

QUINOA IN PERU, May 2014

Next to the tremendous growth of the Bolivian quinoa sector - which has brought benefits for the local economy as well as a lot of criticism from international media and scientists - we observe that Peruvian research institutions, farmers, exporting companies and other actors put in much effort to successfully develop the quinoa sector in Peru. Given the continuously growing demand from non-producing countries (like the Netherlands, Germany, etc.) and the vast area in Peru that is being planted with quinoa, Peru contributes to satisfying this international demand. In order to understand the relevant happenings concerning production, trade and policy around Peruvian quinoa in April/May 2014, Mercadero elaborated information, sourced from trade statistics, newspaper articles, scientific papers and personal information.

I. Production

I.1. Production Figures

The production level in 2012: 44,210 tons on 38,495 hectare. Average yield = 1.15 t/ha.
Production level in 2013: 48,000 tons on 45,000 hectare. Average yield = 1.06 t/ha.
Projections from the Agrarian Ministry for 2014 are that 50,000 ha will be cultivated.

	2012	2013
Total exports (MT)	10,504	17,070
Export value (FOB US\$)	2.94	4.19

Table 1: Quinoa Export Figures, 2012 and 2013 (SUNAT)

80% of Peru's quinoa production comes from the region Puno. IBEPa (2012) concludes, that there are 65,000 producers (by 2014, this number is estimated to have increased to 70,000) of which 20% are organized in associations and cooperatives and 80% are non-organized.

I.2 Characteristics of old and new quinoa varieties

Quinoa is and has been cultivated in many areas in the Andean countries. The FAO classifies the quinoa plant in 5 categories: dry valley and humid valley quinoas, altiplano quinoas (white around Lake Titicaca and coloured in the Suni agroecological zone), saltflat quinoas (in the South of Bolivia), sealevel quinoas (in Chile), quinoa of the Yungas (subtropics in Bolivia). (<http://www.fao.org/quinoa-2013/what-is-quinoa/varieties/variety-groups-by-ecological-adaptation-zones/en/>). The quinua real is a quinoa variety that is resistant to salinity. This is why it is one of the few varieties that can grow on the saline soils around the salt flats in the south of the Bolivian highlands; the Altiplano Sur. It is hence not found in Peru.

Another difference between Bolivian and Peruvian varieties is that the yields of Peruvian quinoa are considerably higher than the Bolivian ones. One Bolivian hectare yields on



average 650 kg whereas a Peruvian one yields 1,300 kg on average. The reasons for higher yields in Peru can be (a) the mechanization of quinoa cultivation which is more easily applicable in lower areas and (b) less vulnerability to climatic factors such as strong winds, droughts and frosts, like they are encountered more often in the high plains (the Bolivian Altiplano).

Variedad	Origen	Periodo vegetativo (días)	Grano			Rendimiento (kg/ha)	Factores bióticos y abióticos	
			Tamaño	Color	Saponina		Tolerante	Susceptible
Chewecca	Orurillo - Asillo	165 a 180	Pequeño	Blanco	Dulce	1,000 a 2,500	Frio	
Illpa INIA	Sajama x Blanca de Juli	150 a 160	Grande	Blanco	Dulce	1,800 a 2,500	Mildiu, helada	
Blanca de Juli	Chucuito - Juli	160 a 180	Pequeño	Blanco	Semi dulce	1,200 a 2, 500	Frio	Mildiu, granizo
Kancolla	Cabanillas-Puno	170 a 210	Mediano	Blanco	Amarga	1,100 a 2,500	Frio, granizo, Mildiu	
Salcedo INIA	Real boliviana x Sajama	160	Grande	Blanco	Dulce	1,200 a 2,500	Helada Mildiu	
Pasankalla	Acora - Puno	180 - 200	Grande	Plomo claro o castaño rojo	Dulce	2,000 a 3,500	Mildiu Humedad K'cona K'cona	Helada
Negra Collana	Selección de "Quytu jiwras"	136 - 140	Grande	Negro opaco	Dulce	3,010	Mildiu, Helada, Sequía	
Tahuaco I	Yunguyo Puno	160 - 180	Mediano	Blanco	Dulce	2,500 a 3,000	Mildiu	
Sajama	Real x línea 550 Illimani	140 - 160	Grande	Blanco	Dulce	2,500 a 3,500	Heladas, granizadas	
Rosado Taraco	Taraco - Puno	160 - 180	Mediano	Blanco	Amarga	1,22 a 2,000	Helada, granizada Aves	
Collado	Ilave - Puno	155 - 170	Mediano	Blanco	Semi-dulce	1,100 a 2,600	Mildiu, granizada	

Table 2: New Quinoa Varieties, 2011 (Gobierno Regional Puno, Direccion Regional Agraria Puno)

I.3 INIA's role in seed production

INIA, the national institute of agrarian innovation is working on the development of new quinoa varieties that are more resistant, higher yielding and allow for sustainable (organic) cultivation methods. One of the examples of their varieties are:



Características	Descripción
Fecha de liberación	Setiembre 1995
Estación Experimental Agraria	Illpa - Puno
Adaptación	Altiplano, valles interandinos y costa 1 284 a 3 950 msnm
Periodo vegetativo	150 dias
Rendimiento comercial	2,5 t/ha
Rendimiento potencial	4,0 t/ha

The other (most common) varieties that are certified and grown in Peru are: Salcedo INIA, Pasankalla, Kancolla and Blanca de Juli.

During the last year, the amount of quinoa that has been sown has increased by 40% says INIA's field technician Heradio Pauca Escobedo. The areas in which this increase is most dominant are El Pedregal, the valley of Majes and (Caylloma) and in Santa Rita de Sigas and El Cural in Arequipa.



90 % have sown the quinoa variety Salcedo Inía, which has the potential to yield up to 5.5 tons per hectare. It is indicated that INIA's seeds cover 30% of the cultivated area in Peru (45,000 ha in 2013). The other 70% is covered by farmers that re-use their own seeds. It is expected, that the surface on which quinoa is cultivated will reach 70,000 ha in 2017.

In 2013, INIA has built a quinoa center in the city of Arequipa to develop seeds that are adequate for the area and to promote the distribution of seeds. Other quinoa producing centres are Puno, Junín y Ayacucho . Elsa Valladares says that: "La variedad Altiplano 431 (launched in 2013) es una quinua dulce, con mínima cantidad de saponina, buen tamaño y perlado. Además, es tolerante a enfermedades como el minyu, entre otras enfermedades, siendo su principal característica frente a las demás variedades", declaró. INIA officially sells seeds to producers and to people that want to experiment with growing quinoa (<https://www.youtube.com/watch?v=IGkIxQkHQpA>).

According to experts from the Peruvian ministry of agriculture (MINAGRI), the quinoa grown in coastal areas has the advantage of

- Growing faster (within 120 days)
- And having a higher yield (4.5 tons/ha as compared to 1.3 of national average)
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José Rabines, Andean grain expert at the MINAGRI, claims that with an adequate use of fertilizers, the yields of coastal quinoa could reach 6 tons per hectare. His colleague, Angel Mujica suggests that Peru has a capacity of producing quinoa on 500,000 ha in total (with a yield of 1.3 tons/ha that would be 650,000 tons per year). The division would be as follows:

- 100,000 ha in Puno
- 50,000 ha in Andahuaylas
- 50,000 ha in Cusco
- 50,000 ha in Junín
- 30,000 ha in Cajamarca
- 30,000 ha in Huancavelica
- 200,000 ha in the Peruvian coast



Graph 1: New Quinoa Production Areas in Peru, 2014.



II. Trade

II.1 Trade Figures

In 2013, 2.860 MT of the Peruvian exports have been traded with Europe. Below, an overview about imports of South-American (Peruvian, Bolivian, Ecuadorian) quinoa to European countries and re-exports of those.

2013			
	Import (in MT)	Export (in MT)	Apparent consumption per country
Austria	0	6.7	-6.7
Belgium	0	2.1	-2.1
Germany	1,173.80	45.7	1,128.1
Spain	394.4	11.1	383.3
Denmark	121.5	28.7	92.8
France	3,413.50	149.1	3,264.4
UK	1,423.70	21.8	1,401.9
Italy	533.3	43.3	490.0
Netherlands	2,679.30	57.7	2,621.6
Sweden	152	9.7	142.3
Slovenia	0	4	-4.0

Table 3: Import and Export of South-American quinoa to European countries, 2014 (Eurostat)

II.2. Processing

In Peru, both small as well as bigger exporting companies are operating next to each other. NGOs and farmer cooperatives such as the successful Coopain cooperative in the Cabana district exist next to big processing companies that have their headquarters in Lima (like Organic Sierra y Selva). Coopain Cabana has the capacity to process 150MT/month and Villa Andina, located in Cajamarca up to 240 MT/month.

II.3. Exporting

In 2014, the so-called big players in the Peruvian quinoa sector are: Villa Andina in Cajamarca, the cooperatives CIRNMA and COOPAIN, Organic Sierra y Selva in Lima, Wiracocha del Peru and others. The purchasing activities seem to work similarly to the Bolivian ones. Small farmers sell their produce on local markets in the producing areas which middlemen and buyers from the bigger companies visit to buy quinoa. Further, those middlemen go to the farms directly to purchase their products. It is to find out still, whether there is a weekly market or gathering, on which the national quinoa price is determined (such as it is the case on the Bolivian Challapata market).

The table below gives an estimate of the value for which quinoa has been imported into Europe in the year 2013 (as compared to year 2012). The numbers which are derived from Eurostat data give a slightly blurry picture since all types of quinoa appear under the HS code 1008.50.0000. In this code, all kinds of quinoa colours as well as organic and conventional types are included. It is hence not easy to relate to the price which would be mentioned in a local market in Peru.



Average Price (per MT)	Peruvian Quinoa (in €)
In 2012	2,356.31
jan-13	2,229.27
feb-13	2,367.79
march 2013	2,462.52
apr-13	2,619.27
may 2013	2,235.53
june 2013	2,660.53
july 2013	2,971.30
aug-13	2,233.84
sep-13	3,212.98
oct-13	3,076.31
nov-13	3,358.02
dec-13	3,636.66
Average Price (per MT) 2013	2,801.52€

Table 4: European Import Prices from Peruvian Quinoa, 2013 (Eurostat)

III. Value Chain Mapping

III.1. Actors in the Peruvian Quinoa Sector

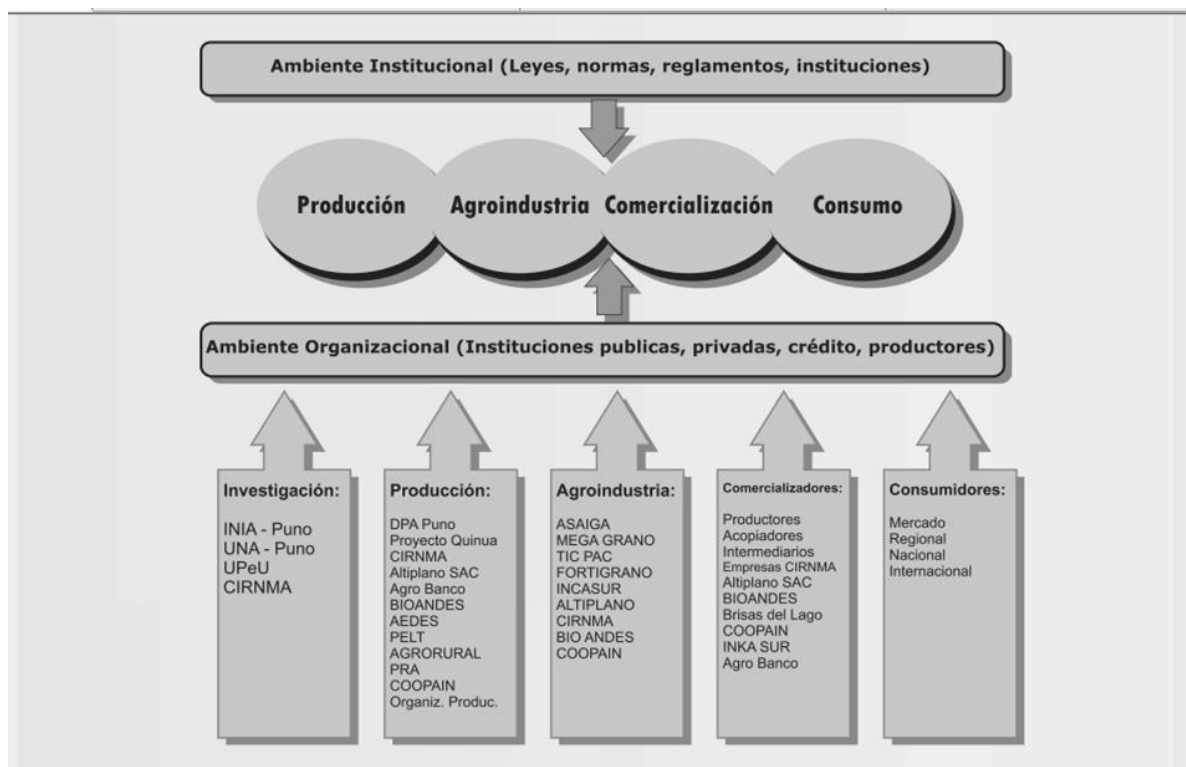
III.2. Enabling Environment

III.3. Policies

The document "Comportamiento Actual de los Agentes de la Cadena Productiva de la Quinoa" from the regional agrarian office in Puno gives very detailed information about the functioning of the quinoa value chain. It describes all the different steps beginning with the research institutions and support organizations, the farmers and their production activities, the post-harvest process of threshing, airing, washing and grading the quinoa, the methods of supply and storage of the quinoa and the different marketing channels that the Peruvian quinoa takes from the field to the plates of Peruvian and international consumers.

The content of the document that has been published in 2011 seems to still correspond with the current situation in most aspects. The authors mention the following actors/organizations/companies to be relevant in the Peruvian quinoa sector:



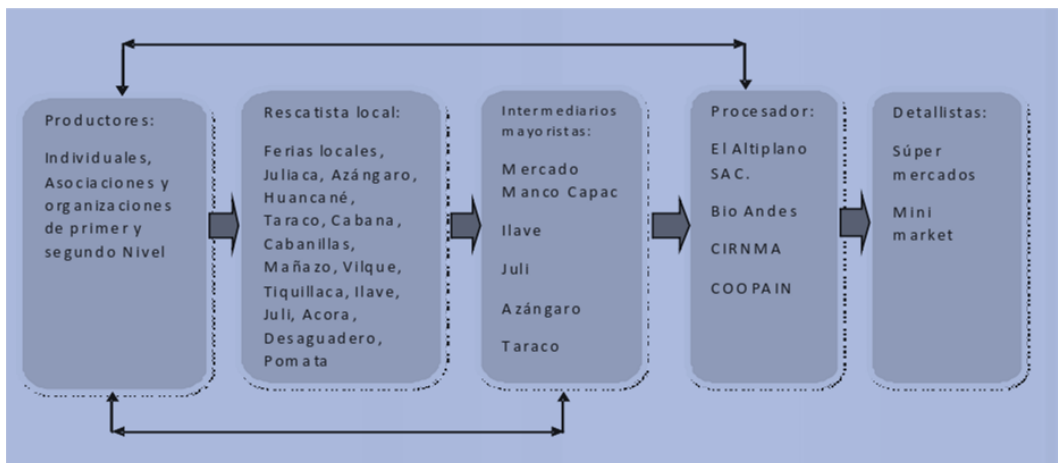


Graph 2: Quinoa Value Chain Peru, 2011 (Gobierno Regional Puno)

Additionally to the mentioned actors, the actual situation recognizes Bioversity International, MINAG and the Peruvian Ministry of Agriculture, with Milton von Hesse as representative. To complete the list of important processing and exporting companies, we add Exportadora Agrícola Orgánica SAC, Grupo Orgánico SA, Alisur SAC, Interams Agroindustria and Vínculos Agrícolas.

In the supply system, middlemen, associations, supplier programs and local markets play an important role, similar as to compared with the Bolivian situation. Traditionally, quinoa producers go to local markets that take place weekly to sell their products. As mentioned in the graph below, those markets are situated in Juliaca, Juli, Cabana and any other cities in the producing areas. The quinoa is then bought by middlemen; those can be wholesalers, retailers or agents that work for the commercial companies. It is estimated that in 2011, 50% of the total quinoa production was sold on those markets. There is barely a quality control for the produce sold on the open air markets so products are not standardized and various quinoa varieties and qualities are mixed together. Very often, this quinoa is supplied to processing companies in Juliaca. For a visualization, a graph has been derived from the earlier mentioned document.





Graph 3: Traditional Buying System Peruvian Quinoa, 2011 (Gobierno Regional Puno)

Another 35% is sold in supplier programs which have recently developed. Those programs work with contract farming in which the commercial company engages in providing inputs, technical assistance, finance, or other support to the farmers and the farmer is bound to supply his quinoa to that company. By 2014, the use of this supply system must have increased according to the increasing number of commercial exporting firms.

