaloids that are toxic to humans. The process of cooking the potato destroys a portion of them, however some remains. As the potato accounts for a large part of the daily diet of for those in the altiplano, it is probable that removal of the skin simply became a cultural norm.

are met from potatoes is actually low for the altiplano, which is often as high as 50 percent (Berti, 2010; Franco, 2007).

Understanding the importance of the potato in traditional Andean life is necessary to understand the changes occurring in Pampa Aullagas. While the consumption of the potato remains crucial to both caloric and nutritional intake, the process of cultivation connects the people with the land, arguably one of the most important intangible aspects of the potato. During the *cosecha*, most people wear crude sandals or no shoes at all, which arguably connects the skin to the land, thus making people feel closer to the Pachamama (Figure 10). Benjamin Orlove suggests that this further separates the Indian from the mestizo and is a key symbol of Bolivianness in the altiplano (Orlove, 1998). While Orlove's connection between physical proximity to the earth and connection to pachamama may ring true, it is likely that sandals are worn as a practical matter: shoes are simply not suited to wear while harvesting potatoes, as I quickly discarded my own footwear in favor of bare feet in the earth. Whatever the case may be, footwear became an easy way to quickly identify livelihood choices. Again, like the selection and kill of the llama, the potato harvest has an element that is indiscernible—it is not merely about harvest, but there is something phenomenological, and spiritual about the way the family acts while working together with the land.



Figure 10: Rosa harvesting the potato in Tío's field.

One of the most important crops for the llamero is the chuño, a freeze-dried potato that can last for up to five years. When I first met Roberto and his wife, the first task that we set out to do was processing chuño for the upcoming year. Of the llameros that I met, all relied heavily on this food, predominantly for the fact that it can be left in storage for several years and saved for those times when crops are sparse or for when an unexpected illness strikes the family and limits their ability to manage crops.<sup>18</sup> The process of preparing chuño is somewhat rudimentary which is both the chuño's major

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<sup>18</sup> Roberto claimed to have chuño from five years prior in his storeroom, however the other llameros generally agreed that the lifespan of chuño was between two and three years.

strength and weakness. There is no economic cost to the llamero for processing equipment, but making chuño is perhaps one of the most labor intensive food production activities in the altiplano. Quite simply, the process requires leaving potatoes outside for several days during the dry winter months and then stomping on the softened potatoes with bare feet, functioning both to remove the skins (which are always removed on potatoes prior to consumption) as well as squeeze out the moisture from the potato (Figure 11). The stomping on the potatoes looks at first to be similar to crushing grapes for wine, however the process is far more complicated and involves using the bare toes to rub the potatoes together to remove the skins. The difficulty of the technique became clear when Roberto and I attempted to assist, the two of us finding it far more convenient to use our bare hands—either method proved quickly tiresome. The potatoes then remain outside for several more days to finish ‘drying,’ after which they are gathered and kept in canvas bags in a dark corner of the house. With the skins removed, the potatoes have nothing to keep in the moisture, which quickly evaporates in the arid winter climate of the altiplano—finished chuño resembles a pumice stone more than a potato.



Figure 11: Rosa removing the skins from potatoes to make chuño.

As with most tasks in the altiplano, there is an unspoken dimension of gender in preparing the chuño. My experience making chuño began with Rosa, who was accustomed to drying all of the potatoes on her own, working for several days inside an adobe fence built to keep the llama and sheep out while potatoes were left out to dry. This gender dimension first became apparent when I offered to help with process while watching Rosa work. Unaccustomed to help, she eventually instructed that I pile the potatoes according to size, while she used her bare feet to remove the skins from the potatoes on each pile. Towards the end of the day when Roberto appeared, Rosa

continued to work while Roberto chatted with me about the environment of the surrounding area. Where the potato harvest had us all working together at the same time until the task was finished, chuño appeared to be the task of just Rosa, which became even clearer when Roberto did attempt to help. On several occasions walking through the pampa, the areas where chuño were set out to dry were occupied only by women, some sitting on the ground working with only their hands, while others removed the peels using the same technique as Rosa.

The fourth aspect of the llamero's diet is quinoa. The seed is typically associated with the Andes, however production has recently begun in the U.S. (Oregon, Washington, and Colorado) as well as Pakistan (Hassan Munir, personal communication, August 30, 2011). It grows in saline soils up to 4,000 meters above sea level and can reach up to 3 meters in height (López, 2011). Although there is estimated to be 2,000 different ecotypes (or geographical varieties) of the plant (Cusack, 1984; López, 2011) the predominant variety in the region is royal quinoa.

Production of quinoa, while less important than llamas or potatoes, remains an integral part of the agropastoralist's diet. As with potatoes, production of quinoa is labor rather than capital intensive and the lone llamero only desires to produce minimal quantities to supplement his diet. Quinoa's moniker as 'the golden seed' has generally been used due to its high nutrient content, here however, this nickname takes on a whole new meaning, as quinoa production without the use of machines becomes labor intensive. While most farmers who produce quinoa for sale use cars or tractors to separate the seeds from the stalk and hand crank mills to remove the chaff (this will be covered in greater

detail in Chapter 5) the pastoralist subsistence farmer prepares the seed completely by hand. This involves lying the cut stalks out to dry on a tarp or canvas and walking on the dried stalks or beating them with a long stick to shake loose the seeds. Periodically a rake is used to remove the large pieces of stalks, which is followed by more walking on the dried stalks.

Once the majority of seeds are separated and the stalks are removed, a large sieve is used to further remove the seeds from the small rocks, stalks, and leaves that could not be separated with the rake. The sieve can either be made for one or two people and is again elegantly simple: the main structure is comprised of four sides made with dried cactus stalks and is completed with a screen that is attached to the bottom with wire (typically nothing more than bits of old tin wired together with holes the size of a small nail poked throughout). Seeds are refined several times with this sieve before the final process begins of separating the light chaff (small bits of ground up organic matter mixed in with the seeds) from the heavy seed. Chaff here includes the final bits of ground plant particulate, much like a dust that is lighter in weight than the seeds.

Perhaps the most time consuming part of the chore, the final bit of the process involves using a tin can or pot to separate the heavy seeds from the light chaff. Using the wind as a fan, the quinoa is allowed to slowly and deliberately spill from the container held at shoulder height, the wind blowing the lighter pieces of chaff while the heavier seeds fall onto a blanket on the ground below. This process is then repeated several times until little remains of the sticks, chaff, and dirt that mixed with the seeds during the winnowing process. While the process is functional, Roberto told me that he used the

*ventiladora* (processor) of a neighbor to process his seeds, as the costs of trading with a neighbor outweighed the benefits of processing the seeds manually. As capital becomes more abundant with commercial activities, there remain still a few who use this method for seed separation as no extra equipment is needed, however as mechanical separators become more common, more and more Aullgeños manage to find access to one of these rather than relying on this time consuming method. While the production of quinoa for the llameros is labor intensive, processing the seeds himself is practical as it saves him from spending the minimal capital that he has, choosing rather to spend his labor, which is more abundant.

A final difficulty in the processing of quinoa is that it must be washed to remove all of the bitter saponins (a bitter metabolite) that cover the exterior of the seeds and can constitute between .06 and 5.1 percent of the seed depending on specific variety and environmental conditions (López, 2011). Saponins, while not toxic to humans, must be removed prior to consumption. The process—which is typically done by women— involves roasting the seeds over an open fire, and scrubbing them several times in water (Figure 12). Once washed, the seeds are then dried either in the sun or are re-toasted, a process which takes as much as six hours to process 12kg of the seed (Astudillo, 2007).

Citing the high costs of mechanized tillage, Roberto manually plants the individual seeds using simple tools that have been in the community for years. Over lunch one day Roberto explained to me that sowing seeds manually provides three main advantages to the newer, capital intensive methods. First, using tractors and disc plows to prepare the land leads to steep levels of soil loss through wind erosion. Planting by hand

disrupts the land minimally, exposing less of the fragile soil to the harsh elements. Furthermore, the manual method gives Roberto increased control to plant around existing plants, including paja, leña, and llareta, leaving roots in the soil and preserving vegetation for his herd to eat after the quinoa has been harvested. Finally, manual sowing is far more economical, as fewer seeds are left exposed to be lost by the wind or eaten by rodents and birds. As Roberto can plant the seeds with high precision, he only plants enough seeds to ensure that his crop will grow and doesn't have to plant more in anticipation of some being lost. Just as with the seeds from his potatoes, the quinoa that he plants has been passed along for years and is not of one sole variety, something Roberto stressed was a source of great pride for him.



Figure 12: Rosa prepares quinoa for consumption to remove the bitter saponins.

Even though Roberto's production of quinoa is significantly lower and more laborious than commercial producers, he did state that quinoa was still consumed multiple times each week, and in various forms. Aullgeños were quick to tell me that each form of quinoa requires a different type of seed which varied in color, size, and bitterness. Traditionally, it is prepared in a soup, as a main dish prepared like rice, and flour which is mixed in hot water to form a thick beverage known as *pito*.<sup>19</sup> Oddly

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<sup>19</sup> When sugar is added to *pito*, it forms a drink reminiscent of Mexico's *atole*. Thick, hot, sweet, and full of nutrients, several people claimed to have had *pito* a part of their daily diet, generally consumed as a breakfast food.

enough, two of the five times that I ate quinoa in Pampa Aullagas during my two-month stay was with traditional agropastoralists, and not the producers.

## **REFLECTION**

It only takes one trip into Roberto's storeroom to see how his family copes with both and seasonal year-to-year fluctuations in food production. Much like the llama can be seen as a food bank (Paine, 1971) the food that he keeps in store, namely chuño, give Roberto's family a degree of protection against yield instabilities (Valdivia, 1996; Tapia, 1998). Stacked against an adobe wall adjacent to his bed are ten to fifteen burlap sacks filled with a variety of foods, including quinoa, potato, and chuño. Dangling from the ceiling above these are large squares of charque, stained white with salt for preservation. While the variety of food in his pantry is not wide, there are ample provisions to protect him against fluctuation in both trade and production that vary year-to-year.

For Roberto, maintaining sufficient supplies of food is part of his long term survival strategy. Far from rigid, food security for the agropastoralist is constantly changing, adapting as needed to the changing social and environmental conditions of the world in which he lives. His practices operate on a wholly different scale than the policies of food security promoted by politicians that predominantly seek to ensure access to food at larger scales and for urban populations. The concept of food security as defined by the FAO assumes that the developing world has a level of food insecurity due to potential political and environmental shocks. However (at least in Roberto's memory) there has never been a scarcity of food that has threatened the wellbeing of his community due to

the flexibility of their subsistence tool kits and access to local trade networks. As a result, both of these concepts have remained completely foreign to him. Maintenance of food stocks has always been successful at the household and community level, and until now, there has never been a need to define how he has access to food. During the worst years, the agropastoralist has always had access to ample livestock for meat or as a trade item to ease them through until a new harvest can be reaped, again going back to the notion of the llama as a bank (Paine, 1971; Murra, 1968). The community further contributes to the security of one another by joining together to offer support to the elderly and others in time of need. Keep in mind Roberto and Rosa assisting Tío. The notion of community-based support was also addressed at the ayllu Sacatiri meeting, where everyone present maintained that the community was available for others in times of hardship.

In the potato harvest community cohesion is maintained through forms of reciprocity (both *ayni* and *mink'a*). The harvest becomes a time for people to come together to create a shared cultural experience. Creating a shared experience helps to create a universal understanding between community and land and offers a time for people to share the changes that they have noticed from year to year.

Cultivation for subsistence keeps the agropastoralists cognizant of the changes in the environment and allows them greater capacity to alter their production practices to maintain their direct access to food. The wide variety of potatoes cultivated further enables Tío to cope with yearly fluctuations in the climate, as some varieties are resistant to cold, while others are resistant to drought, or certain pests. As easy as it is for us to think about pests in any agricultural environment, the concept of pests did not translate

well to Roberto or Rosa; as their production practices have remained largely unchanged for decades, pests are something that they have always dealt with and therefore have always used crop rotation or inter-planting to mitigate such a problem. Zimmerer (1998) notes that planting a wide variety of landraces, either clustered or interspersed, allows the producer a degree of versatility that acts to stabilize their yields and Cleveland (1994) suggests that using a variety of local landraces supports long term stability, both culturally and ecologically. While the labor is difficult, Roberto believes that producing his own food allows him greater control over his access to food—while the variety of things that he eats is sometimes limited; his subsistence lifestyle ensures that there will always be food in the storeroom during both good and bad years.

Roberto and Rosa are typical smallholders and represent, in many ways, how things once were in Pampa Aullagas. Their diet is predominantly based on the four main foods that they can produce themselves: potato, chuño, quinoa, and llama. These foods are traditional to the region, however it is still evident that changes have occurred. Coca-Cola, rice, cooking oil, and flour from outside the community are still a part of their diet, although to a much smaller quantity than those participating in the market. The choice of Roberto and Rosa to produce their own food is based on their access to labor, rather than capital. However, several themes can be seen through the production of their own food. Production reinforces concepts of community based on reciprocal labor (note the entire family helping in the potato harvest for Tío). Subsistence production also gives the llameros a degree of autonomy or control over his crops: helping Roberto during the llama kill and the potato harvest indicated his control and his connection to production,

and in a sense, his pride in producing his own food. His agricultural system is integrated, and depends on llama, sheep, community, and tola—these are some of the necessary elements to make Roberto's subsistence living possible. In a sense, everything has some utility. Cell phones, and electricity are still part of their daily lives, just as they are part of the lives of those living in the urban centers. What makes the life of the llamero so unique though, is that the llamero, even with the transition to a more technologically advanced life, has managed to maintain his connection with the land and community. Smallholder cultivation of food for survival requires an intimate awareness soil, flora, climate, and landscape, where food is the intermediary between human and pachamama.

## Chapter 4: Local consumption and the politics of change

Isabel and Carlos are a middle class family by rural Bolivian standards. The middle class is overlooked by many researchers, who choose to look at commercial producers or smallholders. Understanding the life of Isabel however is crucial to understanding just how Pampa Aullagas is changing. Her position as a schoolteacher gives her rare insight into both the lives of youth, as well as parents. Isabel and Carlos are furthermore leaders within the community; Carlos served a year-long tenure as an *autoridad*, and continues to organize meetings of the Sacatiri ayllu in an attempt to secure NGO funding for community agriculture projects in his estancia of Junathuma. While the llamero's concern for quinoa production lay in the changing treatment of the land by those looking to join the export market, Isabel and Carlos, have a much more political and cultural take on the changing nature of agriculture. Isabel and Carlos' position between the llamero and the producer gives them the advantage of understanding the distinct needs and values of both the subsistence producer, as well as the export producer. To them, the greatest challenges brought about by the increased production of quinoa lie in maintaining Pamapa Aullagas' unique cultural identity, including the community's ability to work across different ayllus cooperatively.

Isabel is a schoolteacher. Roughly the equivalent of a high school in the U.S., the *colegio* where Isabel teaches has nearly two hundred students who are taught by 17 teachers, most of whom are only part-time. As a result, Isabel is one of the few teachers who are present at all school functions. In her mid-forties now, she moved to Pampa Aullagas from a neighboring town around twenty years ago when she married her husband Carlos, who teaches at the local elementary school. The two have three children between the ages of nine and sixteen, all of whom attend classes in Pampas.

Like many of the houses in Pampa Aullagas, Isabel and Carlos' home is under a constant state of construction; for the past ten years they have been making the transition from traditional adobe houses, where thatch roof homes have given way to more modern brick and cement buildings with tin roofs and concrete floors. The sole bathroom is in the middle of the courtyard and is shared by two different households (Figure 13). A large plastic tank is situated on the roof, and fills periodically as water becomes available. Each courtyard in Pampas has a water tap to share amongst households, however water is not available every day—when water is available, residents fill reservoirs (typically in the form of reused 55 gallon drums).



Figure 13: Isabel and Carlos' house (center) with shared bathroom (far left).

The inside of their house is efficiently used: Carlos and Isabel share one room and their three children another; this room also serves as a living room for when guests come to visit as well as a place for the children to do their homework. There is a small color television on top of the dresser, yet another testament to the beginning of economic modernization. The kitchen is perhaps the most efficiently used of all the rooms. A tiny table with two chairs sits in the corner next to a shelf with dry goods and a small stove powered by natural gas is situated by the door. Adjacent to the kitchen is their storeroom, where they have an extra bed, although it is clear that it hasn't been used in some time, as it is covered with miscellaneous canvas bags of food, including noodles, rice, chuño, potato, sugar and flour.

The life of Isabel and Carlos is filled with daily livelihood activities, in addition to their work as schoolteachers. When I first met Isabel, she was in the family storeroom with her sister-in-law baking cakes which would be sold at the school play the following day. The room was cramped and cold even with the oven blazing. There were parts of cakes cooling on every available surface, from the unused bed to the canvas bags of noodles and rice that scattered the floor. As Isabel baked, she explained to me that between teaching, raising her three children, and taking part in community events, there was little time for much else. The potato harvest, which was typically complete by May, had yet to take place and their small plot of quinoa had been dry and ready to process for weeks, but they were still unable to find any available time to process the seeds.

#### **CHANGING FOOD SYSTEMS**

Isabel and Carlos are both net food buyers. Since the majority of their time is consumed by the classroom, there is little time left over for cultivating traditional crops, let alone in quantities significant enough to feed a family of five. However, their position

as schoolteachers puts them in the unique position of having enough money to buy adequate food for sustenance. What potatoes they would be able to harvest this year will not be enough to maintain the family through the year, so Isabel informed me that they would be supplementing with purchases through the market in nearby Challapata, and include rice, noodles, sugar, and potatoes to supplement what they can grow under their own labor. In addition to potatoes, the family was experimenting with their first commercial quinoa crop.

Working together with other members of the Sacatiri ayllu, Isabel and Carlos paid to have an area around 10 hectares cleared for what would be their first chance to participate in the burgeoning quinoa market. The tilling of the land, located a thirty minute drive from the municipality of Pampas, was carried out by a neighbor with a tractor, paying 250 bolivianos (US \$35) per hectare for tillage, reducing the time necessary to prepare a field by at least 20 hours. Isabel did explain that while it was expensive, they believed it would be easy to recoup the money if they sold most of their harvest through the market in Challapata—assuming that the high prices paid for the seed in the past would hold for this year.

Due to a variety of reasons, including abnormal weather patterns and the inability to find time to complete the harvest, Isabel and Carlos harvested their first quinoa crop later than would typically be considered acceptable to Pampa Aullgeños (as Roberto noted, Carlos also mentioned that the harvest should be complete by the beginning of May). As a result, I was able to participate in the harvest with them. Much as with the potato harvest with Roberto and Rosa, the quinoa harvest with Isabel and Carlos became a familial task; not limited to the direct family, this included help from different families within the Sacatiri ayllu who also had a portion of their quinoa crops on the same field as Isabel (Figure 14). Working independently, each different family was connected

through the common goal of completing the quinoa harvest that day, which meant that labor, tools, and food were readily shared with any who asked. The two rakes, two shovels, and two sieves were exchanged back and forth throughout the day. The harvest (around 10 hectares in total) was carried out by four different families from Junathuma, all relying on the same set of processing tools.



Figure 14: Carlos, his son, and daughter, sifting quinoa on the Junathuma ayllu field.

The production of quinoa at this scale differs little from the method of production of the larger producers in the region. Stalks are cut and left in the sun to dry, a process that takes seven to ten days. Once dried, a path in the field is leveled, and tarps are spread out on the field, generally covering an area three meters wide and several car lengths

long. The stalks are stacked atop the tarp in two rows, the seeds facing in. A car is then used to loosen the seeds from the stalks by driving over the piles of quinoa (Figure 15).



Figure 15: Carlos uses the family car to dehiscence seeds from the quinoa stalks.

Between passes with the car, family members rake out the large broken pieces of quinoa stalk, which will be spread out in the field to replace lost organic matter, or burned to be used as a source of nitrogen in the soil.<sup>20</sup> The process of removing the seeds from the stalks can take upwards of three hours, as one must be careful not to rake out the

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<sup>20</sup> The burned quinoa ash is sometimes also combined with water to create *lejilla*, which is consumed with coca to help catalyze the mouth numbing alkaloids present in the leaf.

valuable seeds along with the broken bits of stalk. Once the seeds have been separated, large sieves are used to further refine the seeds, which are now mixed with large quantities of broken sticks, clumps of dirt, and dust. Again, this process is often repeated several times in order to remove as much extra debris as possible. The separated seeds are then loaded into canvas bags and driven to the house, where a mechanical hand-crank ventilator is used to remove the remaining dust and sticks and sort the seeds into different grades based on seed weights.

In all, the process took the family of five around twelve hours to complete. From the initial eight *sacos*<sup>21</sup> obtained from the hectare plot, the family yielded a total of around three *quintales* (about 45 kilos) of rainbow (mixed color) quinoa. The market in Challapata becomes saturated with quinoa during the middle and end of the harvest months. If Carlos took his harvest to the market during this time, they would join ranks of other farmers trying to quickly offload their seeds. Due to the this seasonal glut in the market, the highest price that could receive would be around 550 Bs (\$75 dollars) for white quinoa real; as Carlos and Isabel's crops were mixed 'rainbow' seeds, the price of selling during the harvest would be slightly less. Carlos informed me that if they were to wait to sell until after the winter when the market was less saturated, then they could possibly sell their crop for slightly more. This, however, required that they keep the seeds protected in their storage room until then. Even if Carlos and Isabel store their crops until spring and prices do rise, the two will only make minimal profits after paying for

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<sup>21</sup> Mesh plastic bags that are designed by volume to contain one quintal by weight or a given product. Typically they are recycled from rice or noodle bags.

plowing, the gas, and tools—not to mention how many hours it took them to complete the harvest. Talking with Carlos and Isabel, it was not clear why they chose to participate in the market when the margins were so slim. As a result of never having attempted to sell quinoa at the market in Challapata, Isabel and Carlos did not know how many extra cost inputs were involved. Another reason for them choosing to participate was that they still expected the prices to rise. If prices increased alongside their efficiency in following years, then profit margins would increase.

In the home, Isabel and Carlos claim to eat like most other Bolivians living in the altiplano. The meals that the family eats are considered *comida típica boliviana*,<sup>22</sup> and generally consist of a piece of llama or sheep, potatoes, rice or noodles, and shredded onion. According to most Bolivians that I talked with, typical Bolivian food is considered to include these staple foods, and is interesting to note that quinoa is often not mentioned when talking about these plates. For Isabel and Carlos, quinoa is largely omitted from the diet for a variety of reasons (not immediately concerned with the high prices of quinoa).

While I had shared meals with Isabel and Carlos before, several days before the end of my research I was invited to their kitchen for the catholic holiday of Corpus Christi. Corpus was a day for families and friends to join together in feast, eating to nurture their bodies, which are of the same essence as Christ's (this was Isabel's rough description of the importance of Corpus). Like most meals, the women prepared the main dishes while the men slaughtered and grilled a llama or sheep. The context of this meal is

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<sup>22</sup> Susan Paulson uses the term frequently in her work in the Bolivian lowlands: "In Bolivia, the polysemic Spanish term *comida típica*—generally meaning traditional food, food that represents a way of life—is used in many ways and many contexts. People talk of "comida típica boliviana," food that represents national identity... [and] regional populations and places." (2006: 652)

one that makes it different from the others that I was served, Corpus being a day not only to share with family and friends, but also a time to nurture the body.

When the meal began, plates of noodles and potatoes were given out to all of the guests. I, however, was the exception and was passed a plate of quinoa to accompany my llama. Noticing my confusion, Isabel explained that the family wanted me to have *comida típica* at least one time the traditional way (with quinoa) before my research was over. When I was finished eating, Isabel asked me if I would like another helping, and when I declined, the remaining quinoa was then passed around to the children and remaining guests at the table.

Isabel knew that my research involved quinoa, but it had become apparent during my stay in Pampa Aullagas that the opportunities for actually consuming quinoa were limited. The meal that was prepared for Corpus involved a traditional quinoa plate that was intended to show me what a traditional meal consisted of in the past and how it has changed. Isabel's response to why the meal was only prepared for me was that it was now too expensive to purchase: "*Ya la quinua es la comida de los ricos.*" This was a common response amongst residents throughout the altiplano, including several people met in the markets of La Paz.

Later Isabel explained that the family still ate quinoa, but in limited quantities and in various other forms that could use a lower quality (smaller size) seed. The form of quinoa that was served during Corpus required the largest seed sizes, which have become increasingly expensive as this grade is most desirable for the export market. When the family does eat quinoa, it is generally consumed in a soup or as pito, a fine ground quinoa

powder that is mixed with sugar and hot water and served as thick beverage. These forms of quinoa require a much smaller seed that is not as desirable for export, and as a result is both cheaper to purchase and there is less incentive to sell it for export.

Isabel and Carlos eat comida típica for their main meal at lunch. During the week when school is in session, a midday break allows most of the students to go home for lunch; however as some students lived further outside of the municipality, it is necessary for several teachers to stay at school. This has given Isabel a unique view into the dietary changes that are occurring outside of their own home setting, and how other families eat. One of the biggest concerns for Isabel is that most children at school have made a clear transition from eating comida típica for lunch, to eating junk foods found at the *tienditas* found on most corners. This problem has grown from students eating candy during breaks, to eating nothing but candy and cookies at lunch. The majority of the *tienditas* sell a large variety of what can be considered ‘junk’ food; often, the only food available if missing comida was found at these *tienditas*. While Isabel cannot say what the students that go home eat, she raised the concern that if so many students that stayed at school ate only candy and cookies, then the chances were good that the diet of her other students had made a similar digression.

In Isabel’s opinion, these changes in diet are not only harming the health of her students, but are the cause of their loss of concentration while in the classroom. After lunch, she claims that her students are no longer able to focus on the core curriculum of math and writing, making teaching increasingly difficult. Of course the subjects of students being distracted goes far beyond the dietary changes that Isabel blames. In the

past five years, cell phones have become ubiquitous in the classroom and are used less for making phone calls, as they are for their ability to take pictures, play music, and games. Increasingly students are also using their cellphones during class to solve their math homework or correct their spelling.

In an effort to combat the changing diet of her students, Isabel has begun to add health as part of the core curriculum for her students. Twice per week, Isabel lectures on the importance of a healthy and nutritious diet, citing the importance of eating comida típica (Figure 16) not only for health reasons, but for cultural ones as well. In her lecture on health, Isabel also tells her students the importance of eating quinoa every week (although Isabel admits that while she tries, it is difficult to eat quinoa in any form even twice per week). To illustrate what a healthy diet should consist of, Isabel even has instituted potluck style lunches at school provided by teachers and friends several times per month. She admits that the turnout has been varied, and student attendance is correlated to what foods they are serving (she has tried several times to serve quinoa as a main dish, but it has been met with little success).



Figure 16: Comida típica, consisting of chicharron de llama, potato, and quinoa.

This turn away from comida típica is not only about student performance and health, but is also about a loss of culture. For Isabel, food is the intermediary between people and the land, and with dietary changes come changes in the way that the land (or pachamama) is understood. Through the cultivation and consumption of food, a spiritual connection to the land is gained. For Carlos and Isabel this comes from the constant working of the land with your hands, touching the soil with your bare feet, pulling food from the ground and knowing that it will soon be eaten and become part of you. This theme is no different from the ideas that are held by Roberto and Rosa, where the cycle of

life is completed in the consumption of these foods (again bringing to mind Orlove and Paulson and the importance of being near the earth in indigenous culture). As Paulson (2006) suggests, eating traditional foods that you produce yourself is essential to living a way of life that is closer to the pachamama. Eating becomes more than just a way to satisfy caloric needs, but goes beyond to satisfying other socio-cultural needs.

Food is at the epicenter of cultural and social life. Commensalism (the act of eating with others) has always been integral to uniting families and communities and is seen during all of the most important ceremonies, including *Corpus*, the *Año Nuevo Aymara*, and cultivation. Such is the importance of food in Aullgeño culture that one is never asked if they are hungry or if they have eaten, but rather the question is parsed through the term *alimentarse* which goes beyond our Western notions of calories and nutrients,<sup>23</sup> and includes the deeper nurturing of the body from the both the earth and the community.

According to Isabel these notions are of course being lost by the youth. Isabel says that food is no longer only found in the home and eaten with the family, but now is common to see children and teens to stop at the family-run tienditas to buy candy, cookies or soda. From Isabel's point of view, this is causing many of the youth to lose their connection to the as well as their respect for it. Her comments make sense if you consider the attitude towards trash that in the community: candy and cookie wrappers are found throughout the dirt streets until it is swept up and burnt by the women heads of the

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<sup>23</sup> Several times after having had a snack this question was posed to me. Each time it became apparent that the mere act of having eaten something was not the same as to *alimentarse*—in Catholic parlance, it would be along a similar vein of eating without saying grace.

household. Her students see that there is money that can be gained from the land through the production of quinoa, seeing only the money and not acknowledging the cultural appreciation for the land.

#### **POLITICS, SOCIETY, AND CAPITAL**

When it comes to extra income derived from quinoa sales, Isabel was quick to point out that not all the money earned goes back into the production of food or towards the purchase of *cosas nesesarias* or necessity goods. *Cosas necesarias* can be seen as anything from cooking oil, to bulk foods, to clothing. Isabel noted that most of what was available at the nearby market in Challapata could be seen in this vein, however it has become increasingly common to see the men looking at motorcycles and cars while the women bargained for food. While she has seen these changes through her schoolchildren (the young boys talking about motorcycles during class) it becomes most obvious to see during the times that she spends sitting socializing with her cousin (Juanita) at one of the local *tienditas* (local stores) in the main plaza. *Tienditas* are ubiquitous in most small towns throughout Bolivia, and are small stores out of the front of the home, offering a variety of non-perishable goods (crackers, cookies, laundry soap, Coca-Cola, peanuts, beer, *Guabira*, and sometimes school supplies). It is not uncommon to see a number of these on any one street, typically operated by the women of the house. The central location (which also happens to be the bus stop) makes the *tiendita* an excellent place to observe daily community activities.

Juanita, who spends most of her day sitting on a small wooden chair knitting and socializing with passersby, has made several tirades about the increased noise in the plaza, mainly coming from the newly purchased motorcycles that have risen in popularity alongside quinoa production. From this vantage point, it's not uncommon to see the

newly acquired motorcycle paraded around the plaza, being chased by several young boys, stopping on occasion to be scrutinized and approved by the group of men that perpetually stand outside the office of the mayor. Whether or not the motorcycle has become a distraction from livelihood activities or has become yet another tool to carry them out, Juanita and Isabel were not able to say.

Another aspect of producer life that was observed by Juanita while sitting on her corner was the increase in consumption of alcohol. Both the local beer (Huari) and *aguardiente* are sold in Juanita's market and she informed me the frequency in which alcohol is consumed has increased.<sup>24</sup> Although the consumption of beer and liquor have always been common during festivals and on special occasions, Juanita's observations indicate that drinking has become more frequent. Upon mention of this to Isabel (which was ironically while sharing a bottle of Huari) she agreed that in her perception, the regularity of alcohol consumption has indeed increased in recent years. However, opposed to Juanita, she didn't know if it was a result of people having more money with which to buy alcohol or that if it was because with more cars came a greater capacity to transport the beer and Guabira into the community, or simply a change in values.

Of course, none of the above is not to say that Roberto the llamero or Isabel would abstain from having a libation if it were offered to them, nor is it to say that the presence increased frequency of alcohol is bad. On several occasions my conversations with Roberto or Isabel involved bottles of Huari during the day, serving as a way to relax after a long day and as a social lubricant. Additionally, even though my conversations with Isabel and Juanita indicate that alcohol consumption has increased in frequency in recent years, it should be noted that according to a former Peace Corps member who

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<sup>24</sup> A 96.2 percent alcohol by volume that is sugar based and branded under the name *Guabira*. Literally ethanol, it is the drink of choice for festivals due to its available access and inexpensive nature.

worked in Pampas,<sup>25</sup> even 12 years ago prior to the boon in quinoa production alcohol was a frequent part of social life. During festivals it is used to make an offering to the pachamama (challar) before it is drunk and passed along to the next person. The extent of these changes in consumption patterns as noted by Juanita and Isabel are still unclear, and suggest possible topics for research in the future.

Isabel and Carlos' account of changes in the community are viewed through the separate lens of politics as well as school. As part of the Sacatiri ayllu Carlos took his turn as one of the six autoridades to govern the community for a year in 2008. As an autoridad, Carlos was able to see how each ayllu needed to work together in order for the community to function properly. However, he noted as quinoa becomes an increasingly popular cash crop, disputes amongst the six ayllus have arisen, especially after Pampa Aullagas became a Territorio Communal de Origen (TCO). Isabel and Carlos explained that being a TCO did guarantee their self-determination, it has been met with many difficulties largely caused by the community's recent integration into the global quinoa market. During the months of May and June in Pampa Aullagas, meetings were held by each of the six ayllus in an attempt to create an indigenous constitution for the Marka. The first draft of the constitution (created with funding from the Morales government) addresses many issues in the community, from human (elderly, women, and children's) and nature's rights, to education and structure of the government. Difficulties in the constitution have arisen, however, from the Jiwapacha and Collana ayllus. Members of these ayllus feel that several of the articles of the proposed constitution may limit their ability to choose how much quinoa they want to produce and where to produce it in the future. Article 68 of the proposed Pampa Aullagas constitution, for example, states that

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<sup>25</sup> Don Simon, who was a Peace Corps volunteer from 1997-1999, currently resides in Austin, Texas and was interviewed about life in Pampa Aullagas upon returning from field research; his points of view and memories of the community have been instrumental in positing Pampa Aullagas in its present day context.

agriculture must remain organic and be cultivated in a sustainable and culturally appropriate manner. The complaints have largely been from the two leading quinoa producers of the Marka, Lupiquipa and Bengal Vinto,<sup>26</sup> as they feel that the constitution is not protecting their rights as producers, and is limiting their ability to expand cultivation as they see fit. During the Jiwapacha ayllu meeting in Bengal Vinto, community members also complained that there were too many restrictions on who was to be allowed to participate in leadership roles, as it limited those roles to people living in the community (it should be noted that the community members raising many of these concerns had travelled from Oruro, Santa Cruz, and La Paz to attend the meeting).

The official adoption of an indigenous constitution has been met with much resistance, predominantly as a result of infighting between those communities and ayllus that have high quinoa production and those communities with few resources appropriate for commercial production. While the community has never been free of conflict, there have always been mechanisms agreed upon through ayllu leadership to deal with it in the past. Carlos noted, however, that this has begun to change, turning towards a much more individualistic way of looking at things. Those estancias such as Bengal Vinto and Lupiquipa who already produce large quantities of quinoa fear that a new marka constitution would legally limit their production of quinoa, their ability to expand harvested acreage, and their choice of methods of production, theoretically limiting their future growth. As Isabel put it, estancias such as Lupiquipa and Bengal Vinto have grown economically with overall support from marka leadership; however, as they have now become economically independent from the marka, the need to maintain community cohesion with the marka is unnecessary.

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<sup>26</sup> One of the wealthy members of the ayllu who now resided in Oruro informed me of his plan to plant 50 Ha of quinoa right outside of town and the proposed constitution would make this impossible.

Further political change can be noticed in the community as a result of the recent quinoa boom. The autoridades, who have typically focused on a wide array of issues that the community has faced, have become predominantly concerned with how to increase the production of quinoa across the community. In the past three years Carlos has seen the amount of time dedicated to quinoa production increase substantially, something which has had a noticeable impact on community cohesion. Carlos finds it even more worrisome, however, with the extent that the autoridades are cooperating with outside organizations, including a variety of NGO's and the various producer cooperatives. While outside organizations have the potential to fund projects that could increase production, both Carlos and Isabel fear that these may influence future decisions about community resources, as well as push quinoa production in a direction that is not culturally sustainable or environmentally sustainable.

What makes Isabel and Carlos important actors to follow is that they remain in between the agropastoralist and the producer. They participate to some degree in subsistence agriculture, through growing their own potatoes and raising their own llamas. However, they also have tried to become part of the export economy by trying their hand at commercial quinoa production. In this sense, they can relate to both the values of Roberto as well as the producer, whose life we will consider next.

Additionally, Isabel and Carlos offer unique perspectives on changes that are occurring in the community (whether these are the direct results of increased participation in the export market however, needs further analysis). As a teacher, Isabel has a connection to the community at a different level. The actions of her students at school, to some extent, are reflections of how things may be changing at the home. The level of education that Carlos and Isabel have also gives them access to ideas that may not be available to the producer or the agropastoralist, enabling them to see the extra value that

their culture gives them. At the scale of the community, Isabel noted the majority of Aullgeños had stopped eating quinoa. Where other informants had noticed a similar drop in quinoa consumption, Isabel was able to articulate that these changes in consumption patterns led to unexpected consequences, including the weakening of family ties and the decreased attention spans of her students while in class. From Carlos' point of view, the transition to a greater emphasis on production stood to cause conflict between different ayllus as some estancias were better suited for quinoa production and others were not. Growing inequalities between different groups was beginning to bring out conflicts amongst ayllus that had been dormant. The lessons from Carlos and Isabel as between the agropastoralist and the producer are perhaps slightly intangible, but essential to understanding how changes in productive capacities alter a community—these lessons also foreshadow some of the social and dietary changes that can be seen from the producer's field of view.

## Chapter 5: The golden seed

The final vignette in this thesis is that of the modern commercial producer. The commercial producer, who we will call Don Rogelio, represents a third way of life that both contrasts and intersects with the agropastoralist (Roberto). The modern producer represents not only the immediate present, but also raises questions about the future of Pampa Aullagas. The attitude and lifeway of the producer illustrate some of the benefits of quinoa production, as well as some of the externalities associated with the natural environment and its ecosystems.

Don Rogelio has been producing quinoa for the commercial export market since around 2002. He lives with his wife, son, daughter-in-law, and two small grandchildren in a small adobe house that sits on the outskirts of Lupiquipa, one of the larger estancias that located roughly 38 kilometers south of Pampa Aullagas. Like many of the estancias in Pampas, Lupiquipa is located at the base of a small hill (or *cerrito*) that in the past provided a diverse environment for the production of a variety of crops (Figure 17). Looking at the *cerrito* today it becomes obvious that traditional cultivation for familial consumption has been given up since the quinoa boom began at the turn of the 21st century.



Figure 17: The view from the Cerrito Pedro Santos Willka on the outskirts of Pampa Aullagas illustrates the characteristics of a managed hill landscape.

The hill is pocked by a series of short rock walls that once served a variety of purposes, including dividing each small familial plot, providing fencing to contain llamas and sheep, and minimizing the wind erosion that is characteristic of the region. The small plots show little sign of recent agricultural use, and have been overwhelmed by leña, paja, and other opportunistic colonizers common to the area. While the leña and other flora have again flourished on the cerrito, one look at the flats below reveals a much different situation, one where the land has predominantly been converted over to quinoa production.

The new rectangular plots—which range from 5-15 hectares—were rapidly developed without an overall plan. As one teacher in the community informed me during my first visit to Lupiquipa, “*Antes habia pura papa, pura papa... ya solamente hay quinoa*” (before there was only potato, but now there is only quinoa). Her comment is indicative of how rapidly the community has changed, with a near complete conversion of livelihood strategies from production for self-reliance and local trade, to production for the commercial export market. The crops of Lupiquipa, predominantly white quinoa real, will be sold to one of two different co-ops in Challapata or to private intermediaries often referred to as *coyotes*. Regardless of who the seeds are initially sold to; however, they will be re-sold: the higher quality seeds to one of the many exporters in the country for sale to North America and increasingly, Japan and Europe; the smaller and lower quality seeds for domestic consumption or sale to Peru.<sup>27</sup>

Access to Lupiquipa is difficult—while it lies in relatively close proximity to major roads (even major or commonly trafficked roads are rarely paved) access from these thoroughfares requires traversing through the pampa over a series of sandy, rutted, or otherwise simple trails. In short, Lupiquipa’s remoteness presents the first difficulty for the commercial producer, as it limits access to both equipment and the markets of Challapata. This difficult accessibility is generally overcome with the producer’s first major purchase—a pickup. Don Rogelio’s pickup—a battered Ford that appears to have been assembled at some point during the Carter administration—was his second most prized possession, closely behind his tractor (Figure 18).

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<sup>27</sup> Several of the producers voiced concern that their products were being sold to Peru and re-packaged for sale to the U.S. and Europe; these producers feel resentment towards Peru, in they get the credit for the work of the Bolivian farmer.



Figure 18: Don Rogelio's Massey Ferguson tractor threshing seeds.

The truck, while old and dented, is essential to Don Rogelio's success as a commercial producer. As he explained to me, in the early years when he was just beginning to dabble in commercial production, he was forced to pay a neighbor who resided only part time in Lupiquipa (the other part of the time was spent in nearby Oruro where more job opportunities presented themselves) to take his crop to the market. This

was economically plausible during the beginning of the boon when quinoa supplies were relatively low and the prices received rose steadily for several years.<sup>28</sup>

When Rogelio and his family first began production, the quinoa boom was just beginning. In the early 2000s as the seed became popular, prices to the producer did not increase as one would expect, largely due to increased demand being met by an increasing supply. However, the slightly higher prices offered by the nearby co-ops for organic certified quinoa, such as ANAPQUI (Asociación Nacional de Productores de Quinoa) and APQC (Asociación de Productores de Quinoa y Camélidos) motivated many residents of Lupiquipa to make the transition from subsistence cultivation to market production, as a clear market existed. Depending on the capital and technology accessible to the farmer, quinoa cultivation can either require a lot of labor, or relatively minimal labor (as evidenced in methods used by Roberto and other *antiguos*).<sup>29</sup> As Rogelio explained, those just beginning production before access to cash for the first time—especially the small family farmer—quinoa tends to be labor intensive, requiring tremendous labor inputs to successfully plant, harvest, and process the seeds for sale. Not only does initial production tend to be more labor intensive, but it also requires a steep learning curve. While Aullgeños tend to be intimately connected to the land around them, their knowledge of how to manage for intensive production is severely limited, as they have never had to deal with the standards demanded by the market. This is both through

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<sup>28</sup> A note on quinoa prices: empirical evidence (FAO statistics) suggests that the value of quinoa has only increased, however many farmers complained of prices declining. This discrepancy could likely be attributed to two reasons: the cost of living has increased disproportionately to the increase in quinoa prices or prices offered to farmers by the coops or coyotes did not reflect the international rise in prices.

<sup>29</sup> Spanish for *old fashioned*, they are typically associated with older agropastoralists in the region.

production norms to maintain organic certification as well as consumer demands (most Aullgeños will say that the colorful red and black quinoa is not desirable to eat and is far more difficult to grow, however these varieties are in high demand by consumers).

While Rogelio's entry into the quinoa market was well timed to receive the highest prices of the boom, it was still considered late in most regards (in the neighboring province of Salinas de Garci Mendoza, market oriented quinoa production—whether export or domestic—has been common for over 25 years). The high prices for organic quinoa offered during the late 2000s did indeed offer opportunity for economic growth (Table 2), but as farmers were not familiar with the nuances of the commercial market, they were forced to adapt their production techniques on the fly, essentially jumping 'feet first' into market production practices that few were familiar with.

Don Rogelio's first year in production—while successful in terms of yield—did not result in high profits. Not only were prices still lightly trending downwards. Also, as is typical for those entering the market for the first time, the money he received for his first two hectares of production went to pay for seeds, extra tools (rakes, shovels, sifters, and a mill) and transportation to and from the market. His second and third years were more successful from an economic point of view, although the prices were still low, but after his third year of production Rogelio was already able to purchase his Ford pickup. The purchase of his pickup allowed him an edge over other emerging producers in the area: not only did it facilitate easier transport of his own crops to market, but also enabled him to take his neighbors' crops to market for a fee, essentially subsidizing his costs for

fuel to the long trip from Lupiquipa to Challapata, as well as maintenance and repairs which are frequent on such an old vehicle.

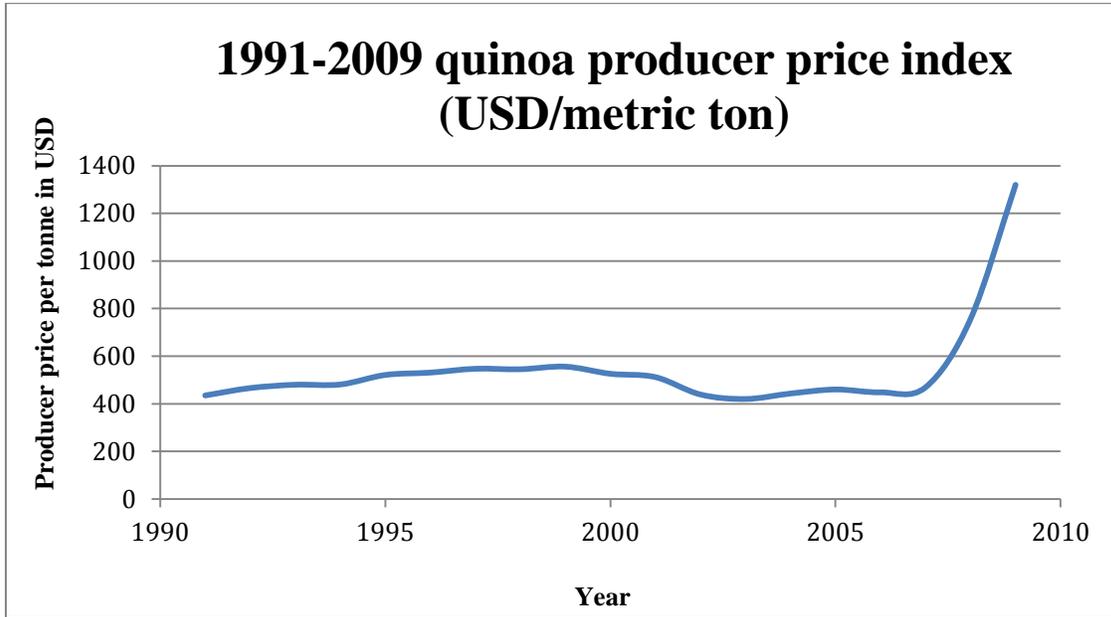


Table 2: Price (USD/metric ton) of quinoa to Bolivian producers from 1991-2009 (FAO, 2009).<sup>30</sup>

As Rogelio’s experience producing grew, so did the area he brought under cultivation. Two hectares spread to five, five to ten. In 2007, right before prices took a huge leap, Rogelio made his second big purchase—his red Massey Ferguson 590 tractor and plow (he referred fondly and often to his *barbechito*, or little plow). For the first time he was able to till his own fields when and where he wanted them, further reducing his output cost to others and increasing his independence from others in the community whom he once relied. The tractor—which he purchased used in Challapata and cost

<sup>30</sup> Data retrieved from the FAO was downloaded in April, 2012 and shows the most recent empirical statistics. As the data does not differentiate between conventional and organic production, the graph is only used as a trend line to illustrate when and how much prices have risen in recent years.

roughly fifteen thousand dollars—was financed through a low-interest loan made available by INEPRO in Challapata (Instituto para el Desarrollo de la Pequeña Unidad Productiva).

When talking with Don Rogelio about quinoa prices and his ability to remain competitive in the market, he explained to me that prices have recently become unpredictable. In his early years, as the prices and yields were on the rise, the tractor paid for itself. As more people have joined the market, increasing the aggregate total under production, Don Rogelio feels like his earnings have become less reliable. When he first began production, the prices were low, but anticipated. A degree of predictability permitted him capacity to plan ahead for the end of the year, because even if prices were low, he knew that they would not fluctuate much from year to year. In the past several years, however, his gross income has changed: in 2010, price for quintal of quinoa was Bs 750 (100 USD); in 2011, the price fell to Bs 520 (74 USD). Rogelio intended to sit on his crop until November, storing it in a nearby APQC storehouse in hopes that prices would rise again by the fall. Most members of APQC store their crops until the prices rise, taking advantage of storage services provided by the co-op. Uncertain prices combined with uncertain yields have made planning for the future difficult (Jacobsen, 2011).

This takes us to what many farmers, including Rogelio, are facing towards the end of 2011: unstable prices, decreasing yields requiring increased inputs, and payments and repairs on equipment. The combination of these factors reduces the profits possible through the market to the producer. Rogelio (and others) have resorted to both expansion

and intensification as a solution to this decreasing predictability. In 2011 he had not only expanded the area under cultivation (he had added two new hectares from previous years) but also plowed *tola* and other plants into the soil in order increase the biomass and nutrient density of his fields (in other areas where llamas and vicuña are abundant, farmers have increased the use of camelid manure in their fields, however a lack of llama in Lupiquipa makes this difficult and costly for Rogelio). To help with his tractor payment and costs of operation, Don Rogelio has also began to hire out his tractor, providing tillage to those who do not have such equipment, charging Bs 250 to plow one hectare of land (a job that takes on average two hours and costs at least half that in fuel to operate his machine).

A final factor that Rogelio has had to consider in recent years is that of equipment maintenance: there are no mechanics in Pampas (the nearest one resides in distant Challapata). His tractor is now 32 years old and requires more repairs every year. While Rogelio and his son are still able to make basic repairs and maintenance on the machine, they both fear a major mechanical failure during harvest or planting could devastate their production for an entire year and threaten to permanently jeopardize their ability to compete. In a sense Rogelio is faced with the same ‘no risk no reward’ situation that many businesses all across the globe deal with—in order to keep a competitive edge, they are forced to further increase capital investment. While this does make them competitive in the present, it decreases their resiliency in times when prices oscillate.

Perhaps the best way to approach a producer is to offer assistance as they are working their fields during harvest (most are lacking in the area of labor and any help

outside of the family is welcome—especially when abundant coca is offered). Keeping in tradition with the Andean concept of *mink'a* and *ayni*, all producers who were met in this manner offered me a simple comida as a trade for my labor. As a result, I have become somewhat accustomed to typical meals of producing families both in the field and at home. Having dedicated the majority of their time during harvest and planting to their quinoa crops, many farmers have minimized the cultivation of other traditional foods, such as potatoes and llama or sheep, the extra income gained from quinoa providing them with the ability to buy foods (typically rice, noodles, and sugar) which they can buy at the markets in Challapata.

Early on when I asked producers about their diet, the majority of men became defensive when asked about their familial quinoa consumption: they insisted that the family ate quinoa anywhere between three and five times per week, and more often during holidays and festivals. In striking contrast to men, women answered that while their past diet only consisted of traditional foods, their new diet was predominantly based on purchased food (Flora told me “before we ate potatoes, chuño, quinoa and llama... there was never rice or noodles”). In the past five years their diet has changed and now consists predominantly of rice, noodles, sugar (mainly brewed with coca tea or coffee), and potatoes, all of which are comparatively less expensive than quinoa itself when purchased in bulk at the Challapata market.

While Don Rogelio’s narrative and beliefs are similar to those of his peers in many ways, he was different than other male producers in his openness to talking about these dietary changes that they now face. After assisting with processing quinoa for sale

one afternoon, Rogelio and Flora invited me to their home to eat in reciprocity for my day's labor. In his two-room adobe house, Flora brought me lunch, which consisted of rice, one fried egg, and what was eventually identified for me as '*estomago de llamita*'. With the quinoa-less meal in hand, I asked Don Rogelio how much quinoa they typically ate, thinking it would be surely a lot considering the quantity which they produced. His answer however was quite the contrary: none. He sheepishly admitted that the meal which I was eating has become typical of Aullgeños who are now producing quinoa for the market (he later took me to his storeroom which revealed a bag of rice, two kinds of noodles, and potatoes—nowhere was quinoa to be found).

While not eating the food that you produce seems contrary, it is typical not only of Aullgeños, but of commercial producers of other foods as well (for example, I was raised on an apple orchard and can readily admit that the last thing chosen for a snack was actually an apple.) In the case of quinoa, studies have shown that the average producer maintains between 10-14 percent of their quinoa for autoconsumption (Laguna, 2008; Ofstehage, 2010; Winkel, 2011). Rogelio indicated several main reasons that he and his fellow Aullgeños don't eat the food that they cultivate for sale. The first and primary reason that Rogelio stated was simple: economics. Thinking back to the concept of comparative advantage (Ricardo, 1973) it is best to sell what you can produce comparatively cheap and buy goods that are comparatively cheap for others to produce. While the term was not familiar to Rogelio, the concept was, as the example he gave me followed the same logic: when one quintal of quinoa is sold, a person could typically buy two quintals of rice, two of noodles, and one of sugar—relatively speaking, selling

quinoa to purchase food increases the total available calories available for consumption, thus quinoa takes second chair to these inexpensive foods (Hellin, 2005). Examples of how much rice, noodles, and sugar could be purchased with the sale of one bag of quinoa varied—likely, this is due to women doing the bargaining for household food at the market in Challapata.

Considering that the average producer was faced with declining yields, increased costs of inputs, and lower prices fetched for each quintal, it is no wonder that quinoa is sold rather than kept for home consumption (and explains the contents of Flora's storeroom). Furthermore, the time which it takes to prepare quinoa in its various forms is perceived as a labor cost, as the male producer views this time as time that could be spent for an economically productive activity on the field. The removal of the saponin from the seeds is a gendered task, and it takes the women of the household an hour to process two kilograms of quinoa (Astudillo, 2007; Lopez, 2011). When comparing rice and noodles to quinoa, not only are they inexpensive but require relatively little labor to prepare, freeing up time (albeit nominal) to assist with other household activities.

A final reason for the reduced consumption of quinoa by producers—while rarely explicitly stated—lies in taste: having been introduced to a Westernized diet, Aullgeños have lost their taste for the seed, preferring the simple taste of rice and noodles and the simple sweetness of sugar to the nutty, often harsh flavor of quinoa. This change is especially evident in the youth, as many, especially the youngest, have not grown up eating quinoa to begin with. Eating a Westernized diet perhaps gives them 'upward mobility' as Weismantel (2010) has suggested, fulfilling their aspirations to live like

those in the surrounding cities. Flora informed me that even if they kept quinoa to eat, her grandchildren would not eat it, as they have not acquired its unique taste or texture. Rogelio and Isabel both said that quinoa was a *comida fuerte* or *picante* (heavy or spicy food) that they found difficult to digest, especially at night (Johnsson, 1986).

However, while Westernization has indeed caused changes in consumption patterns, the true causal relationships are often complicated. In the end, Rogelio and Flora illustrate that the diet of the producer has indeed changed, albeit for a variety of reasons that vary from family to family. With these dietary changes come myriad consequences that are perceived to disproportionately impact the youth and children in the community. The community's sole doctor—Boris—informed me of a government-sponsored program which tracks maternal and infant health in an effort to curb malnutrition in rural areas. Part of the program, called *Desnutrición Cero*, requires that all children from birth until the age of five in rural areas are closely monitored for growth via basic metrics such as bodyweight and height. Surprisingly to Boris (who hails from La Paz), chronic child malnutrition rates for children between the ages of two and five are currently at 50 percent in Pampas, up slightly from the previous year. While malnutrition has always been endemic to the region, the chronic malnutrition rate persists—it is even increasing—despite increased government spending on programs that provide nutritional supplements, such as a powder known as Nutribebé provided to families in need with children under the age of five. One of the assistants working in the office of the Alcalde pointed to several boxes of Nutribebé that had been sitting for some time, indicating that while resources are made available, distribution is often insufficient.

I asked Boris why, despite increased government funding directed at curbing malnutrition, have the rates increased? For Boris (and several mothers who were interviewed throughout the Marka) these rates were largely perceived to be a result in the dietary shift from traditional Andean foods (potato, quinoa, and llama) to an increasingly Western diet consisting of starches and simple carbohydrates. Rice and noodles have taken the place of quinoa at lunch and dinner, and are served in heaping portions alongside a fried egg or a small portion of llama. Nutritious breakfast items, such as pito have been replaced by sugar loaded drinks, like coffee, tea, or *Chocolike*. *Chocolike* is an enriched chocolate milk powder that has become popular among in Bolivia as a hot drink that is often drunk in place of breakfast or served alongside a piece of bread for dinner. According to Boris, the replacement of quinoa in the diet by less nutrient-rich alternatives has contributed to the diminished physical growth of children in the short term. Diminished growth caused by malnutrition in infancy and early childhood has been indicated to impact intellectual development of children up to five years old (Lloyd-Still, 1974; Walker, 2007).

The dietary changes that are being experienced by quinoa producing families have also created profound, spiritual changes as well. Commensalism has long been a fundamental part of Andean cultural life. Here, one is never asked if they hungry (as in with '*tienes hambre*' which is used in other Latin American cultures); instead, '*has tenido alimentación*' is used, relating eating not to hunger, but rather to a need to be nurtured. Eating therefore transcends mere satisfaction of caloric needs, extending to fulfilling the need for a spiritual connection with the land. When they eat what they have harvested from the land with their own labor, they are completing a cycle of understanding between them and the earth (Orlove, 1998; Paulson, 2006).

This point, while again subtle, has a large impact on how people view or treat the land. Looking back to Roberto, the llamero, it is easy to see how food consumption is closely linked to respect for the land, especially considering how Roberto saw a lack of respect for the healthy future of the land among commercial producers, who he said were taking a ‘we will take what we can for now while we still can’ point of view. Looking at Don Rogelio shrug his shoulders in response to the increased wind erosion caused by commercial production is frustrating. He acknowledged that it is an issue, yet his attitude is that it is a problem that can’t be fixed. His indifference to the erosion problem indicates that he sees the land like so many others in producing regions—a commodity which can be traded.

#### **THE ENVIRONMENT**

While Roberto, Isabel, and Don Rogelio each represent a different point of view on how the land should be treated, they agreed on the issue of erosion (Figure 19). Wind erosion in the altiplano is not a new occurrence, since winters are dry and very windy. Over time, wind events have formed numerous Aeolian dunes in the former lake-beds that are characteristic of the altiplano. All of those interviewed agreed that commercial production practices have exacerbated this erosion through both the removal of perennial ground cover (leña and paja) as well as through the use of tractors and plows. The removal of ground cover for annual crops and the connection to wind erosion is well documented (PROINPA, 2004; FAUTAPO, 2008; Jacobsen, 2011). Tractor usage in the altiplano leads to the loosening of broad swaths of soil, exposing soil to the erosion by wind, sun, and rain. In addition to the impacts of tractor and plow use during cultivation, tractor use can also contribute to soil erosion and compaction during the milling process.



Figure 19: Soil blows off of a tractor cultivated quinoa field during a wind event.

For most commercial producers entering the market for the first time, tractors and cars are the predominant forms of threshing the seed from the stock, as commercial milling devices are prohibitively expensive. For this technique of seed dehiscing, cut and dried stalks of quinoa are placed on a large tarp (often canvas' reused from bags of lime or other chemical inputs that have been sewed together) with the seed heads facing toward the center of the tarp. The two rows of stalks on the tarp are about six feet apart, roughly the distance between the two wheels of the tractor. The tractor (or, in some cases, a pickup) is then driven over the quinoa stalks to separate the seeds from the dried stalks.

In order to remove all of the bits and pieces of the stems, the tractor—which weighs around two metric tons—must repeatedly drive over the quinoa, which results in the compaction of the lower foot of soil and pulverizes the top several inches into a light dust, which has been observed to blow away with even the slightest breeze (Figure 20).



Figure 20: Pulverized topsoil following the dehiscing process.

Working the rake with Flora during this process, it was not uncommon to see what appeared as miniature whirlwinds coming off of the field as the wind swept across the plots. Later, when I asked Rogelio if they noticed the same phenomenon and if they

did anything to prevent it, he admitted that yes he did notice; however there was nothing that he thought could be done about it (“*No podemos hacer nada*”). On the other hand, when Roberto noticed the erosion coming off of his fields, he altered his production methods in order to mitigate the problem. This was achieved through maintaining hedgerows around five meters wide between plots of twenty meters that are absent in most commercial fields. For the commercial producers, wind erosion was simply seen as another cost of doing business. Any concern they had for the environment was trumped by the need to finish the harvest in order to turn a profit, which was necessary to ensure that they could pay for the associated costs of production, as well as food for their families.

As Don Rogelio explained to me, a typical quinoa field in Pampas reached its peak after about five years—that is unless steps were taken to maintain soil organic matter and fertility. As previously noted, Rogelio’s predominant method of contributing to soil organic matter was to plow under *leña*; however a majority of producers used llama manure to maintain this balance. Llama manure, which is easily obtained from the pampa, has been the predominant method of fertilization in this region for centuries and has enabled modern producers to maintain organic production with relatively low input cost. Producers who work with APQC tend to have their own llama herds, giving them plentiful access to the precious manure, while others often have to purchase the abono from *llameros* in other parts of the *marka*. As a result of the quinoa boon, Rogelio explained that the once worthless abono now sells for between 500-800 Bs for one truckload, which has caused a rush on the piles of abono that once littered the pampa.

At the time of this research, llama manure was still abundant in most parts of Pampas for application to quinoa fields, however the degree to which this will remain sustainable in the near future is debatable. From the point-of-view of Rogelio and members of APQC, the pampa has plenty of space to accommodate both quinoa fields and llamas, which are seen as an integrated system (as one member of APQC boasted, the only integrated llama-quinoa cooperative that exists in Bolivia). In the immediate future this seems to be true. However others, such as Isabel and Carlos, have a different opinion: they believe that removing abono from the pampa to fertilize quinoa plots will reduce the ability for leña and paja to grow growth of leña and paja, which are necessary to feed the llamas. The removal of llama dung from the pampa for commercial field fertilization can be seen as an additional tax on the delicate altiplano ecosystem where, overtime, soils supporting leña and paja are deprived of necessary nutrients, slowly inhibiting their ability to grow. Similar phenomena have been documented in the Himalayas, where the removal of yak dung for cooking fires and agriculture has contributed to a highly unstable and degraded environment (Winterhalder, 1974; Ives, 1987). Here, the increased demand for llama manure presents not only a problem for future quinoa production, but threatens to disrupt the ecological balance of the entire ecosystem as manure dispersal becomes increasingly oriented towards commercial uses.

It would be difficult to mention the commercial production of quinoa without addressing the use of chemical pesticides, fertilizers, and herbicides. Of the producers that were met in Pampas, all said they didn't use chemicals in their crops and that they were purely organic producers. To me it seems unlikely that no chemical inputs are used in the commercial production of quinoa, although it is a possibility. If no fertilizer is used, more than likely it lies in economics (Jaffee, 2007). Given the already tight cash margins for quinoa production, farmers are hesitant to increase their outputs while there

is still abundant land and llama dung available. It is also possible that farmers are using inputs and it was not mentioned to me during my research. Possible language barriers could have prevented the thorough discussion of fertilizer, herbicide, and pesticide, as the use of these terms has not been fully incorporated into the region's regular vocabulary. A second thought is that farmers that produce for the organic market and are part of a cooperative (APQC or ANAPQUI) are not always inspected individually. Often, certification of the cooperative is only contingent on inspection of a sample of farmers (Jacobsen, 2011). It is possible for those who are not inspected to use chemical pesticides, fertilizers, and herbicides as long as they are not part of the inspection process. In other words, chemicals may be used, but no one speaks of it.

#### **COMPLETING THE CIRCLE: REFLECTIONS**

The beginning of this thesis was introduced by the text found on several packages of quinoa at a grocery store in Austin, Texas. I would like to end my thoughts on the producer by briefly revisiting these labels and the implications that they have on the rural producer. It is my hope that by addressing these labels and the opinions voiced by Roberto and his colleagues that I can complete the circle that labels such as Fair Trade imply. As Michael Goodman suggests, Fair Trade creates a “transnational moral economy” that connects “producers and consumers economically, politically, and psychologically,” where a just price is delivered to the producer by the consumer, creating a connection between buyer and grower which is not present in the conventional agro-food system (2004; 891).

To complete this cycle, three quinoa products purchased from the U.S. containing Bolivian quinoa were brought to producers of Pampa Aullagas. While it is impossible to ascertain whether or not the quinoa that they produced made it into the final product, their

reactions when seeing what is grown by their hands on their land in a package directed towards the consumer are striking. One of the packages contained noodles made of quinoa while the other two were raw, washed, quinoa seeds (Appendix A).

Rogelio was shocked by the supermarket price for the small quantity of quinoa presented to him: the mark-up at the grocery store was exorbitant. The one-pound bag of white quinoa real that I brought cost eight U.S. dollars in the market where it was purchased, however the producer would only see around 78 cents per pound for the highest-grade quinoa he would harvest. The bag of red quinoa real which I brought was perhaps even more striking to Rogelio: producers of red quinoa (which was more difficult to grow and arguably of lesser quality) received a higher price, yet the seeds were sold for the same price as white quinoa real in the U.S.

After recovering from his shock over the price that the consumer pays, Rogelio scrutinized both packages of washed seeds more closely (Figure 21): the package of red seeds contained a noticeable amount of white, yellow, and black seeds as well, all of different sizes. This variation in seeds and seed sizes seemed to frustrate Rogelio more than the price differential—in his eyes these seeds were not pure. The producer who painstakingly sorts his seeds out into different sizes and colors (all of which receive a different price at the market in Challapata) gets no say in how his final product is packaged or priced.

On the back of the package were cooking instructions, indicating that the product was to be cooked much like rice (much like how quinoa was prepared in *comida típica*). From Rogelio's point of view, this quinoa was virtually worthless for anything other than pito; for Bolivians, each grade of quinoa has a unique and specific purpose based on the quality of the seed. Here, all of the grades were mixed together which—in his mind—resulted in an inferior product.



Figure 21: Rogelio's son, Nestor holds the final product of his labors.

Don Rogelio and Nestor were frustrated that the consumer (or labeling organizations) were able to dictate to the producer of how his crop should be grown, being held to standards perceived as important by consuming countries. Conversely, the producer was unable to have any say on the packaging of his own product or how it should be consumed based on the grade of the seed. On the production end of the spectrum, the farmer was held to the highest of standards, getting a range of prices for his

crop based on the color and purity as well as the size; the final product however, was aggregated into one price for a variety of seed sizes the purity of which did not reflect the price.

In looking at the narrative of the producer we can see the direction that interaction with the export market is taking people living in Pampa Aullagas. While some of what I found while visiting with Don Rogelio is different, some things are the same as with Roberto and Isabel. As diet is one of the key elements discussed throughout the vignettes, we can see that the diet of the producer relies only minimally on food that is produced on his own. Much like the schoolteachers who produce food minimally for autoconsumption, the producer relies on the market to purchase the majority of his food, his caloric intake dependent to a large extent on rice, noodles, and sugar.

A reoccurring motif that has appeared throughout this thesis is that of cultural values, such as community, reciprocal labor, and a connection to pachamama. As an exporter of quinoa, Don Rogelio relies more on the labor and cooperation of his direct family and not the community that surrounds him, indicating that production for the export market may be associated with a shift towards a more private or self-reliant way of life. Don Rogelio did show that he still maintained a connection to changes in the landscape (he did note that erosion was a problem) but his lack of finding a solution to curb erosion caused by tilling his fields illustrates that the close connection and respect for pachamama may be minimized.

Another theme that Don Rogelio's story reveals is that the economic benefits of increased quinoa export are far more complicated than they appear. While the FAO

indicates that prices have skyrocketed in the late 2000s, conversations with Don Rogelio indicated otherwise. The prices actually received by the producer and how the extra capital is spent need further analysis. I do believe that my conversations with Don Rogelio show that increased connection to the export market increase uncertainty: prices from year to year will vary based on factors outside the hands of the producer based largely on changes in supply and demand. Finally, the producer remains disconnected to the final product of his labor. Even though there are strict standards on how he must produce his crops, it is not on equal terms, as he has no voice in telling exporters or retailers how his product should be packaged, sold, or consumed.

## Chapter 6: Discussion

Ultimately, the three vignettes presented in the preceding pages raise questions about the future of Pampa Aullagas. They illustrate how the commercial production of quinoa has impacted the natural environment and its ecosystems, as well as the social systems of Aullgeños which is tied up in various ideals of culture, identity, and relation to the Pachamama. Before I proceed with my discussion of these implications of commercialization of quinoa production, it bears noting that I encountered each of the three producers at the relative beginning of my field research, before I developed understanding of the cultural, spiritual, and natural life of Aullgeños. Thus, my discussion of the broader implications of the quinoa development is based on my own learning and observations in the sense of grounded theory, which is developed from on-the-ground experience and encounters. While the ideas that follow have been carefully documented with extensive field notes and photos, they may be presented in a tone which appears negative, possibly as a result of the romantic imprint left on me by the traditional pastoralists which I have met. However, even though these ideas are presented with a faint scent of pessimism, I feel that they are an accurate description of how commercialization for the western market has impacted the many aspects of Aullgeño social, cultural, and spiritual life at this precise moment in their history.

While it is easy to romanticize the independence and purity of indigenous communities throughout Latin America, it must be acknowledged that they have constantly had to reconcile their ideals with those from the outside, as they have engaged in trade and other economic and cultural exchange for centuries. Aullgeños are no different. Through llama trains the residents of Pampa Aullagas have a long history of trading with other communities; goods which were abundant in one place could be

transported to where they were not. With the modern cash economy, however, trade is no longer based on symmetrical face to face exchange between producers: the residents of Pampas are now producing for a ‘faceless’ consumer whose identity is obscured by the multiple middlemen involved in the export market.

The removal of personal interaction associated with the local market places the commercial producer at the mercy of the global consumer: the varieties that he plants are determined by those willing to purchase it. In the case of quinoa, these demands can be found through the top-down nature of organic certification, where those buying can dictate what should be grown and, to some extent, the conditions of production.

International consumers who purchase quinoa are typically economically well off. The reasons for purchasing quinoa parallel the reasons for purchasing most organic foods, and may include the desire to get closer to nature and eat ‘green’ or to eat healthy and pesticide free (Aldanondo-Ochoa, 2009; Zepeda, 2009; Smith, 2010; Johnston, 2011). In the same vein, producers are increasingly using the money that they make from exchange to purchase goods that are not essential to meet basic needs (motorcycles and alcohol). Western values of individualism and consumption are diffused through television or radios.

There were many nights during my stay that were spent in the *comedor* watching whatever show appeared on Pampa Aullagas’ one TV channel. My host, Don Manuel operated the sole eatery in Pampas. Every night during *cena* his five grandchildren would gather directly in front of the television with the adult men and watch intently whatever was showing, periodically exclaiming for their desire of the product featured in the commercial. Much like the Super Bowl phenomenon in the U.S., the show that was on became far less important than the commercials, all of which promoted some product that introduced a possible way of life that did not exist in Aullgeño’s minds before. Often, it

wasn't really the product itself that was the center of attention, but some other material 'thing' that was used as a prop or accessory in the commercial. Occasionally, a few of the products that were seen on TV appeared in the house of Rogelio, Isabel, or Don Manuel house after a trip to the market, notably a processed food like *Chocolike*. Chocolike is an enriched chocolate milk powder that has become popular in Bolivia as a hot drink that is often drunk in place of breakfast or served alongside a piece of bread for dinner.

The difference between necessity and want is most notable when looking at the storerooms of residents in the community. The well-stocked storeroom of the agropastoralist can be contrasted with that of the producer who has only enough food in storage to last a few months. While Roberto stores food that he produces for future years, Rogelio uses the money earned from the sale of his quinoa to buy food when needed. The money earned is normally not saved for future needs, but rather is seen as a windfall surplus that can be spent on luxuries. Through decades of experience, the agropastoralist seems to understand that there will be both good years and bad years, and that storing food for bad times that could arise is a commonsense solution to preventing hunger. Rogelio must sell all of his surplus food as its value is subject to change at any moment. Similarly, the Bolivian money that is earned from the sale of his crops has variable value due to inflation and is spent while the value is known

Contrary to what one would think intuitively, the increase in income has not led to a similar rise in health or nutritional wellbeing for the community. Money that is earned is not necessarily used to purchase food—and if it is, it is often used for food that is comparatively cheap and of lower nutritional quality. Here Doc Boris' (Pampas Aullgas' sole doctor) observation on rising chronic child-malnutrition rates makes a bit more sense: increased income is accompanied by a decrease in traditional foods, which has exacerbated health problems.

The use of tractors and other machinery has become ubiquitous in the region, and has arguably led to environmental damages. Here, damages experienced by producers are significantly higher than under the older and more traditional livelihood activities. In this sense we can see that traditional agropastoralists operate within a closed 'loop,' where what they produce stays within the community. The nutrient cycling of these traditional systems maintains the fertility of the fields and the pampa where essentially, nothing is removed from the system.

On the other hand, however, changes in the physical landscape caused by humans are nothing new (Blaikie, 1985; McCabe, 1990). Think back to Roberto and his acknowledgment that wind erosion has always been an issue that smallholders have had to deal with. However, as producers lose the cultural knowledge that once helped them to mitigate erosion, fields that were once separated with protective hedge rows or leña or rock walls are now left open, subjecting them the high winds of the altiplano. Even the llamero, who can be seen to have the closest connection to the land, has caused environmental changes. Overgrazing in Vila Vila is a possible cause of the change from tolares to pajonales; however, these damages took place over a longer period of time, making them less noticeable than the impacts of mechanization.

One of the more positive aspects of quinoa cultivation is that it has created a reason for people to come back to Pampa Aullagas. Outmigration to cities (specifically Oruro and Cochabamba) was noted by many people that I talked with in the community, especially those between the ages of 20 and 35. In most cases, the reasons cited were the same: there were no jobs in Pampas. As quinoa becomes more and more popular as a crop to grow, more people are returning to Pampas for at least part of the year.

The slowdown in emigration from Pampas not only keeps money and people in the community, it also helps to maintain the Aullgeño culture, which arguably was

becoming lost even before quinoa export. The development of quinoa production, as promoted by the state and NGOs has often come with preconditions, dictating that money for development of irrigation or processing facilities would only be offered if the community developed mechanisms to preserve Aullgeño culture. During the *Feria de Quinoa*, ayllus presented traditional dances and foods alongside their diorama for proposed development. This presentation was evaluated alongside a written plan that preserved tradition and culture alongside proposed development. Even Carlos noted that there had been resurgence in traditional ceremonies since people began taking an interest in quinoa production—the traditional sacrifice of the llama during the Año Nuevo Aymara was only recently reincorporated into annual festivities.

Development is too often thought about in either/or terms: preserving the culture of the llamero can only happen without development, or development requires giving up tradition and respect for the past. Perhaps it is time that this mindset becomes replaced with one where we look for spaces in which past customs can be incorporated with modern methods of production. In the case of quinoa, it seems that space may exist, as the revival of Aullgeño culture is emerging parallel to the production of quinoa. It is reasonable to believe that community cohesion and connection to the land can be promoted by changes in the production practices, where the ‘ethic of the pachamama’ is used to minimize any damage to the landscape that is associated with intensive and mechanized production practices. Aullgeños are in the process of creating a constitution for the entire marka to adapt to the changes that have been brought with quinoa production. Perhaps this can be seen as a way to incorporate the past cultural norms with the present export changes.

As we approach 2013—which has been declared the International Year of Quinoa by the U.N.—the future of research surrounding quinoa and smallholder livelihoods remains bright. Many themes that I have only given brief mention of require far more time and analysis. These include dietary changes, impacts on the landscape, where extra income is spent, to what extent the producer actually receives the full benefit of the high prices that quinoa fetches, and how indigenous communities manage communal lands as demands for quinoa producing areas increase.

This final question has become extremely important since the end of my research. In March 2012, riots were reported in two communities only 8 miles from Pampa Aullagas, leaving at least 34 people severely injured (Tapia, 2012; Colpari Cruz, 2012; Beltrán, 2012). The conflict—which lasted several days—was over a land dispute over who governed areas where quinoa was being grown. As more and more people see benefit in growing quinoa, conflicts like these may become more frequent as tensions that have been present between communities for decades come to the forefront once again.

The past 100 pages have attempted to address the nuances that are associated with the market transition that Aullgeños have experienced over the past five years. Some of these changes have been positive, some negative, and some have been inconclusive. If there is one lesson that we can learn, however, it that Aullgeños are a resilient group who have adapted to changes of all kinds in the past. In one word, they are resilient. Thinking about it this way, it's no wonder that their community has survived with considerable cultural continuity.

## Afterword

In July of 2011, two days upon returning from my research in Bolivia, I found myself at a farmers market in a small town in Oregon. Ironically, four of the six food venues at the market featured quinoa in some form or another as their weekly special. Having spent two months working with the seed, I was shocked to find that there were so many more opportunities to eat quinoa, even some five thousand miles away from where it was produced. This offered me several opportunities to talk with consumers of quinoa here, offering insight into why they eat it and what it means to them.

While at the market, one woman asked me whether their own consumption of quinoa was good or bad. Initially, my response was that it can't be good, citing that people no longer eat it because they can't afford it and that it is the cause of widespread environmental damage as a result of erosion and soil degradation. I even went so far as to mention Doc Boris' observation that the increase in chronic child malnutrition paralleled the decrease in quinoa consumption. The woman who I mentioned this to curtly defended her use of quinoa with "Well my kids love it." I find her comment striking, as it represents a typical disconnect apparent in the Western consumer, in that 'our' health and the benefits that are gained for us, far outweigh any of the negative implications abroad. On other occasions, consumers defended their consumption practices by saying that they were helping producers by allowing them to produce something which could be sold for a high profit. I found it a common response to defend actions as something that is *good* for those living in Bolivia.

After having written this thesis, I think back and wonder how I would have answered her question differently. From start to finish, I have been thinking about the quinoa question for almost a year and a half, and have yet to come up with a solution or an answer that could give justice to the complexities of the situation. Each small question that I sought to answer has atomized into countless more, in the end leaving me with more questions than I have answers. So, for those of you who have read this thesis and are wondering whether you should make that quinoa salad for dinner, my suggestion is this: every action that we make, as consumers or otherwise, is far more complex than it seems and the choice that is right for today, may be wrong for tomorrow.

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