



Value Chain Analysis

CBI Integrated Country Programme
Peru (2013-2017)

Final Report Grains, pulses and edible nuts

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Content

1. Introduction	3
2. Market demand in the European Union/EFTA countries	4
2.1. Quinoa (<i>Chenopodium quinoa</i>)	5
2.2. Amaranth (Kiwicha, <i>Amaranthus caudatus</i>)	7
2.3. Cañihua (<i>Chenopodium pallidicaudale</i>)	7
2.4. Giant corn (Maíz gigante, blanco gigante, <i>Zea Mays Amilacea</i> cv. Gigante)	8
2.5. Pulses	8
2.6. Brazil nut (<i>Bertholletia excelsa</i>)	9
2.7. EU import requirements for grains, pulses and edible nuts	11
3. Grains, pulses, edible nuts Value Chain Analysis	13
3.1. Governance and sector development	13
3.2. Status-quo Peruvian production and trends	13
3.3. Peruvian grains, pulses and edible nuts: Value Chain Analysis	16
4. Number of Peruvian companies	20
5. Risk assessment and opportunities	21
6. Role of stakeholders in a CBI country programme	29
7. Corporate Social Responsibility (CSR) in the Value Chain	32
8. Result chain	34
9. Recommendations and conclusions	36
10. Annexes	40
10.1. Annex 1: Export ranking quinoa per destination (complete list)	40
10.2. Annex 2: Main pulses consumed in the EU and Peruvian total exports (2008-2011)	41
10.3. Annex 3: Contact details of selected stakeholder organizations	42

1. Introduction

This analysis of dry grains, pulses and edible nuts in Peru includes a selection of products with commercial relevance or identified potential:

- Traditional Andean grains such as quinoa, amaranth, cañíhua, and giant corn
- Pulses: Dried beans of the families phaseolus and vigna and Andean lupines (*Tarwi*)
- Edible nuts: Brazil nuts. Other nuts are not exported at relevant volumes yet

The first research phase¹ has led to this product focus for the CBI² integrated country programme. In addition, there are further opportunities for the commercialization of grains and pulses in prepared form (cooked, canned beans, etc.) in which Peru has a technically well-developed industry.

The VCA has been conducted by Jörn Berger with support from Udo Censkowsky and Thomas Sporrer. The VCA has been reviewed after the realization of the validation workshop in Lima (15th April 2013). New information gained as well as results of the workshop discussion has been integrated.

¹ A pre-assessment of the Peruvian sector of grains, pulses and edible nuts was carried out before the decision to focus on the value chain analysis was taken. The pre-assessment has led to an inception report.

² The Centre for the Promotion of Imports from developing countries (CBI) is an agency of the Netherlands Ministry of Foreign Affairs.

2. Market demand in the European Union/EFTA countries

The global market for natural and health products (including organic & fair-trade products and grains, pulses and edible nuts) is expected to reach approx. 717 billion US-\$ in 2012 with an estimated growth rate of 3.7% by 2017.

The demand for the relevant grains, pulses and especially edible nuts is still growing on higher price levels even though the total market volumes are stagnating in most of the traditional European markets due to the economic crisis. Most affected by the crisis are countries like Spain, Italy and UK whereas new markets are developing in Eastern Europe. Specialised EU traders offer a range of ingredients for packers and processors and are strongly re-exporting on EU level. The reason for increased price levels are generally higher food prices in comparison to some years ago (price explosion e.g. in 2008). This is due to growing population, declining productive acreage and competition by energy production in agriculture.

In the case of nuts new regions (China, Russia) entered strongly in the consumption of luxury food. In the sourcing of raw materials scarcity of resources is leading to more direct and long term relationships with producers. This in comparison to spot markets facilitates quality assurance and the integrity of brands.³

In order to provide an easy overview and to focus on the relevant Peruvian products, this paragraph compares EU imports and Peruvian exports per product.

The first two tables give an overview in order to compare recent export values of selected products (pulses in a separate table):

Table 1: Export value ranking of main Peruvian grains and edible nuts (2008 – 2011)

Grains, edible nuts	Export value FOB in US-\$, ranked by 2011			
	2008	2009	2010	2011
Brazil nut	12.720.379	11.699.032	15.256.109	28.554.684
Quinoa	5.291.974	7.544.527	13.419.255	25.700.924
Giant corn	10.141.824	13.284.215	13.328.126	11.440.868
Kiwicha	2.317.981	1.965.884	1.908.370	2.395.629
Kañihua	16.640	50.577	60.391	40.321
<i>Source: Promperu 2011, (2012 data has not been processed yet)</i>				

Among the products analysed in this chapter, Peruvian quinoa stands out as having a tenfold growth between 2007 and 2011. Export growth of Brazil nuts was especially strong since 2010. Export volumes of all other products remained more constant or slightly declined.

³ For more details on EU trends in natural ingredient markets please refer also to the presentation of the validation workshop, 15th April in Lima.

Table 2: Export value ranking of main Peruvian pulses and % growth rate (2010-2011)

Peruvian customs code (partida)	Description	FOB-11 US-\$	%Var11-10
713399200	Cowpea (Frijol castilla, <i>Vigna unguiculata</i>)	21,634,313	2%
713339900	Other common beans (not for sowing)	9,370,061	140%
713399900	Other beans	3,337,416	-27%
713509000	Broad beans / horse beans (not for sowing)	3,257,247	59%
713339200	Yellow beans (frijol canario)	1,211,414	117%
713509000	Tarwi (<i>Lupinus mutabilis</i>)	542,753	-33%
713329000	Adzuki beans (<i>Phaseolus</i> or <i>Vigna angularis</i>) (not for sowing)	217,900	113%
713319000	Mung beans (or <i>Vigna radiata</i>) (not for sowing)	189,931	-25%
713339100	Common black beans (not for sowing)	65	-96%

Source: SIICEX 2013

The export of cowpea is by far the most important bulk business in the pulses sector. However, Peru already exports a broad range of beans, which presents an interesting pre-condition for developing market access to specific segments within the European food market.

2.1. Quinoa (*Chenopodium quinoa*)

This year, 2013, is the International Year of quinoa, launched by FAO. According to FAO, worldwide production of quinoa was estimated to be 80,250 tons in 2011, while Bolivia, Peru and Ecuador account for 97% of all global production. According to Eurostat, Peru occupies second place (18% in traded volumes and values) among the suppliers of the quinoa to the EU market – the main supplier is Bolivia (79%) with Ecuador at third place providing 3% of the traded volume.

According to provisional figures of Eurostat for 2012 (January to November 2012) the leading quinoa importers in the European Union, based on import values in EUR, are France (9.1 million), The Netherlands (4.8 million), Germany (2.2 million) and UK (1.7 million).

The value of Peruvian exported quinoa in 2011 was equivalent to 19.7 Mio €, of which only 2.5 Mio € (or 12.7%) were directed to the EU market. The North American market, in particular the United States, is by far the most important export destination for Peruvian quinoa. According to ADEX, Peruvian quinoa exports to Germany grew by 75% between 2010 and 2011. Peru is currently the main supplier for Italy, with a strong performance of 997% growth between 2010 and 2011, when it reached an import volume of 1.2 Mio €, a level similar to Germany's with 1.4 Mio €. However, the largest consumption market for quinoa in Europe is France, which receives the majority of its quinoa from Bolivia and not from Peru.

Table 3 Peru's export ranking of quinoa (2008-2012)⁴
 (*preliminary data Jan.-Nov. 2012; Source: Promperu)

Peruvian quinoa exports to EU ranked by value 2012 (FOB in US-\$)						
N°	Destination	2008	2009	2010	2011	2012*
1	Germany	248.023	736.810	1.050.627	2.052.558	1.362.360
2	Netherlands	28.873	158.897	55.778	373.728	797.194
3	Italy	11.636	18.212	152.959	1.615.851	647.645
4	UK	3.211	85.653	14.091	53.317	366.922
5	France	5.967	34.533	205.450	62.530	267.066
6	Sweden	134.555	224.742	246.749	276.991	179.534
7	Belgium	3.692	349	170	0	114.626
8	Spain	115.367	97.647	82.481	119.388	102.274
9	Malta	0	0	0	15.369	27.651
10	Switzerland	207	3.686	370	104.340	5.133
Comparison: USA		3.257.182	3.413.213	8.562.663	15.392.002	19.405.725

*Source SIICEX 2012 (2012 preliminary data until November)

Another characteristic of the European quinoa market is that a high proportion are re-exports, as shown in Table 4. In spite of the fact that the data is provisional it indicates business opportunities for Peruvian exporters. In particular, a high proportion of the quinoa imported to Germany and The Netherlands are re-exported later on. The Eurostat data needs to be processed further in order to develop a better picture of the inner European trade flow for quinoa and/or to form a strategy for increasing direct exports to the re-export destinations.

Table 4: EU suppliers of quinoa (preliminary data Jan.-Nov. 2012)

EU import Quinoa 2012 (HS 10085000)	Value in EUR	Quantity in t	Unit value in € / kg
	Jan.-Nov. 2012*	Jan.-Nov. 2012*	
Total EU-27_Imports	14.244,000	5.921	2,4
EU-27_ Internal Trade	5.484.000	2.300	2,4
from BOLIVIA	11.354,000	4.674	2,4
from PERU	2.484,000	1.057	2,3
from ECUADOR	402,000	189	2,1
GERMANY re-exports	2.294.000	1.247	1,8
NETHERLANDS re-exports	1.703.000	608	2,8
FRANCE re-exports	661.000	161	4,1
ITALY re-exports	497.000	190	2,6
UK re-exports	146.000	41	3,6
DENMARK re-exports	35.000	7	4,8
SWEDEN re-exports	35.000	10	3,5
SPAIN re-exports	34.000	14	2,4
BELGIUM re-exports	18.000	7	2,5

Source: Eurostat 2013 *preliminary data until November 2012, previous years not available

A high proportion of quinoa exports to Europe are organic and/or fair-trade quality, with France and Germany being the two leading buyers of organic and fair-trade quinoa. The Fairtrade Labelling Organization International, e.V. (FLO⁵) sets minimum prices to be paid for products

⁴ A complete list, including Non-European markets, is in **annex 1**.

⁵ Fairtrade Labelling Organizations International, minimum prices available at: www.fairtrade.net

certified and labelled with the fair-trade label. The calculated minimum price, as well as the Fairtrade premium, is presented in Table 5 for conventional and organic quinoa.

Table 5: Minimum prices and premium for quinoa set by Fairtrade Labelling Organization

Product (specific product standard)	Product variety	Price applies to	Currency / Quantity x Unit	Price level / *special price	Fairtrade minimum price	Fairtrade premium	Valid from
Quinoa	Conventional, processed (rinsed from saponine)	South America (SPO)	USD / 1 MT	FOB	2250.00	260.00 (of which at least 30% have to be invested in environmental sustainability)	01.04.2012
Quinoa	Organic, processed (rinsed from saponine)	South America (SPO)	USD / 1 MT	FOB	2600.00	260.00 (of which at least 30% have to be invested in environmental sustainability)	01.04.2012

For some products marked with an asterisk (*) in the column "Price level/special price conditions", special price and payment terms apply. These are published in the Product Trade Standards (Part C of the relevant product standards).
SPO=small producer organisation
Source: www.fairtrade.net 2013

These minimum prices, which have not been renewed since April 2012, seem low in comparison to the current price levels for quinoa. They are mainly set to prevent a non-sustainable price for quinoa producers in low price periods.

Internationally traded volumes of FLO certified quinoa were estimated to be 556 t in 2009, of which more than 75% was organic. Other fair-trade systems also function in Peru. Many of them are run by certification bodies (IMO, Ecocert, Control Union, IBD etc.). The latter have developed own fair-trade standards, and these are accepted above all for B2B communication. In spite of the fact that the market relevance of these standards is very low a certification can be helpful in individual cases.

For Andean grains other than quinoa, international statistics on import data is not available as they are traded in mixed HS-groups along with other cereals. Hence Peruvian export data was used for the analysis.

2.2. Amaranth (Kiwicha, *Amaranthus caudatus*)

According to Promperu the greatest volume of Peruvian amaranth was imported by **Germany** (0.767 Mio € in 2011 of which 15% was organic), followed by Japan (0.382 Mio €). Other countries only imported small volumes (**Netherlands** 0.153 Mio €, USA and Canada 0.077 Mio € each, and all others 0.154 Mio€). While exports to **Germany** only grew by 5%, **Netherlands**, with a growth rate of 403%, is catching up. **France** imports amaranth mainly from Bolivia. The average organic share of Peruvian amaranth exports is 12.3%.

2.3. Cañihua (*Chenopodium pallidicaudale*)

Cañihua is a minor export product, but leading European importers of Andean grains are aware of it, and demand from mainly **German** processors⁶ is currently higher than supply (samples are welcome by importers). It is processed for gluten free cereal products like popped cañihua used in muesli mixes, gluten free bread, crackers, toasted bread, snacks and cereal/muesli-bars (e.g. with cranberry and honey). It is also offered as a pure grain for cooking. While **German** imports of Peruvian cañihua reached a value of 30,000 € in 2010 import volumes have decreased since then. At the moment, USA (24,700 €) and Canada (13,000 €) are among the leading importers.

⁶ Example: www.schnitzer.eu/startseite.asp

2.4. Giant corn (Maíz gigante, blanco gigante, *Zea Mays Amilacea* cv. Gigante)

Giant corn⁷ has experienced relatively stable markets for the last five years, but with the exception of Spain (5.6 Mio € in 2012 or 57%) there is potential for increased sales. Outside Europe, the main destination of the crop is the USA (1.8 Mio € or 18 %), followed by Japan (1.0 Mio € or 11%), Ecuador (0.4 Mio € or 4 %) and Brazil (0.2 Mio € 2 %). New countries seem to accept the product rapidly and respond with high growth rates, e.g. exports to Brazil reached 0.2 Mio € within two years, UK: 0.04 Mio € within the same period. Giant corn should be promoted as an innovation in new EU destinations - markets can be developed for new products by the right promotion.

2.5. Pulses

Statistical data for dried pulses is organized in several combined HS groups – a precise analysis is difficult for most varieties. Nevertheless, different information sources have been analysed and some clear observances are outlined:

Cowpea (black eyed bean, *Vigna unguiculata*) is Peru's most important export pulse. Exports grew by 60% between 2007 and 2011. At the same time Peru is the leading EU supplier with a 57% share of the EU market as illustrated in Table 7⁸:

Table 7: EU suppliers of (Cowpea) *Vigna unguiculata* (Jan-Nov 2012)

EU <i>Vigna unguiculata</i> import 2012 (HS 07133500)	Value in EUR	Quantity in t
	Jan.-Nov. 2012*	Jan.-Nov. 2012*
Total EU-27_Import	1.871,636	1.938
EU-27_Internal Trade	235,395	348
from Peru	1.070,080	1.061
from Madagascar	485,324	541
German re-exports	177,779	304
from China	67,427	117
from Australia	61,256	57
from USA	54,332	36
from Myanmar	49,798	48
UK re-exports	31,633	30
from Turkey	24,559	18
<i>Source: Eurostat 2013 *preliminary data until November 2012, previous years not available</i>		

According to ADEX, Peruvian cowpea exports showed high growth rates with the main destinations, led by the USA (14.4 Mio € in 2011, 45% growth since 2010), followed by Colombia (9.2 Mio € in 2011, 137% growth since 2010), Puerto Rico (2.2 Mio € in 2011, 48% growth since 2010) and Panama (1.6 Mio € in 2011, 2% growth since 2010). Fifth position is occupied by the UK, the main Peruvian cowpea importer in the EU (1.6 Mio € in 2011, 75% growth since 2010). The remaining 12 Mio € are exported to other international destinations. German traders are providing 87% of the EU internal re-exports of cowpeas. For cowpeas from Peru the EU market is still small (less than 10%) in comparison to total cowpea exports (17.4 thousand tons).

⁷ Peruvian custom code 1005903000

⁸ This data is preliminary until November 2012 and is an indication of trends only. In comparison to ADEX data it has differences, as UK alone imported 1.6 Mio € in 2011 from Peru according to ADEX.

Other pulses consumed in the EU are exported in much smaller volumes from Peru. The detailed statistics of these pulses are given in **annex 2**.

Export volumes of organic pulses are still small – numbers are not available but it can be assumed that the export value is below 200.000 €.

2.6. Brazil nut (*Bertholletia excelsa*)

Brazil nuts are predominantly traded shelled; only around 10% are traded in the shell. In comparison, Peru sells a small percentage of 1-3% in their shell. Worldwide demand of Brazil nuts has increased in recent years, reaching a value of 178 Mio € (232 Mio US-\$) in 2011, while Peru's exports reached a value of 22 Mio € (28,554 US-\$).

Peruvian export destinations of Brazil nuts are, by far, led by the USA (14.1 Mio € in 2011, 72% growth since 2010) followed by Germany (1.4 Mio € in 2011, 75% growth since 2010), Italy (1.2 Mio € in 2011, 465% growth since 2010), Canada (0.9 Mio € in 2011, 125% growth since 2010), and Australia (0.9 Mio € in 2011, 196% growth since 2010). Export values to all other destinations accounted for just 2.9 Mio € in 2011, 54% growth since 2010.

Table 9: Global Brazil nut trade and leading importing EU countries

Brazil nut shelled (HS 0801 22 00)	Import value FOB in thousands US-\$			
	2008	2009	2010	2011
World	149,309	126,919	174,173	232,642
EU 27	82,153	62,808	97,757	139,687
UK	34,456	23,244	38,536	50,843
Germany	12,624	11,776	22,051	37,049
Netherlands	10,991	8,286	14,963	22,706
Italy	6,466	4,238	4,899	6,591
Spain	3,407	2,361	2,917	4,779
France	2,12	2,008	2,308	3,449
Peruvian total exports*	12,721	11,699	15,256	28,554
<i>Source: Trademap 2013</i>				
<i>*Source: Promperu 2011</i>				

In the EU market the most important importing countries are the UK, Germany and the Netherlands, which at the same time are also the biggest re-exporters within the EU. According to Trademap the value of re-exports (a combined value of 20.8 Mio €) reached a similar level as the Peruvian exported value in 2011. Hence, there is a great potential to reach these destinations and the involved added price directly.

Enormous growth rates of 556% to **UK** and 474% to **Germany** were achieved by Peruvian Brazil nut exporters between 2010 and 2011.

Availability of Brazil nuts depends strongly on local weather conditions in the harvesting regions, and mould can destroy a significant proportion of the fallen nut fruits. In the European market demand for Brazil nuts has been increasing, which has been reflected in the price –

average import price⁹ in 2011 was 4.55 US-\$/lb but went up from 3.40 US-\$/lb (January 2011) to 5.18 US-\$/lb (December 2011). This latter price level in December 2011 was double the price just a year earlier at the end of the year 2010. Further increases of price levels were predicted by the German importer's association, *Hamburger Warenverein*, as the compensation paid to harvesting communities for this very hard work has been only on minimum levels in the past.

Fairtrade

The Fairtrade Labelling Organizations International, e.V. (FLO¹⁰) sets minimum prices to be paid for products certified and labelled with the fair-trade label.

Table 10: Minimum prices and premium for Brazil nuts set by Fairtrade Labelling Organizations International

Product (specific product standard)	Product variety	Price applies to	Currency / Quantity x Unit	level / *special price conditions	Fairtrade minimum price	Fairtrade premium	Valid since
Brazil nuts (nuts)	Organic	worldwide (SPO)	US-\$ / 1 pound	FOB	1,92	0,17	31 Mar 2007
Brazil nuts (nuts)	Organic	worldwide (SPO)	US-\$ / 1 pound	EXW*	1,21	0,17	30 Mar 2007
Brazil nuts (nuts)	Conventional	worldwide (SPO)	US-\$ / 1 pound	FOB	1,8	0,17	29 Mar 2007
Brazil nuts (nuts)	Conventional	worldwide (SPO)	US-\$ / 1 pound	EXW*	1,13	0,17	28 Mar 2007

For some products marked with an asterisk (*) in the column "Price level/special price conditions", special price and payment terms apply. These are published in the Product Trade Standards (Part C of the relevant product standards). SPO=small producer organisation

Source: www.fairtrade.net 2013

⁹ Annual report of the German importer's association Hamburger Warenverein

¹⁰ Fairtrade Labelling Organizations International, minimum prices available at: www.fairtrade.net

2.7. EU import requirements for grains, pulses and edible nuts

In the following some main standards and legal import requirements have been mentioned but without following the intention to give a full picture on all relevant import requirements. In addition some business risks have been highlighted above all in the export trade with organic Brazil nuts. Besides raising awareness the described problems can be pro-actively taken by CBI and BSOs in order to increase professionalism of the sector (e.g. by defining a Peruvian standard and pushing export companies to comply with) as well as for initiating a solution for the gassing problems of organic grains, nuts and pulses. Thus would lead to strengthen the competitive position in export markets.

The food legislation and/or import requirements are quite complex. Detailed information on food packaging, food labelling, and maximum residue levels for pesticides, microbial contamination, irradiation, food hygiene and other specific aspects for the European Union, and other EFTA countries, are presented on the CBI website¹¹.

In addition, FAO/Codex Alimentarius¹² provides following standards for governmental and private standard developing organisations as well as for the definition of precise trade specifications covering grains, pulses and edible nuts:

- Quinoa and foods for dietary use:
 - Proposal for the development of a regional standard for quinoa (CX/LAC 08/16/13)
 - Codex Alimentarius Standard for foods for special dietary use for persons intolerant to gluten (Codex Stan 118-1979)
- Maize¹³:
 - Codex Alimentarius Standard for maize (Codex Stan 153-1985)
- Pulses¹⁴:
 - Codex Alimentarius Standard for certain pulses (Codex Stan 171-1989)
- Nuts¹⁵:
 - Code of Hygienic practise for tree nuts (CAC/RCP 6-1972)
 - Code of practice for the prevention and reduction of aflatoxin contamination in tree nuts (CAC/RCP 59-2005)
 - Proposed draft maximum levels for total aflatoxins in Brazil nuts (CX/CF 10/4/6)
 - Proposed draft revision of the code of practice for the prevention and reduction of aflatoxins in tree nuts (CX/CF 10/4/7)

For Brazil nuts other international standards also exist as references:

- UNECE¹⁶ Standard DDP- concerning the marketing and commercial quality control of Brazil Nut Kernels
- UNECE Standard DDP- concerning the marketing and commercial quality control of Inshell Brazil Nuts

In addition, the European association, Frucom (fruit and nut importers), offers up-to-date information on legal requirements for nuts¹⁷. As already indicated, microbiologic aspects are of greatest importance in the trade of nuts (faecal germs, *E. coli*, *E. staphylococcus*; Aflatoxins;

¹¹ www.cbi.eu/marketintel_platform/Processed-Fruit-and-Vegetables-and-Edible-Nuts/177430/mar

¹² <http://www.codexalimentarius.org/standards/list-of-standards/en/>

¹³ www.codexalimentarius.org/standards/list-of-standards/en/

¹⁴ www.codexalimentarius.org/standards/list-of-standards/en/

¹⁵ www.codexalimentarius.org/standards/list-of-standards/en/

¹⁶ United Nations Economic Commission for Europe www.unece.org

¹⁷ http://www.frucom.eu/index.php?option=com_content&view=article&id=58&Itemid=68

fungi need to be below 10,000/g, bacterial count below 50,000-100,000 /g.). However, rancidity is also of great importance for nuts (damage by oxygen, measured by their peroxide value *PV*).

Microbiological aspects are also of great importance in grains and pulses. For example, an organic grain importer from Latin American countries set the following specifications: Impurities: <0.1%; humidity: <14%; organoleptic characteristics: normal; chemical residues: none; toxic microorganisms: none; yeasts: <1000 CFU/g; moulds: <5000 CFU/g; and aflatoxine: none.

In addition to legal standards, it would be advantageous for exporters to implement a system of monitoring pesticide residues, humidity and microbiological levels, and to provide external certification (HACCP, ISO or preferably, BRC or IFS).

The import industry has many private specifications, depending on the final use of the product. In the European market, each single importer may have own criteria and specifications. The best solution for Peruvian exporters would be to offer their own specification in which they define the characteristics of the product, and then comply with those specifications perfectly.

In nuts, as well as in grains and other bulk products, an occurrence of insects during transit leads automatically to gassing¹⁸. Very often PH₃ is used for the gassing, which is a chemical that is not allowed in organic food production. As a consequence “organic” food containers gassed with PH₃ are decertified. Importers assess the frequency of gassing with PH₃ in Peru to be 0.5%. A gassing technology based on CO₂ would avoid such cases of de-certification; unfortunately this does not exist in Peru.

¹⁸ If the nuts are to be consumed raw, they need to be almost “sterile”. In the conventional food industry this can be achieved through chemical or CO₂ gassing. PH₃ is normally used in conventional industry but needs to be applied for a week to kill insect eggs as well. This kind of chemical gassing (PH₃) is prohibited for organic products, but CO₂ is permitted and has several advantages in comparison to other gases. CO₂ gassing is carried out by many European processors/packers in a CO₂ pressure chamber. After filling the pressure chamber with CO₂ the pressure is abruptly released, which destroys all animal particles (incl. eggs) immediately by bursting them into pieces. Costs for gassing chambers are estimated to be 250,000 to 500,000 EUR.

3. Grains, pulses, edible nuts Value Chain Analysis

3.1. Governance and sector development

The leading organizations in Peruvian food production and particularly, Andean grains are the Peruvian Ministry of Agriculture (MINAG)¹⁹, Dirección de Agronegocios²⁰ and the sub-department Dirección General de Competitividad Agraria.

For breeding and post harvest issues the Ministry of Agriculture runs subprojects for Andean grains within its sub-department, INIA (Instituto Nacional de Innovación Agraria)^{21, 22}, which has local offices in Puno, Cajamarca and Cusco.

It is estimated that there are about 60,000 units producing quinoa alone. In the production regions more than half of the rural population is living in extreme poverty. The women, who maintain the family household and farm, are especially affected while the men try to find labour in the villages. As a consequence, the Peruvian Government, in co-operation with international organizations, has set up various programmes aimed at improving the sector.

There is an on-going cooperative project between EU and MINCETUR, called PENX 2003 – 2013. Two product lines of relevance for this chapter are being supported by this project. These are grains²³ and pulses²⁴. Quinoa, amaranth and pulses have been supported among other value chains. Another on-going project focussing on biodiversity is funded by IFAD and implemented by the NGO, Biodiversity International. The scope of the latter project includes all Andean countries. Many other examples exist.

Local governments also play an important role. For example, the local Government of Puno (the region where more than 80% of the quinoa is produced and the only region where cañihua grows) has an important stake in the development of the quinoa business. Currently, the Government wants to promote cañihua and is aiming at a significant expansion of production.

3.2. Status-quo Peruvian production and trends

Andean grains

Domestic food prices at local markets have climbed fast in recent years and this has led to higher prices for exportable Andean grains, like quinoa and amaranth, as well. In personal interviews, MINAG concluded that the high prices are not mainly due to the export of these grains but are the result of a general escalation in Peruvian (and international) food prices.

According to the Ministry of Agriculture, less than 20% of the national quinoa production is exported (in Bolivia this figure is more than 60%). Quinoa can be considered to be a good crop for increasing the participation of small farmers in this value chain as it has a stable and growing (domestic and international) consumption. For export, however, several standards have to be met, which at the moment only few producers are able to comply to.

Quinoa

¹⁹ www.minag.gob.pe/portal

²⁰ Key contacts are listed in Annex 3

²¹ <http://www.inia.gob.pe/cultivosandinos/responsables.htm>

²² Among others, INIA is working on breeding programmes as well as on development of organic farming techniques

²³ Example for Andean grains: <http://www.mincetur.gob.pe/Comercio/ueperu/licitacion/pdfs/Informes/47.pdf>

²⁴ Example for pulses: <http://www.mincetur.gob.pe/Comercio/ueperu/licitacion/pdfs/Informes/11.pdf>

The main Andean grain is quinoa (*Chenopodium quinoa*). Since 2012 Peru has been the second largest supplier of quinoa, after Bolivia (with 35.7 million € in 2010 according to FAOSTAT). Other supplying countries with smaller volumes are Ecuador, Colombia, Venezuela and Paraguay.

Puno, producing 80% of the Peruvian quinoa, is the main production area for the grain, followed by Ayacucho, Cusco and Junin, each producing 4%, Apurimac producing 3% and the remaining other regions producing 5%. In total there is 38,400 ha under quinoa production, with an average yield of 1.13 MT per hectare but in some regions up to 4 MT per hectare are reported.

The **organic** share of Peruvian quinoa exports is quite high and has been estimated to be **21%**. Organic quinoa is currently scarce in the market and price levels are substantially higher than last year. Bolivian quinoa (Quinoa Real Boliviana) has a better reputation in the EU due to the larger grain-size in comparison to Peruvian varieties, which are reported to have smaller and less uniform sizes. However, importers currently feel “forced” to pay similar prices for Peruvian quinoa (organic current minimum price: 3600 US-\$ / MT CIF Rotterdam).

In the national, and especially the international market, a better price is paid for certified organic quinoa. Generally, conversion to organic production by small farmers in the Altiplano region, who traditionally farm without chemical inputs, makes a positive contribution to the family livelihood. Despite this, most are not certified organic.

Kiwicha

According to the Ministry of Agriculture, Peruvian kiwicha production was estimated to be 25.000 MT in 2012. National consumption is not as strong as of the other Andean grains, but it does offer new opportunities. Peru is the world’s first supplier of kiwicha (*Amaranthus caudatus*) with an export value of 1.8 million € in 2011, followed by Bolivia and India.

In Peru, 40% of the amaranth is produced in Arequipa, 29% in Cusco, 12% in Ancash, 9% in Apurimac, 5% in Ayacucho and the remainder of 5% in other regions.

Peruvian kiwicha is mainly exported to Germany (almost 50%), Japan (22%), Netherlands (9% - but this is growing fast), USA and Canada (both together 9%) and other diverse destinations (10%). The organic share of kiwicha exports was 12% in 2011.

Cañihua

According to the Ministry of Agriculture, Peruvian cañihua production was estimated to be 6,000 MT in 2012, which was consumed almost completely nationally. The grain originates in Puno, the northern Titicaca lake region which is 3,500-4,200 metres above sea level. Production is carried out on 5,000 hectares, with an average yield of 750-800 kg per hectare. The plant is highly resistant to drought and cold. Exports to the EU have already started in the organic segment and importers have stated a clear interest to position themselves among the first importers of this growing product, especially as they heard enquiries from processors at BioFach 2013²⁵.

²⁵ Personal communication with the Dutch importer Doens Food

Giant Corn²⁶

A total of approximately 200 companies currently export corn of different varieties in different forms. The most important product is giant corn from Cusco, which had an annual export value of over 9.2 million € in 2012 (64% exported to Spain, 16% to Japan, 13% to USA and 7% to other destinations in Asia, Europe, Middle East and Latin America).

Pulses

Peru is a net importer of pulses. A total of approximately 130 companies currently export different varieties of pulses in different forms, with an estimated annual export value of more than 38 million €²⁷. Domestic consumption focuses on frijol canario (yellow beans), while black eyed beans are predominantly produced for export. Major export volumes are represented by black eyed beans (*Vigna unguiculata*) with a value of 16.5 Mio € in 2011. However, according to Eurostat, only 5% were exported to the EU in 2012. These are then followed by diverse dry beans (7 Mio €), prepared beans (7 Mio €), dry Peruvian broad beans (habas, *Vicia faba*) with an export value of approximately 2.9 Mio €, including dried or frozen immature green beans (habas verdes). Important markets for pulses are the USA, southern Europe, Middle East and Asia.

Some Peruvian grain exporters claim that Peru is not very competitive in the export of pulses. This is partly due to the fact that beans are expensive in Peru – a net importer of pulses. But, according to personal communication with exporters and MINAG, these imports are predominantly lentils from Canada and USA, and chickpeas and green peas from Canada destined for national food consumption and are, therefore, different to the pulses produced in Peru. Other relevant imports are soy products from Argentina and Bolivia but they come in a semi-processed form for the food and feed industry.

Beans

Unlike Peruvian exporters, German and Dutch importers of pulses believe there is a good potential for certain Peruvian beans, including black beans and black eyed beans²⁸. Within the organic segment the better clients are able to pay considerably higher prices than others (up to double in some cases), as their business model is of long-term relationships with a story behind the product rather than purely price-driven companies. It is recommendable to set clear aims as an exporter and to set own requirements towards buyers to be able to search for the best fitting clients. Prices are volatile for organic beans, for example, minimum prices recently ranged between 0.90 € and 1.30 € / kg CIF Rotterdam.

Lupine Tarwi²⁹

According to the Ministry of Agriculture, Peruvian Tarwi production is estimated to have produced 10,000 MT in 2012, most of which was consumed nationally. Current exports are directed mainly to Ecuador for human consumption. As long as there is no super-sweet variety³⁰ and/or no processed exportable lupine-product developed, Peruvian Tarwi is not likely to find its' way to European markets soon and no specific CBI focus is needed. This situation could immediately change if a finished product was developed that is particularly viable in the organic segment.

²⁶ Another interesting export product is purple corn and will be analyzed in the chapter of natural ingredients

²⁷ According to SIICEX

²⁸ Interviewed leading organic importers see growth opportunities and this is what they would like to develop. A tendency behind is a growing population interested in vegetarian or even vegan food. It is currently difficult to quantify as still only a low percentage of the population but many young people are involved.

²⁹ Two companies are exporting Tarwi: Cereales Perú S.A.C., Lima and Northex International S.A.C., Piura

³⁰ Tarwi=Lupines have a bitter chemical self-defence against insects which makes it complicated for food and feed use. There are Peruvian varieties with less bitterness (sweet) but EU importers and processors need super-sweet varieties which after consultation of the MINAG we assume are not yet developed in Peru.

Nuts

Peru has a 10% share of world wide Brazil nut exports, and is the second largest exporter of Brazil nuts after Bolivia (61%). Peruvian exports of Brazil nuts almost doubled between 2010 and 2011. There is still a potential to grow further, especially through gaining direct access to markets that currently receive re-exports from European importers (re-exporting countries are Netherlands, UK, Germany and Italy). Sustainability in the sourcing of this wild collected nut needs to be addressed in order to maintain the source. The certified organic proportion of Brazil nut exports is estimated to be 9.2% in 2011.

The current volume of Peruvian production and export of nuts other than the Brazil nut is still very low; this is different in the organic production where several Peruvian producers offer a diverse range of nut varieties.

3.3. Peruvian grains, pulses and edible nuts: Value Chain Analysis

The major bottlenecks of the Value Chains in question are presented in graph 1.

Applying to several products

- According to Promperu the main bottleneck is the capacity of exporters to identify niche markets for quality products with a continuous demand in order to ensure constant production. Contrariwise, we calculate that projectable scaling up of production of exactly those “niche” markets (which already came out of their niche) is often the major bottleneck. In addition, MINAG stresses a lack of access to financial resources for small producers in combination with getting secure contracts for organic sales, as certification increases the cost of production, as a further bottleneck.
- Export of raw materials dominates, in spite of the fact that further opportunities for commercialization of pulses in prepared form (for example, cooked and canned beans) exist. Peru has a technically well-developed food processing industry which could be broadened towards the organic segment. But food processors lack the internationally needed certifications, like BRC and/or IFS, for developing an export business with finished products.

Andean grains

- In spite of the fact that some producer organizations have reached a significant size in production they still have no competence in direct export business. In most cases, export in Peru is organized by specialized trading companies. Value adding for the production regions could be improved by excluding intermediaries. In addition, planning of production could be improved too.
- According to CIRNMA increased demand of quinoa is leading to the intensification of its production, this risks creating pressure on the agro-ecologic system. This, in turn, if cultivation is not managed sustainably could affect soil fertility, along with increased pests and diseases.

- While some European quinoa importers stated that they are quite happy with Peruvian qualities and transport services, others state that reliability, even in cases of existing contracts is the main bottleneck for the country to increase its exports.
- In spite of the fact that Promperu did some promotion of Peruvian Andean grains in various export markets the competition with Bolivia is strong. For example, in this year of *quinoa* only two Peruvian companies represented Peruvian quinoa as exhibitors at BioFach 2013³¹ whereas Bolivia presented 14 exhibiting companies.
- Lack of awareness for the market opportunities for cañihua is also an issue. A consequence could be that broader market introductions will be started by Bolivian market players. Cañihua grows mainly in Peru and Bolivia.

Pulses

- European organic importers are interested in Peru's pulses, but the presented volumes on offer are much too small to match demand (e.g. organic black beans)³².
- According to MINAG, considerable export volumes of black and yellow beans (monthly 40 ft. container) would be possible as there was enough production – the bottlenecks are the pre-agreements as, especially associations of small-scale producers, need a form of pre-payments before they can sow the crop. There are some associations that already have some experience in export, but the majority of these exports are carried out via intermediaries who negotiate with producers and provide the necessary stores, cleaning, sorting and packing facilities.
- According to FAOSTAT almost the double value of pulses is currently imported into Peru in comparison to its exports. Under this context, the promotion of exports of pulses should be reviewed critically as security of Peruvian food supply should be considered as a first priority. At the same time this offers good opportunities to promote more production of pulses for both domestic and international markets.
- Scarcity of irrigation water is the most limiting factor in important production regions of **pulses** (e.g. Lambayeque).
- In addition to insufficient production volumes, the tarwi varieties available in Peru are not the super sweet types necessary for export. Thus, tarwi is seen as premature for uptake into the CBI country programme.

Nuts

- Brazil nuts are the only nut exported in relevant volumes. Other nuts like pecan, cashew, macadamia and groundnut suffer from a lack of production, but do offer good opportunities.
- The harvested volumes of Brazil nuts can be drastically reduced by inclement weather conditions (especially due to mould during rainy periods).
- Peruvian export authorities and European import authorities are both very demanding regarding the absence of insects in the products. If any insect is found, the whole lot is either be gassed in the Peruvian harbour or destroyed in Europe, depending where the

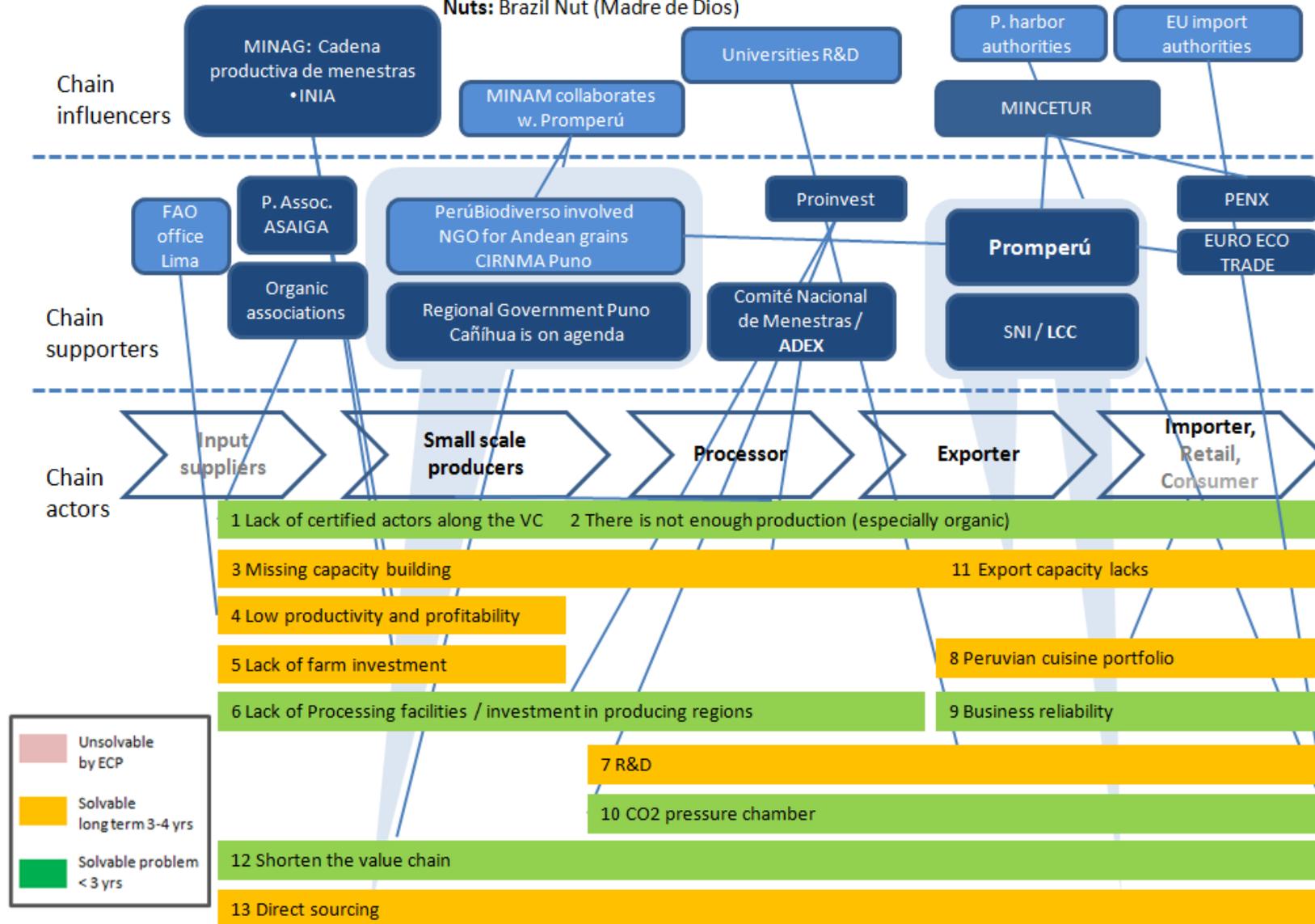
³¹ Further Peruvian companies have been part of a trade mission to BioFach.

³² Personal communication with purchase department of Davert GmbH, Germany

problem was identified. Without a functioning quality assurance system the export of Brazil nuts can cause financial losses up to 160,000 EUR (value of a container load).

Graph 1: Value Chain Bottlenecks
Grains, pulses, nuts Peru

Grains: Quinoa, Giant corn, Kiwicha, Cañihua (Arequipa, Cusco, Puno)
Pulses: Beans, Tarwi (Lambayeque, Piura, Lima, Ucayali, Huancavelica, Apurimac, Arequipa)
Nuts: Brazil Nut (Madre de Dios)



4. Number of Peruvian companies

From a total of 1,630 Peruvian exporters³³ of agricultural products (2011), only approximately 200 companies currently export **grains** of different varieties in different forms. The following Table 11 gives an indication about the number of companies exporting selected products and their turnover per product.

Tab. 11: Classification of selected Peruvian grain, pulse and Brazil nut exporters

Number of potential companies in turnover groups per product & company exporting selected products 2011						
Classification	Brazil nut	Quinoa	Kiwicha	Giant corn	Cow pea	Horse beans and Tarwi
Export values in million US-\$						
0.01-0.1	10	27	5	11	26	15
0.1-1.0	4	5	2	10	7	13
1.0-2.0	1	2	1	1	5	
2.0-5.0	3	4		1	7	
5.0-10.0	2				1	
10.0-50.0		1				
50.0-100.0						
>100						
Total	20	39	8	23	46	28

Some companies are exporting several of these products
Source: Promperu 2011 and SIICEX 2012

In the Peruvian trade fair Expoalimentaria 2012, there 43 companies attending that were in the category of Andean grains (this is an increase of 43% compared to the 30 companies present in 2011). In the category of grains, seeds and pulses, there were 47 companies were exhibiting (an increase of 88% compared to the 25 companies in 2011).

Unlike in other value chains, such as coffee and cocoa, most volumes are traded by exporters – producer associations that export directly are still scarce.

The number of potential participants for a CBI sector programme can be estimated to be around 45-65 companies. The country programme has potential to select up to ten companies from this sector. When selecting ECP participants successful producer associations interested in development and/or enlargement of export business should be preferred by CBI. Selection of suitable associations needs to be carried out with related BSO. Successful training of export skills could have a multiplying effect throughout the country, motivating further associations to follow the example.

³³ Promperú, Desarrollo del comercio exterior agroexportador en el Perú 2011

5. Risk assessment and opportunities

Identified risks and bottlenecks have been described at length already (in chapter 3.3.). Table 12 gives a summary of the principle constraints.

Table 12: Value chain constraints analysis

Observed constraints in value chain	Critical constraint? (Y/N)	Solvable in short term (Y/N)?	Could a solution be provided? If yes, by CBI or other organisation	Likelihood that it will be effectively solved (high/medium/low)
Certification				
1 Lack of certified actors along the VC	Y	Y	CBI	High
Production				
2 There is not enough production (especially organic)	Y	Y	CBI	High
3 Missing capacity building	Y	Y	CBI	High
4 Low productivity and profitability	Y	N	CBI, BSOs, MINAG, INIA and universities	Medium
5 Lack of farm investment	Y	Y	CBI, other organisations***	Medium
Processing				
6 Lack of Processing facilities / investment in producing regions	Y	Y	CBI, strategic buyers, other organisations***	Medium
7 R&D	Y	Y	CBI	High
8 Peruvian cuisine portfolio	N	Y	CBI, strategic buyers	High
Quality assurance				
9 Business reliability	Y	Y	CBI	High
10 CO2 pressure chamber	Y	Y	CBI, sector round table	High
Export issues				
11 Export capacity lacks	Y	Y	CBI, BSOs and Regional Gov.	High
12 Shorten the value chain	Y	Y	CBI	High
13 Direct sourcing	Y	Y	CBI, other organisations**	High

* For quinoa, Brazil nuts, beans and cañíhua within five years

** Ministry of Agriculture, Produce, SIEX, etc.

*** Financing institutions and strategic investors (EU buyers)

Results from the validation workshop Lima, 15.04.2013 (see also complete workshop wall notes in table 13)

In comparison to the recommendations given before the workshop, few new aspects were identified in the workshop but a deepening of the understanding of the Peruvian sector bottlenecks and potential solutions was achieved together with awareness about current opportunities and interest in the sector. The workshop was carried out together with the natural ingredients workshop and in this report only issues regarding grains, pulses and nuts are listed. The main new aspect was the lack of certified (quality) seeds in the production of quinoa and pulses.

Table 13: Solution Design

Workshop wall notes

Constraint	Why does this facilitate exports?	How can the constraint be solved/ addressed?	Can it be addressed by a CBI module?	Sector	Problem	Solution
Certification						
1 Lack of certified actors along the VC	Certification is a precondition to access promising markets	Promote certifications with exporters and in BSO trainings preferably in combination with target market studies. Connecting small farmers to markets should be implemented in the Ruta Exportadora (small farmer training module).	Yes: MI and tailor made studies. Certification, BSOD and Export capacity building	All	All along the value chain certifications are missing	
Production						
2 There is not enough production (especially organic)	Demand exceeds supply for almost all analyzed products; scarce resources are a global issue, opportunities on domestic and export markets underutilized.	Strengthening direct relationships between EU clients and producer's associations facilitates mutual planning reliability. Pre-Agreements are pre-condition for loans to extend production and are an integrated part of Fair Trade certification. CBI can support existing pre-structures through their module "Certification" and train BSO trainers accordingly	Yes: Certification module, BSOD		See also export issues	
3 Missing capacity building	Sustainable Best Practices need further dissemination and implementation.	Training of exporters and BSO trainers in sustainable agriculture practices, best social and economic practices, diversification, etc. Connecting small farmers to markets should be implemented in the Ruta Exportadora (small farmer training module)	Partly: Export capacity building and BSOD	All, especially Quinoa	Lack of knowledge and dissemination of information/technology regarding <ul style="list-style-type: none"> • Seed • Cultivation input • Harvest and post-harvest treatment (see processing) 	
4 Low productivity and profitability	Supply of quality seeds is key to efficiently improve export production	This could be solved effectively and relatively easily by national organisations qualifying farmers in propagation of quality seeds. (Offers domestic business opportunities for the same target group).	CBI together with the BSOs should give an impulse to others like MINAG, INIA and universities	Grains Pulses	Quality seeds are not available, lack of supply of quality beans for producers/farmers. ³⁴	
5 Lack of farm investment	Pre-payments are an important instrument for farmers to invest in seeding	Several fair-trade standards include different form of guaranteed pre-payments; at the same time certified fair-trade products are attractive in the market. Training on available micro credits for sustainable farm investments, credits for certification and infrastructure after the approval of a sound business plan.	Partly: CSR module and Business Development			

³⁴ Spiral effect - The lack of quality seeds unfortunately results in lower yield for the producer/farmer and thus he tends to change his production to apparently higher yield/income products

Constraint	Why does this facilitate exports?	How can the constraint be solved/ addressed?	Can it be addressed by a CBI module?	Sector	Problem	Solution
Processing						
6 Lack of Processing facilities / investment in producing regions	Adequate cleaning / sorting facilities (currently lacking) at associations would assure added value for producers and motivate growth in production.	Training on available credits for investments, credits for certification and infrastructure after the approval of a sound business plan. This could be solved by shared investments supported by public private partnerships and other financial tools. Alliances with importers could facilitate technical advice on which kind of technical solutions investments should be directed to.	Partly: Business Development, strategic buyers	Quinoa	Lack of knowledge and availability of information/technology regarding <ul style="list-style-type: none"> Harvest and post-harvest treatment 	
				Beans Pulses	Machinery to develop added value products (semi-processing eg: washing) is expensive to have in Peru due to import procedure	
				Tarwi	Lack of technology to perform the washing-out of alkaloids and lack of studies to achieve a commercial viable scaling	
7 R&D	Added value could be generated by products suitable for the EU market.	Product development in cooperation with European R&D would facilitate exports of finished products (e.g. gluten free range; please refer to <i>Opportunities for Andean grains</i> in the following paragraph).	Yes: Export Capacity Building, European Market Entry, HRD and MI	All	Lack of Negotiation power and knowledge especially regarding processed products and adding value to products	For example regarding Quinoa and thereof to develop an added-value product the right information on quality and technical aspects are crucial
8 Peruvian cuisine portfolio	Anticipation of the internationally growing <i>typical Peruvian cuisine's</i> profile	Launch of a finished product range together with EU clients	Yes: MI, tailor-made EU market study finished products. EU Market Entry.			
Quality assurance						
9 Business reliability	Advance in reputation of Peruvian exporter's reliability could generate new and bind best clients.	Coaching for early transparent communication in contractual conflicts would strengthen exporter's position.	Yes: HRD and individual coaching			
10 CO2 pressure chamber	CO2 pressure chamber in Peru could minimize risk of gassing by authorities and during transit	Private actors should organise a shared solution as a service for exporters especially for products of high value (Brazil nuts)	Partly: Business Development and sector round table			

Constraint	Why does this facilitate exports?	How can the constraint be solved/ addressed?	Can it be addressed by a CBI module?	Sector	Problem	Solution
Export issues						
11 Export capacity lacks	Organisations focused on production could perform better with more inter linkage with market knowledge.	Regional training and coaching of exporters on market opportunities, close to producing regions and in cooperation with extended stakeholders (e.g. Regional Governments) could spread the knowledge concentrated in Lima.	Yes: MI and tailor made studies. Certification, BSOD and Export capacity building but more decentral presence days			
12 Shorten the value chain	Shorten the value chain by direct contacts to enable quality control and documentation → Win-win situation in times of global scarceness of resources	An alliance can be achieved through the implementation of a Fair Trade and organic certification up to the processor/exporter. CBI can support existing pre-structures through their module “Certification” and train BSO trainers accordingly	Yes: Certification module, BSOD	All, especially Quinoa, Menestras	Many intermediaries are involved in the chain until the product is processed into a final product	The processors/exporters should form an alliance with the producers/farmers, even associations.
13 Direct sourcing		New focus of match makings in order to strengthen long term relationships as import markets compete for suppliers. Strengthening cooperatives /grower groups who take over the role of intermediaries could generate best local impact. Focus on supplying EU packers/processors directly.	Partly: Business Development, ADEX EU trade office			

The authors have compiled a number of specific opportunities which can be taken into consideration by CBI.

Opportunities applying to several products

- The product categories grains, nuts and pulses are linked to the Peruvian biodiversity. Biodiversity products are promoted by many organizations in Peru. CBI should support Promperú to position the product group “Andean grains, pulses and nuts” into the national export marketing strategy and/or to further strengthen the sustainability concept (e.g. which claims should be used in marketing...). The success of the country programme will also depend on a clear and systematic promotion at trade fairs. In this context the use of the term “Biocomercio” which is often used by Peruvian BSOs should be reviewed.
- The re-export within Europe of several products from Peru is common, and offer an opportunity to develop new direct sales to end-consuming countries (e.g. Brazil nut, quinoa). CBI should discuss with MINCETUR/Promperú and other related BSO the issue of re-export for Brazil nuts and quinoa and propose to conduct a study in order to understand better the inner European trade flow. The latter is the pre-condition to developing a tailor made and product specific export strategy.
- The coordination and harmonization between demand and supply was mentioned by different stakeholders as being crucial to preventing over and underproduction. In none of the analyzed sectors was overproduction an issue for any quality product. However, scarcity of resources is the problem of today’s international markets. Thus, CBI and/or cooperation partners should get in touch with regional and local governments to motivate them to organize primary production in their area. Annual crops will be easier to organize than perennial crops (e.g. fruit trees) or even wild collected ingredients. Contracted farming offers opportunities to create a win-win situation for farmers as contracts can provide access to credits to enable investments in a sustainable production and planning. Planning of production is a task of the cooperating organizations, but exchange and communication is required for guidance according to market knowledge.
- Sustainable and especially organic land use is crucial to tackling the rapid change of climate and global economy. At the same time it provides the best current market opportunities for the products discussed in this chapter. Market wise there is still space for organic products, and Peru could continue to strengthen its position in this segment.
- The organic association, Naturland, has stated its interest in supporting associations in training farmers on the conversion process to organic production and could be involved.
- CBI in cooperation with related BSOs should draw attention to existing business risks related to the product quality. In addition, it should provide tools to reduce the occurrence of mould and other fungi by appropriate post harvest handling.

Opportunities for Andean grains

- Quinoa and chia seed: The Dutch organic trader and packer, Terra Sana³⁵, has expressed an interest in purchasing products directly from Peruvian exporters. Certified organic chia seed and quinoa are the next clear priorities for them but they are also interested in other products like dried fruit, Brazil nuts, pineapple, mango, berries, physalis, for their product range of raw and *super-food*. Up to now Terra Sana has purchased the products via importers/wholesalers but their traded volumes are growing, and the numbers are getting high enough for direct import. For initiating direct export trade with this kind of new importer, it is crucial to offer an impeccable service to avoid bad initial experiences and to prevent any risks. In the case of Terra Sana, mixed containers are a possible option, and they are aiming to replace their current European suppliers within one year by direct import. Organic certification is crucial; fair-trade certification is not important for this packer as they only emphasise their own brand.
- Quinoa: Peru has no significant export trade with France, which is the largest EU market for quinoa. Other interesting EU markets are the Netherlands and the UK. Working with ECP participants the following aspects should be taken into consideration by CBI experts:
 - Consolidate the Peruvian position within the EU markets (in order to compete better with the main competitor, Bolivia).
 - Concentrate effort on EU countries that are not significantly supplied by Peru (analyse why there is low Peruvian export to the biggest EU importers such as France, UK and Belgium).
 - The increasing quinoa consumption presents opportunities to directly supply processors and packers, which up to now have bought from specialized EU importers.
 - Further enhance the added value by promotion of investment into proper cleaning/sorting facilities.
- Quinoa, Kiwicha and Cañihua and others: These products offer export opportunities for gluten free processed goods^{36,37}. This could be a future Peruvian processed product range as dietary intolerance of gluten is an increasing problem among European consumers who search for alternatives to replace wheat products (pasta, baking mixes, cookies etc.). This approach will further facilitate the market introduction of Cañihua. However, some of these products, for example “pasta”, get unstable very easily during their processing as the main binding (protein) component is missing. Thus, a connection to R&D centres in Europe for these products is important, as is a close relationship with European partner companies.
- **Cañihua**: For the successful marketing Cañihua it is crucial that the message of its health benefits is well advertised. While, future export growth is assured DOC certification should be prepared to educate consumers to strongly associate the product with its Peruvian origin (like *Puno's Cañihua*). The first launch could create a winning margin as Bolivia is also an origin of Cañihua.
- **Giant corn**: Giant corn offers the opportunity to focus on European destinations other than Spain, such as Italy, Bulgaria, Belgium, Netherlands, Sweden and Switzerland, which already have tried small volumes.

³⁵ tim.hakker@terrasana.nl

³⁶ Fox News. Gluten-free foods industry worth \$4.2 billion. October 23, 2012.

<http://www.foxnews.com/health/2012/10/23/gluten-free-foods-industry-worth-42-billion/>

³⁷ Due to many factors (pollution, irritation of the immune system) allergies become an increasing problem – many European people are getting intolerant to wheat products (gluten=protein).

- **Snacks:** Organic popcorn³⁸ maize (maíz reventón), and especially corn “maíz crujiente³⁹” used for the popular “*Canchita*” from Peru⁴⁰, has the potential to enter the European market segment of snacks. In addition, they could be an innovative and natural snack in the Middle Europe. We assume that more natural, less processed snacks have a competitive advantage if prepared with low fat (e.g. hot air). Strategic importers have to be sourced as a market introduction is needed for *Canchita*. Companies that produce these snacks are available in Peru and already supply local supermarkets. As European supermarkets have higher quality control standards, certification such as BRC/IFS would be needed.
- **Sweet corn:** Sweet corn (*Zea mays var. Saccharata*) is mainly exported from Peru as frozen (export value 2.8 Mio € in 2011). The main destinations are Ecuador and USA; European imports have started in Spain⁴¹, Italy and UK.
- CSR issues are taken serious and this is appreciated by many exporters involved with Andean grains. The majority of the production is organic and/or fair-trade certified, which has already become a benchmark in the industry.

Pulses

- CBI should focus on supporting Peruvian exporters to develop a strong EU position with pulses (especially organic pulses like black beans) in order to make use of the opportunity that importers are searching for sources more reliable than China and East Europe (Kirgistan/Kasachstan). European importers of organic pulses⁴² are also interested in working with new (super-sweet) lupine suppliers which is used mainly as feed ingredient. In general exports are quality and price-driven. An impeccable residual analysis, together with organic quality, is required and importers manage their own specifications.
- Organic importers expressed an interest in organic pulses (like black beans) but up-scaling of production is a precondition. So far the offered potential volumes have been considered to be much too small. Organic certification is an important differentiator, as well, for this market segment.
- As the domestic prices for pulses are high there is a great potential for their production in general, and coordinated programmes should address an increase of the Peruvian production.

Nuts

³⁸ EU ingredient traders state that they are searching for alternatives for organic popcorn from Bolivia and Argentina and Eastern Europe as there have been repeated problems with residuals.



³⁹

⁴⁰ An EU importer of this kind of products: Tostados de Calidad, Spain

⁴¹ Lamas Trading Export Sociedad Anónima CE, Latin Market S.A.C. and The Green Farmer S.A.C.

⁴² Personal communication with Dutch companies Doens Food and Tradin

- The current volume of Peruvian production and export of nuts other than Brazil nuts is still very low. Nevertheless, there are good market opportunities⁴³ for almost all kinds of nuts, and their integration into diversified farming systems is highly recommended. In addition, the price levels for nuts are not likely to decline in the near future as the increase of new markets coincides with an international shortage of supply.
- An investment in a CO₂ pressure chamber by several exporters, in order to treat expensive goods (like Brazil nuts) prior to entering the harbour, could minimize the risk of gassing in the export harbour or the rejection at the import harbour. Not only could this also be used for dried fruit, coffee, cacao, it would provide a competitive advantage, strengthening the reputation and reliability of Peruvian products in the European market. Importers would welcome this approach as they have increasing necessity to apply the CO₂ pressure chamber method, which would be much more efficient in the country origin.

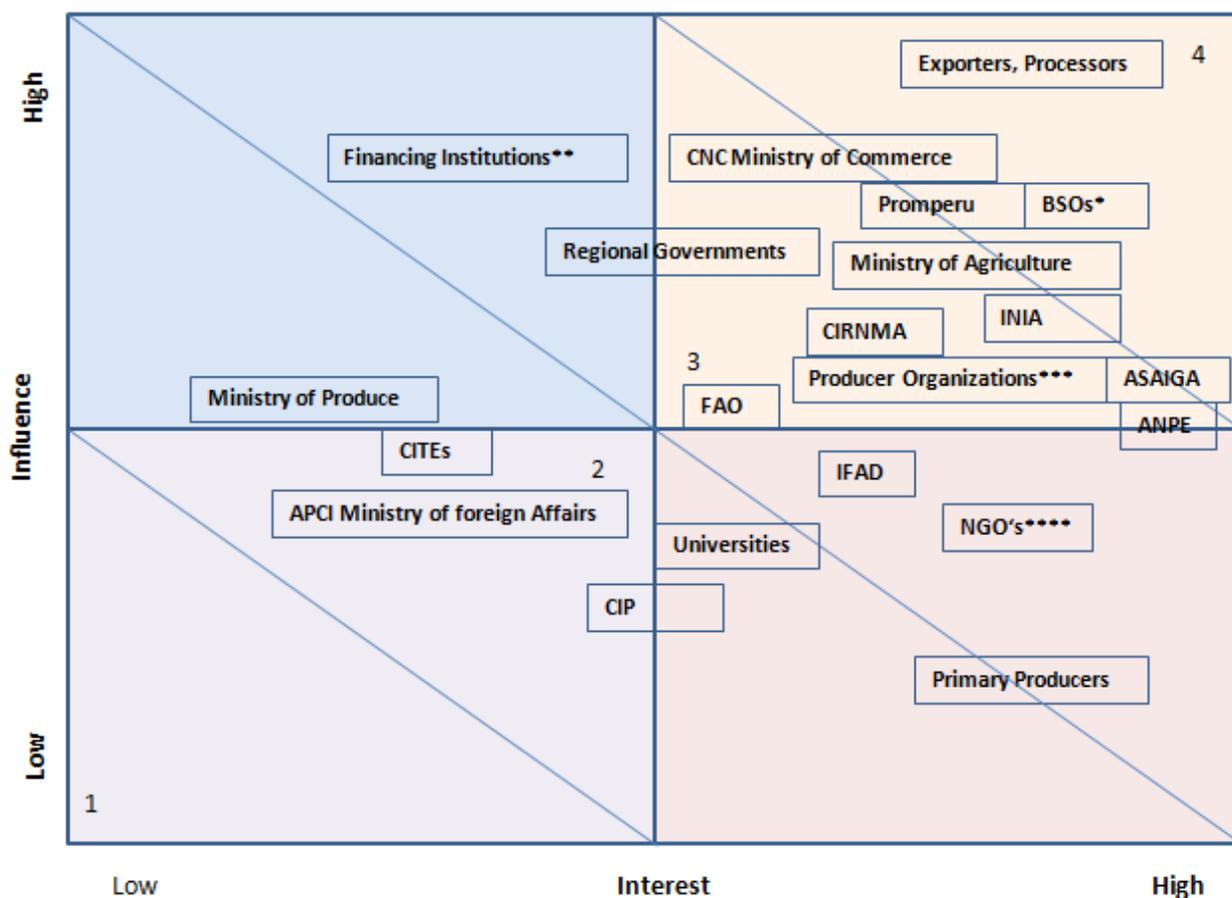
⁴³ There are good opportunities for Peruvian long term export growth e.g. for

- Peanuts (an annual crop easy to integrate into crop rotations e.g. with cotton)
- Cashew (suitable for intercropping in dry regions)
- Macadamia (suitable for integration of marketable varieties in agroforestry / coffee plantations)
- Coconut (suitable for integration as shade palm in cocoa plantations)
- Pekan nuts (currently produced in coastal regions like Ankash, Lima and Ica)

6. Role of stakeholders in a CBI country programme⁴⁴

The stakeholders have been analyzed in regard to their interest in and potential contribution to the CBI country programme 2013-2017 for Andean grains, pulses and nuts. In order to demonstrate the degree of interest and influential power a stakeholder assessment grid has been developed.

Graph 2: Stakeholder Assessment Grid grains, pulses nuts



- 1 = Keep me informed
- 2 = Maintain interest
- 3 = Active consultation
- 4 = Strong „Buy in“ required

- * BSOs= Promperu, ADEX, CCL, SIEX
- ** FI= ProInvest, Rabobank, Banco Agrario, Regional banks
- *** PO= ASAIGA, ANPE and others
- **** NGO's= AEDES, RAAA, ITDG, Care

In addition, the weighting of stakeholders followed three main objectives in the context of a successful Integrated Sector Programme:

- Establishment of contacts with potential programme participants (above all for an ECP).
- Direct contribution to overcome bottlenecks that impede the expansion of the export business into EU/EFTA countries.

⁴⁴ Please, find contact details of some stakeholder organizations in **annex 3**.

- Indirect contribution to overcome bottlenecks that impede the expansion of the export business into EU/EFTA countries.

The Peruvian Ministry of Agriculture⁴⁵ (MINAG) is a key player regarding agricultural production and leads the VCA development for grains, pulses and nuts. Their sub department, Dirección General de Competitividad Agraria, has specialists for grains and pulses. MINAG runs regional offices and works in close cooperation with the regional governments. In addition, MINAG also organises the organic sector through CONAPO Comisión Nacional de Productos Orgánicos.

The sub-department, INIA⁴⁶ (Instituto Nacional de Innovación Agraria), and its local offices in Puno, Cajamarca and Cusco, focusses on the development of commercially viable and resistant varieties of quinoa, amaranth and cañihua. It also investigates economic alternatives for grains, the development of organic production schemes for quinoa and the reduction of post harvest losses of quinoa and amaranth.

Regional and local governments play an important role. For example, the local Government of Puno draws attention to cañihua and wants to increase production for both domestic and international market access.

SIEX was established independently from any Ministry in order to implement economic development in the poorest regions of Peru. It works closely together with the regional governments.

Private sector bodies, which represent companies of the sector, are ASAIGA (Asociación de Agroindustriales de Granos Andinos), ANPE⁴⁷ (Asociación Nacional de Productores Ecológicos), ADEX and the Comité Nacional de Menestras.

The relevant organisation for sustainability issues in production is CIRNMA (Centro de Investigación de Recursos Naturales y Medioambiente). Other NGOs⁴⁸ are connected with producers' associations, which are interested in direct market development.

MINCETUR coordinates international cooperation related to trade. For example, there is an on-going cooperation project between EU and MINCETUR called PENX 2003 – 2013. Two crop categories of relevance to this chapter, grains⁴⁹ and pulses⁵⁰ have been supported by this project. MINCETUR is also involved in the recently established Euro Ecotrader project.

IFAD⁵¹ (International Fund for Agricultural Development) is an UN agency active in poverty alleviation and rural development mainly in the Peruvian highlands.

The Peruvian Ministry of Production with their regional CITEs (de Innovación Tecnológica) are active in supporting commodities such as cocoa and coffee, and up to now have excluded Andean grains from the agenda. In processing a support given by institutions like CITEs could

⁴⁵ www.minag.gob.pe/portal

⁴⁶ www.inia.gob.pe

⁴⁷ www.anpeperu.org

⁴⁸ AEDES: Arequipa, Asociación Especializada para el Desarrollo Sostenible
RAAA: Red de Acción en Alternativas al uso de Agroquímicos
ITDG Lima, Cusco www.solucionespracticas.org.pe
Care, Puno, www.careenperu.org

⁴⁹ Example for Andean grains: <http://www.mincetur.gob.pe/Comercio/ueperu/licitacion/pdfs/Informes/47.pdf>

⁵⁰ Example for pulses: <http://www.mincetur.gob.pe/Comercio/ueperu/licitacion/pdfs/Informes/11.pdf>

⁵¹ <http://operations.ifad.org/web/ifad/operations/country/projects/tags/peru>

have a future role. CIP (Centro Internacional de la Papa) has technical knowledge on Andean grains.

CBI should work together with Promperu in the leading function with the Ruta Exportadora as the framework with its regional outreach. Promperu already works together with the Ministry of Agriculture and the NGO CIRNMA in Puno on Andean grains from the Highlands: Quinoa, Kiwicha, Cañihua, Tarwi and Giant corn (Purple corn is from lower lands and corresponds to the chapter natural ingredients).

The Peruvian government and the EC have signed an agreement for further trade support specialized in sustainable production: the ECOTRADE program 2013 - 2015. Peru is given 13.5 Mio EUR to carry out programs that include production strengthening and market access. The program focuses on defined regions and products. (Piura: Mango, Banana, Madre de Dios: Brazil Nut, Puno, Cusco, Arequipa: Andean Grains). The grant within Peru is given to several actors: MEF, APCI, MINAM, MINCETUR (Promperu).

ADEX needs to be involved actively when it comes to pulses and the collaboration with the Comité Nacional de Menestras where ADEX has the presidency. This worked well already in the validation workshop as there were a good number of participants active in pulses, a sector which didn't have much support focus yet. This sector is in need to develop further/new export markets.

CCL in grains/cereals works together with Sociedad Nacional de Industria (producers). CCL organises relevant trade fair participations and missions e.g. to SIAL, Paris and Canadá, Anuga Germany and Gulfood Dubai. CCL provided its' auditorium for the training of the around 600 commercial attachés (antennas comerciales) from the Peruvian embassies abroad.

SIEX could get involved via CCL as they work together in projects of other sectors already (coffee and cocoa and dehydrated Physalis covered with chocolate). SIEX' focuses on Quinoa, Kiwicha, Chia seed (started with 50 ha), Tarwi, Lima beans (habas), beans and Tarwi (production expert: Raúl Lescano). In the involvement of SIEX all export-related issues should be directed to the partner CCL (or the partner of CBI's choice) and SIEX could identify organisations ready for the market as participants and provide solutions for problems related to the production.

Only some grains received support by international donor organisations so far (mainly quinoa). Pulses/beans didn't have a strong support focus yet and the combination with sustainability (organic / fair trade) offers opportunities as they offer advantages in the crop rotation. CBI could generate a good overall performance matching export with markets.

7. Corporate Social Responsibility (CSR) in the Value Chain

Environmental issues

- Forest ecology and sustainable harvest management⁵² should be taken into consideration when planning to increase the harvested volumes of Brazil nuts.
- Intensification of quinoa production (and other Andean grains) goes hand in hand with an increase of pesticides, fertilizers and mechanical soil tillage. Mentioned activities are endangering the fragile soil fertility in the Andean production regions.
- Scarcity of water is a business risk CBI should ask BSOs to draw attention to this issue and to promote water saving farming methods in particular in the production of Andean grains and pulses.

Social and labour right issues

- Traditionally Andean crops play an important role in combating malnutrition⁵³ in particular for the poorest communities in Peru. According to FAO⁵⁴ Peru still placed sixth among Latin American and Caribbean countries regarding the malnutrition of children, which was only dropped from 37% (period between 1990 and 1995) to 28% (period between 2000 and 2010). Recently the prices for quinoa have increased significantly and farmers tend to sell the products without having access to alternative food with an equivalent nutritional value. CBI should take this into consideration and promote the mutual growth of local/domestic and export markets when working with companies and related BSOs.
- At the same time successful export business is the pre-condition to increase income for Andean farmers (>50% of the Andean population lives in poverty). As long as CBI promotes business models with fair trading practices the objective to increase farmers' income can be achieved.
- In regard to social aspects in the value chains of agriculture and wild collection, child labour and forced labour are currently "hot" topics. Child labour is common in rural areas and the worst forms need to be prevented. Forced labour is discussed in the sourcing of Brazil nuts, and the US Ministry of Labour listed Brazil nut collection as an example of a Peruvian and Bolivian value chain with forced labour issues⁵⁵. This was also commented on from Brazil⁵⁶.

⁵² http://www.nutfruit.org/en/the-regeneration-of-brazil-nut-trees-in-relation-to-nut-harvest-intensity-in-the-trombetas-river-valley-of-northern-amazonia-brazil_52017

⁵³ FAO Quinoa: An ancient crop to contribute to world food security 2011

⁵⁴ FAO Panorama de la seguridad alimentaria y nutricional de América Latina y el Caribe 2011

⁵⁵ US-Dep of Labour (2012): List of Goods produced by Child Labour or Forced Labour

⁵⁶ Personal communication with a Brazilian University

Fair trading practices

- Good prices for collectors of Brazil nuts are crucial to facilitate a sustainable supply along with improvement of living conditions. In recent years workers often received only minimum compensation for this physically very hard work.
- The role of intermediaries is dominant in all segments (nuts, grains, pulses). Fair trading practices are not given, farmers are often dependent from intermediaries and prices are often not reflecting the real market value. In case of pulses for example farmers often get no bank credits (due to land tenure issues) and intermediaries provide also loans for unfavourable conditions.

Summarizing the mentioned CSR issues CBI should above all promote sustainable business models (e.g. Fairtrade and organic) and exclude exporters of conventional products. This is one possibility to exclude intolerable risks and support value chains with higher prices for farmers. Working with exporters the need to pay higher prices and/or to cope with the mentioned CSR aspects should be addressed in the capacity building activities.

8. Result chain

All CBI activities and interventions aim to increase export sales volumes within the 4-year period of the up-coming country programme. A careful estimation of sales has been done on the basis of conventional prices (as the information base for organic and fair-trade prices has been inconsistent an add-on price for each of the products has been defined for the final calculation).

Table 14: Calculation of export growth values (over a 4 - year period)

Result chain	Calculation of export values					
	Quantity (t) in 2011	US-\$ in 2011	Average FOB in US-\$/kg	Added value in US-\$/kg	ECP export volume in t	ECP export value in US-\$
Brazil nut	3.412	28.554.684,35	8,37	1,25	500	4.810.000
Quinoa	8.224	25.700.923,50	3,12	0,30	750	2.565.000
Giant corn	7.474	11.440.867,91	1,53	0,40	1.000	1.930.000
Kiwicha	1.088	2.395.629,45	2,20	0,10	500	1.150.000
Kañihua	14	40.320,79	2,89	0,15	100	304.000
Cowpea	17.400	21.600.000,00	1,24	0,30	500	770.000
Other beans	9.100	9.370.061,00	1,02	0,40	500	710.000
Total		99.102.487,00			3850	12.239.000

It has been estimated that within the 4-year period an ECP export value of more than 12 million US-\$ can be achieved (or about 10 million EUR). This is a theoretical and conservative estimation based on the assumption that 10 sector participants export the mentioned (or similar) products. Thus each participant should be enabled to generate export values by around 250.000 EUR annually during the program. This can either be achieved by added value through certified organic or fair trade products (some clients are able to pay considerably higher prices for organic pulses) or expansion of exported volumes (e.g. an average of 3 additional containers per participant, depending on the product price per kg).

This calculation does not take into consideration indirect effects of the CBI interventions, such as working with BSO organizations, cooperative partners in the field of expansion of production, etc.

9. Recommendations and conclusions

This chapter summarizes recommendations on three different levels. **Macro Level** = Activities to improve framework conditions for the sector in Peru and sector development. **BSO Level** = Capacity building activities, development of tailor-made services and support of sector development initiatives. **Micro Level** = Support of companies in Peru (ECP) and acquisition of European partner companies (buyers, investors).

The following recommendations start with a {number} which indicates the reference to the solution design in table 13.

Recommendations at Macro Level

Fields of action for CBI, BSOs and further organisations:

- {13} Value adding by entering into the re-export business in EU/EFTA countries: **CBI** should discuss with MINCETUR/Promperu and other related BSOs the issue of re-export for Brazil nuts and quinoa, and propose conducting a study in order to better understand the inner-European trade flow. The latter is the pre-condition to develop a tailor-made and product-specific strategy. In particular with the growing market for quinoa, more opportunities are arising for exporting directly to processors and packers (see also ADEX office in Rotterdam at BSO level). Direct sales will increase value added of the Peruvian export production of Brazil nuts and quinoa. In addition, planning of production might be facilitated as Peruvian exporters achieve better insight into market developments and trends when dealing directly with the processors and packers. A re-export strategy can only be successful if Peruvian exporters do their homework in regard to researching and achieving product quality, quality assurance systems etc. Specialized importers know how to manage supply with a standardized product quality. Direct relationships with clients in Europe are an important characteristic of sustainable business models.
- {1} Protection of rainforest: The Amazon rainforest is the collection area for Brazil nuts. **CBI** should initiate a roundtable with Peruvian national and regional authorities to determine whether collecting communities could be better protected / retooled in the face of illegal mining activities endangering large areas of the productive basis. Legal and sustainable income generation by collection is the better long-term alternative for development.

Recommendations at BSO Level

Fields of action for CBI, BSOs and further organisations:

- {13} ADEX is interested in opening an own import trade office in Rotterdam and asks how **CBI** could support this project and/or which co-operating opportunities exist (more details can be found in the general country programme strategy). In regard to the handling of small quantity orders, a trade office with storage capacities would facilitate the development of direct sales to processors and packers in Europe. A trade office could also become a partner in launching new product campaigns and/or product promotions (e.g. for cañihua together with the local government of Puno).
- {11} The market position of Peruvian cañihua among EU importing countries should be strengthened as future growth is assumed because European importers are constantly looking for new products with health properties. **CBI** should invite related BSOs and the government of Puno to a workshop aiming to increase the export of certified organic

cañíhua⁵⁷.

- {11, 13} **CBI's** selection of trade fairs and acquisition of European companies for the programme registration should take into consideration in which countries Peruvian products are still not known and/or have less importance. In order to increase sales of quinoa, countries with low market penetration of Peruvian quinoa, such as France⁵⁸, Belgium and UK, should become strategic target markets.
- {6, 10} In cooperation with a BSO organization and financial institutions, **CBI** should initiate the development of a strategic plan on needed improvements (and investments) in regard to the processing infrastructure and targets should be set. Among others for high value-products, like Brazil nuts, the installation of a CO₂ pressure chamber should be considered as this would cut the risk from losses in transit (suitable for service providers as well). Also, the number of cleaning and sorting facilities for Andean grains is still limited.
- {4} CBI should initiate a roundtable with Promperu, ADEX and CCL together with MINAG, INIA and universities to discuss opportunities for the introduction of market appropriate and locally grown plant varieties (e.g. big size quinoa grains, and super sweet tarwi).

Fields of action for CBI and BSOs:

- {1, 12} In co-operation with Promperu, ADEX and CCL the existing capacity building tools of Ruta Exportadora should be assessed in regard to the main bottlenecks identified in this VCA. In particular tailor made training and capacity tools for selected producer organizations (pre-qualified in regard to existing experience and size) in the small farmer training module are seen as crucial especially if there are producer organisations that participate in the ECP, **CBI** could support these groups to achieve suitable certifications and
 - a) to improve export management skills of larger producer organizations,
 - b) to enable producer organizations in developing export business directly,
 - c) to develop export oriented consortia of various smaller producer organizations.⁵⁹
- {1, 8, 9, 11} CBI and the BSOs should strengthen the Peruvian image as a supplier of specialty grains, pulses and nuts from native habitats (addressing the Peruvian biodiversity values). In this context giant corn and lima beans, with DOC certification, should be utilized as a marketing tool (and ideally extended to other products like cañíhua). International marketing of these products should include a stronger focus on “certified/verified” supply chains. At the same time daily business reliability needs improvement through trainings and individual coaching.

Recommendations at Micro Level

Fields of action for CBI and BSOs:

- {1, 12} **CBI** should support direct-sourcing partnerships with EU importers e.g. in order to facilitate compliance management with the rising number of requirements in

⁵⁷A workshop for acquisition of potential ECP participants in Puno could be used by CBI to start this process. Follow-up needs to be done by the regional government and BSOs as CBI will focus on linking producers with the EU market.

⁵⁸ Bolivia is the main supplier in France

⁵⁹ This tool can be applied for other sectors too as most of the supply chains rely on producer groups.

documentation, traceability etc. A further significant advantage would be additional income generation in the producing regions. This issue should become part of a CBI ECP module on “fair benefit sharing with smallholder producers”. In addition, the module should include recommendations for processors and exporters how to contribute to strengthening of grower and collection groups, a principal precondition to secure future production. For scaling up in production of lacking crops, combined efforts with coffee and cocoa producers’ associations should be considered as they provide readily certified fields and could benefit by diversification of their fields.⁶⁰

- {2} Selection of ECP participants (specific target): Peruvian exporters and/or producer organization should be identified who are committed to developing a range of organic pulses (e.g. black beans) and organic/fair-traded Brazil nuts, and organic cañihua for export business.
- {6, 7} Selection of ECP participants (specific target): Together with the BSOs **CBI** should identify a food processing company committed to develop an organic line of canned pulses, another company to develop a range of gluten free products from Andean grains as well as achieving IFS certification (both). CBI should directly support the achievements of IFS certification and catch it with European buyers⁶¹.

Conclusions for the planning of the CBI programme:

The authors recommend integrating the Andean grains, nuts and pulses sector into the CBI country programme. CBI interventions in this sector as described earlier will have a direct and positive impact on marginalized small farmers in Peru. Nearly in all product groups small farmer structures exist and related producer organizations are involved.

All sector organizations which have attended the CBI validation workshop have shown clear interest in active participation in the CBI programme. In addition, the sector got national and international funds in order to develop export oriented value chains. Thus, co-funding opportunities exist which will facilitate the implementation of successful CBI interventions.

CBI should develop cooperation agreements with the BSOs recommended in chapter 6 and ask for their active participation in a sector specific steering committee. CBI should think about setting up one steering committee for grains, nuts and pulses as well as for natural ingredients in order to reduce management work. In various aspects both sectors are linked (in regard to biodiversity/biocomercio aspects, in regard to involved sector organizations etc.).

CBI should concentrate on sustainability certification (organic, fair-trade etc.) in order to cope with existing CSR risks properly.

And last but not least a market demand for products in particular Andean grains and Brazil nuts allows for successful increase of export volumes. Thus it is seen as a realistic option for CBI to identify European importers and processors interested in becoming development partners for ECP participants.

⁶⁰ Also valid for natural ingredients

⁶¹ ECP/HRD modules „How to achieve IFS/BRC certification of a food processing company?“ is a sector crossing activity and can be combined.

Short term/immediately after programme approval:

1. In collaboration with Promperu, ADEX (Comité Nacional de Menestras), CCL/SNI, Sierra Exportadora open a call for 'export coaching' to SMEs and producer groups, inviting particularly:
 - Exporters and producer groups and involved processors of grains (quinoa, kiwicha, cañihua, chia seed, giant corn), pulses (black beans, black eyed beans, Lima beans (habas)) and brazil nuts
The invitation should as well be directed to organic producer organisations of coffee and cocoa as they have potential to diversify their product range rapidly on already certified fields (beans).
 - Producers of added value products and those that focus on the quality / sustainability (organic / fair trade, etc) high-end market segments (they should be awarded a higher score in the selection process)
 - Cooperatives and producer groups (they should be given a higher score in the selection process, on selection criteria like 'social/development impact', or 'from rural areas')
2. Open a call-up for interested European companies interested in building direct sourcing partnerships with Peruvian suppliers, focusing particularly on cañihua, R&D for products like a gluten free product range (pasta from quinoa, cookies); snacks (Canchita/maíz crujiente); canned
3. Establish a sector committee, led by Promperu and consisting of at least ADEX, LCC/SNI, Sierra Exportadora, CIRNMA, ASAIGA, ANPE to promote, and support the programme's implementation.
4. Provide Andean grains, pulses and nuts a prominent position in the market-driven natural ingredients sector export strategy/plan.

Medium term/After & depending on company selection:

5. In the export coaching & training for participating SMEs/producer groups, give special attention to:
 - Coaching in acquiring relevant standardized product- quality, -safety, and -sustainability (organic, fair trade, etc) certifications (ISO 9001, HACCP, IFS/BRC etc) (certifications to be financially supported by Promperu)
 - Training in negotiation skills for producer groups
 - Training in management skills for producer groups
 - Marketing the unique Peruvian heritage of Andean grains and the Peruvian cuisine in the Export Marketing Plan
6. Develop and support 1 or 2 lighthouse projects in the quinoa / beans sector, in collaboration with EU importers and producer groups selected for the coaching. (see country programme for more ideas on lighthouse project).
7. Develop Tailored Market Intelligence for processed food participants and for re-export-strategy (grains, brazil nuts)
8. Use the sector committee on specific bottlenecks that the participating SMEs/producer groups will experience (expected bottlenecks: pre-financing tools for primary production, endangered productive basis (brazil nut), standardized product quality, investment into cleaning and sorting facilities, reduction of losses during transit).

10. Annexes

10.1. Annex 1: Export ranking quinoa per destination (complete list)

Peruvian quinoa exports ranked by value 2012 (FOB in US-\$)						
N°	Destination	2008	2009	2010	2011	2012*
1	USA	3.257.182	3.413.213	8.562.663	15.392.002	19.405.725
2	Australia	2.458	131.110	390.571	1.268.098	1.812.201
3	Canada	120.684	245.450	558.383	1.366.931	1.636.580
4	Germany	248.023	736.810	1.050.627	2.052.558	1.362.360
5	Israel	258.049	1.005.582	530.711	434.243	900.872
6	Netherlands	28.873	158.897	55.778	373.728	797.194
7	Brazil	0	69.616	90.493	419.130	771.483
8	Italy	11.636	18.212	152.959	1.615.851	647.645
9	New Zealand	266.616	276.467	321.200	549.092	482.050
10	UK	3.211	85.653	14.091	53.317	366.922
11	France	5.967	34.533	205.450	62.530	267.066
12	Japan	437.561	359.496	371.041	316.747	233.229
13	Ecuador	177.653	405.959	388.616	262.102	206.033
14	Chile	13.780	63.482	63.489	227.654	192.258
15	Sweden	134.555	224.742	246.749	276.991	179.534
16	Belgium	3.692	349	170	0	114.626
17	South Africa	0	106.038	0	143.056	106.299
18	Spain	115.367	97.647	82.481	119.388	102.274
19	Uruguay	6.445	33.525	28.800	49.983	64.760
20	Lebanon	0	0	0	161.970	57.806
21	Russian Federation	0	0	31.675	104.989	53.077
	Others	200.221	77.747	273.308	450.564	207.448
	Total	5.291.974	7.544.527	13.419.255	25.700.924	29.967.441

10.2. Annex 2: Main pulses consumed in the EU and Peruvian total exports (2008-2011)

Broad beans&horse beans (HS 071350)	Import value FOB in thousands US-\$			
	2008	2009	2010	2011
World	325,175	268,567	348,000	457,346
EU-27	49,636	38,427	32,911	37,396
Italy	26,968	19,420	17,121	16,466
Spain	10,759	9,927	6,692	7,529
France	3,856	2,092	2,015	4,105
Greece	1,674	1,493	1,262	1,830
Germany	601	620	733	1,573
Portugal	771	938	855	1,445
Peruvian total exports*	1,500	1,200	2,400	3,800
Kidney beans&white pea beans (HS 071333)				
World	1,721,028	1,511,618	1,494,900	1,704,857
EU-27	570,404	487,680	482,974	535,858
Italy	130,800	92,904	108,629	132,570
UK	104,432	121,920	109,472	110,132
Spain	72,106	50,423	54,356	55,500
France	54,294	42,787	42,342	51,806
Portugal	44,963	35,367	34,661	34,408
Netherlands	30,759	28,995	27,986	28,423
Peruvian total exports*				1,211
Beans, small red (Adzuki) dried (HS 071332)				
World	95,379	85,419	119,200	117,408
EU-27	4,654	5,522	5,673	5,696
France	1,537	1,697	1,709	1,487
Netherlands	421	195	468	680
UK	386	544	488	672
Poland	78	174	1,042	661
Germany	516	537	461	555
Peruvian total exports*				217
Urd, mung, green gram beans (HS 071331)				
World	551,956	867,997	1,097,377	930,803
EU-27	35,605	31,463	42,438	48,528
UK	15,057	12,358	16,813	20,553
Netherlands	5,252	5,476	9,907	9,688
Belgium	2,172	2,110	2,419	4,355
France	2,887	2,718	2,273	4,137
Germany	2,194	2,769	3,041	2,906
Italy	1,346	609	1,968	1,264
Peruvian total exports*				189
Tarwi (included in HS 713509000)				
Peruvian total exports (mainly to Ecuador)**			812	543

Source: Trademap 2013; *Source: ADEX 2011, SIICEX 2013; **Source SIICEX 2012

10.3. Annex 3: Contact details of selected stakeholder organizations

MINAG (Ministry of Agriculture), Dirección de Agronegocios
Mr Juan Felipe Cabrera Bielich, Director Agronegocios,
Dirección General de Competitividad Agraria;
Mr Ing. Rabines, specialist in grains;
Ms Ing. Rosa Palomino, specialist in pulses

INIA (Instituto Nacional de Innovación Agraria)
Office Puno: Quinoa, Cañíhua: (Vidal Apaza; Policarpo Catacora)
Office Cajamarca: Kiwicha: Santiago Franco
Office Cusco: Giant Corn: Miguel Angel Pacheco; Wladimir Jara; Walter Delgado
Quinoa: Victor Nina; Guido Castelo

CIRNMA Puno: Centro de Investigación de Recursos Naturales y Medio Ambiente
Jorge Reinoso: agroindustria; Roberto Valdivia: quinua

ANPE: Asociación Nacional de Productores Ecológicos ANPE, Lima, Cusco,
www.anpeperu.org;
Moisés Quispe; maíz
Mario Tapia; quinua, qañiwa, tarwi

Universidad Católica Santa María, Arequipa.
www.ucsm.edu.pe
José Luis Lescano; quinua, tarwi

Universidad Nacional de Cajamarca.
www.unc.edu.pe
Isidoro Sánchez; botánica, cultivos andinos

Universidad Nacional San Antonio Abad, Cusco.
www.unsaac.edu.pe
Pompeyo Cosio; maíz, tarwi
Aquilino Alvarez; quinua
Maywa Blanco; tarwi
Erick Yabar; plagas de cultivos andinos

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Luz Gómez; quinua, kiwicha
Félix Camarena; fréjol, tarwi
Ricardo Sevilla; maíces

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Ángel Mujica; quinua, qañiwa, tarwi
Pablo Cesar Aguilar; quinua
Eulogio Sanabria; Rene Ortiz; plagas de cultivos andinos