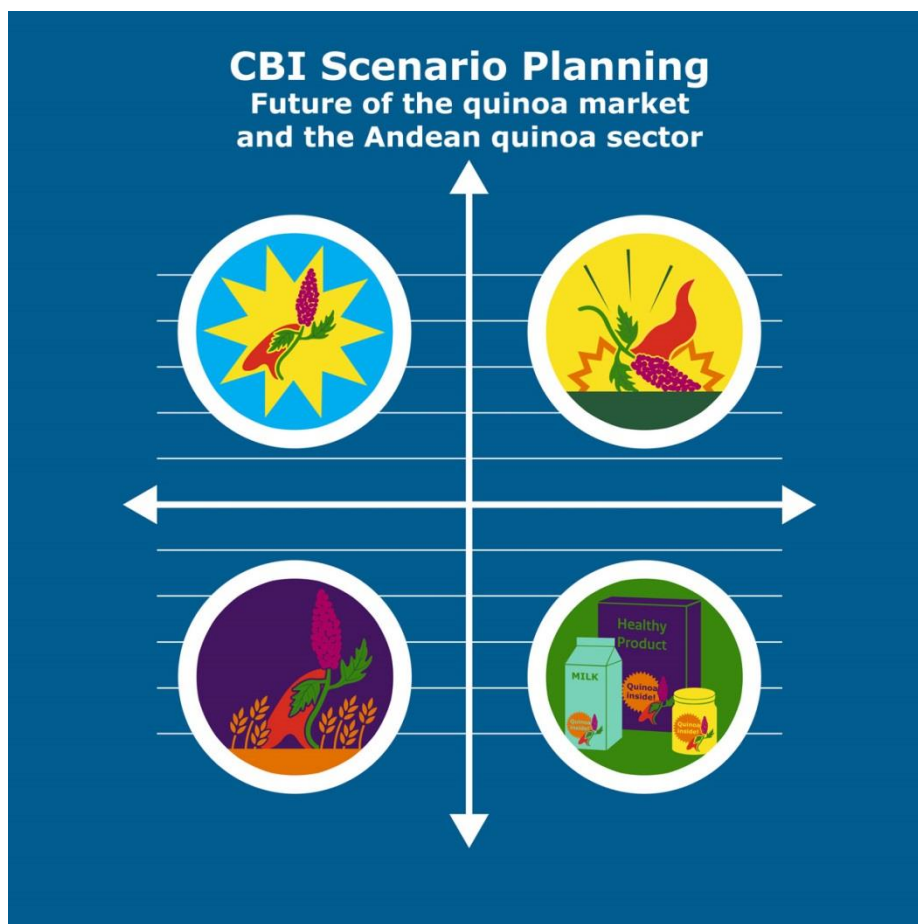




CBI Scenario Planning: The future of Andean quinoa

Global pressure on a local resource

The spectacular development of quinoa exports from Bolivia and Peru in the last few years illustrates rising demand in Europe for imports of functional and health food products. So how will this trend affect the quinoa business in the time ahead? And what other trends and developments will shape the quinoa market in, say, the next decade? In this CBI Scenario Planning document, we will discuss four separate scenarios for the Andean quinoa sector that may unfold in the next ten years – along with the opportunities and challenges each scenario holds for Andean quinoa exporters.



1. Introduction

Target group & purpose

This Scenario Planning document is intended as a tool for all importers, exporters, Business Support Organisations (BSOs) and policy-makers with an interest in quinoa – as well as farmers and agricultural support institutions. The purpose of the document is to provide input to the actors in and around the quinoa sector to support them in the development of a strong and sustainable value chain in all its definitions.

Time frame: ten years

The timeframe for the scenarios outlined in this document is ten years (i.e. 2014-2024). On the basis of current trends influencing the quinoa sector, we have predicted several directions in which the sector is likely to develop over the next ten years. It is very likely that in the coming years these scenarios take place at the same time or in a certain sequence.

Primary and secondary research & focus groups

The scenarios we've arrived at in this document are based on trends we analysed using both secondary research (e.g. articles and market reports) and primary research (e.g. interviews). In addition to these activities, we held focus group meetings with both importers and exporters to discuss the trends and scenarios. The scenarios therefore do not necessarily reflect the visions and opinions of CBI.



Source: Food First, 2013

2. Key trends

In order to anticipate possible future scenarios, we must have an understanding of the basic facts. On the quinoa market, the important current facts can be summarized in a number of key trends:

- 1) *Quinoa consumption in foreign markets is rising*
- 2) *Production in the Altiplano, or highland plains, of Bolivia and Peru, is rising*
- 3) *New products based on quinoa are being developed*
- 4) *New varieties and new production models are emerging as a result of research*
- 5) *Quinoa prices are going up*

In the next paragraphs we take a closer look at each of these key trends.

- 1) *Quinoa consumption in foreign markets is rising*

The rise of quinoa consumption in foreign markets can be largely attributed to the health trend among consumers in the West. More than ever, consumers have become aware of the relationship between food and health ('You are what you eat'). The subject is getting a lot of publicity; the search for healthy foods may have started out as a hype, but it has now become a trend. In the case of quinoa, research conducted by renowned institutes, such as NASA and FAO, has contributed to the grain's image as an exceptionally healthy food product. The media have also discovered quinoa and have been rapidly spreading information about this new 'superfood'.

Although some media are also drawing attention to quinoa's demerits, such as the social and environmental issues involved in production, still the grain's overall image is that of a unique and more or less irreplaceable health food. That means consumers are unlikely to switch to other products.
- 2) *Production in the Altiplano, or highland plains, of Bolivia and Peru, is rising*

In order to meet the growing demand, the quinoa sector faces the challenge of stepping up production. This is easier said than done. In the Bolivian and Peruvian Highlands, the so called Altiplano, production expansion is hampered by the fragility of the ecosystem, the harsh living conditions, the limited availability of labour and the lack of support structures. Various programmes have been set up in the highlands to assist farmers in raising their output in a sustainable way.

In the Andean valleys, the coastal region of Peru and the tropical areas of Bolivia, opportunities are of a different nature. Although the high-quality varieties most suitable for export, such as Quinoa Real, are difficult to produce in the lowlands, they can certainly compete by producing higher volumes and in this way offer their produce to a lower price to less discerning buyers.
- 3) *New products based on quinoa are being developed*

While quinoa trade still mainly consists of the unprocessed grains, there is also a growing variety of food products on the market which are based on quinoa. Flakes are the most 'basic' of these products, but there are also more sophisticated quinoa products such as pastas, crackers, candy bars and burgers. These products are growing in popularity among a health-conscious clientele that exceeds vegans and people who are suffering from a gluten intolerance. This trend is strongly promoted in Bolivia as it creates more added value to the produce.
- 4) *New varieties and new production models are emerging as a result of research*

In the past, numerous unknown foods from distant regions have become household names in the West. Perhaps the best-known examples are tomatoes, corn and potatoes. Thanks to research, cultivation of these crops is no longer limited to their regions of origin. The enormous pressure on Andean quinoa production may trigger a similar development. Several countries other than Peru and Bolivia – such as France, Canada and Australia – already produce quinoa, though their annual volumes amount to no more than a few hundred tons per country. In February 2014, the first Indian quinoa was presented at the Biofach trade fair in Germany. In other parts of the world, quinoa production experiments at lower latitudes are underway. It is difficult to foresee at this stage how these different countries will perform in the years ahead. But if tomatoes, potatoes and corn are anything to go by, the original producers in Peru and Bolivia need to stay on their toes.
- 5) *Quinoa prices are going up*

Growing consumption and production limitations are together causing a surge in prices. According to Eurostat, the average European import price before the quinoa boom in 2006 was € 1,060 per ton. By October 2013, average import prices were up to € 3,190. Today (February 2014), prices of around € 6,000 per ton are quoted for white organic

quinoa.

These price developments did not stop import volumes from increasing by 70% in Europe in 2013. Evidently, consumers accept the price increases and are continuing to buy quinoa, although it is worth noting that the full impact of the price increase has not yet reached consumers.

One of the consequences of the price hike is that traders in the Andes and elsewhere now need much more working capital to purchase quinoa. Their need for financing has increased tremendously and exporters are increasingly requesting pre-financing from their buyers.

3. The Four Scenarios

On the basis of the key trends described in the previous chapter, we arrived at four scenarios that may unfold in the next ten years for the (Andean) quinoa market. Please note that these scenarios are by no means mutually exclusive: some, or even all, of them, may unfold at the same time, resulting in differentiated market segments and value chains. These are the scenarios:

1. 'Superquinoa'
2. 'Collapse'
3. 'Special commodity'
4. 'Quinoa Inside'



Scenario 1: Superquinoa

An exclusive, niche product

In the 'Superquinoa Scenario', we assume that quinoa consumption will 'only' increase fivefold (i.e. from 8 to 40 thousand tonnes in Europe) in the next 10 years. Compared to staple foods like rice, quinoa will remain an exotic niche product and it will gain a position on the market as an exclusive product: 'superquinoa'.

Bolivia is positioning its quinoa like this right now. The product's exclusivity and high added value are obvious, as quinoa can easily be sold as healthy, authentic, organic, and fair trade. Bolivian suppliers are building their brands on all of these unique selling points. The number of consumers aware of these benefits is relatively small, however, and those who buy quinoa generally have a specific purchasing motive: they are vegetarian and need the proteins, they require gluten-free products or they have ethical motives for buying the 'exotic product from the Andes'. These motives explain why this group of consumers is willing to pay good money for quinoa (up to €16 per kg at retail stores in the Netherlands at the moment). Compared to the prices of other substitute grains, these are high prices.

Restrictions on production growth

In the 'Superquinoa Scenario', production will continue to grow in response to growing demand, but natural restrictions will limit the increase in production. Superquinoa buyers will only want 'the genuine thing', such as Quinoa Real and other authentic varieties harvested specifically in the Altiplano region, where organic production is dependent on fallow periods and a delicate equilibrium with lama keeping. Because of these factors, sustainable growth will be slow. Because of the high prices of this Altiplano quinoa, food manufacturers will be unable to develop broad ranges of new quinoa-based products, preferring to use cheaper, less exclusive varieties or even substitutes.

An exclusive segment in a larger quinoa market

The development of the 'Superquinoa Scenario' does not exclude the other scenarios described below. More likely, this scenario will play out in a smaller segment of a larger quinoa market. This larger market will also feature less exclusive quinoa varieties, such as non-organic quinoa from new production regions. In Scenarios 2 and 3, we will look at the relation between a possible conventional quinoa market and a superquinoa market.

Opportunities for Andean exporters:

- Consumers in this scenario will consider quinoa from the Altiplano to be the only authentic superquinoa. This authenticity will be a major aspect of superquinoa's

Considerations for action:

- Traditional farmers in the Bolivian highlands can distinguish themselves from competitors by growing Royal quinoa.

- exclusiveness.
- Consumers looking for exclusive superquinoa will be most interested in Royal Quinoa, but other quinoa types from the Andean region may qualify as well, provided they are organic and fair trade certified. Royal Quinoa, which grows only in Bolivia, is the most attractive quinoa grain in this scenario.
- Specialist retailers in the West, such as health food shops, have a keen interest in exclusive products like superquinoa. These products offer them a means of distinguishing themselves from large retail chains.
- By joining forces, Andean countries can promote their region as the origin of 'the real quinoa'. They can do this by developing a passionate story that emphasises the long tradition and history of quinoa in these countries. This kind of storytelling will strengthen the image of authentic superquinoa.
- Exporters can team up with specialised importers, such as organic and fair trade importers, to position quinoa as an exclusive product and to distribute it to specialist retailers.

Threats:

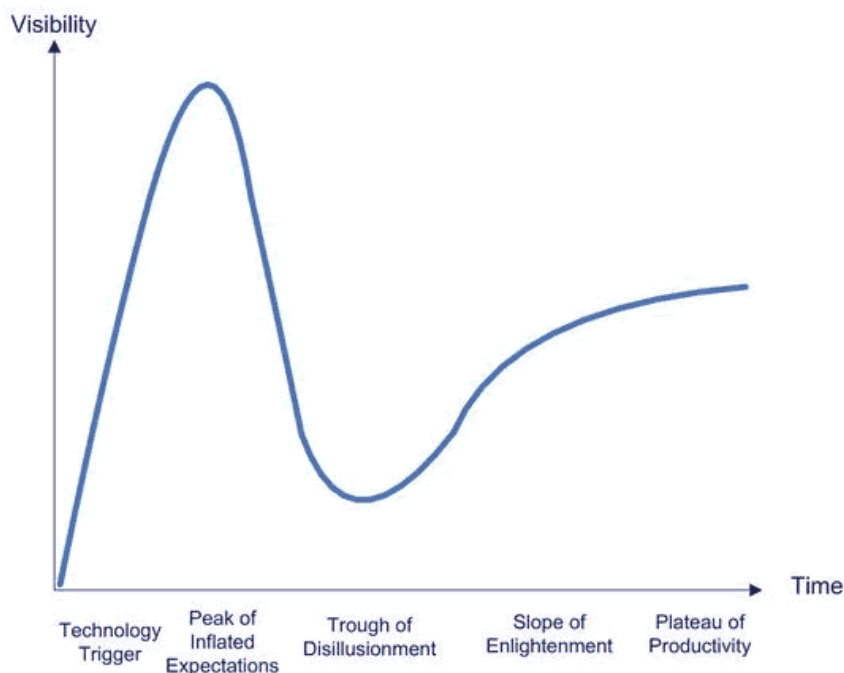
- A serious threat to the exclusivity of superquinoa lies in the increase in supplies of non-authentic, non-organic, non-fair trade quinoa varieties.
- Other threats are the lack of traceability and weaknesses in the organic certification system, which can severely damage the positive image if a scandal erupts.
- Suppliers of superquinoa may do well to develop a Code of Conduct, or a Code of Practice, or even to obtain a Denomination of Origin to get Andean highland producers to supply authentic, organic, fair trade quinoa. By doing so, they will help protect the superquinoa 'brand'.



Scenario 2: Collapse

From trigger to peak to trough in ten years

In the 'Collapse Scenario', the market for superquinoa from Bolivia and other Andean countries – as opposed to conventional quinoa – will in the next ten years go through the first three phases of Gartner's Hype Cycle: technology trigger: peak of inflated expectations; and trough of disillusionment (see the figure below).



'Technology trigger' and 'Peak of inflated expectations'

In this scenario, Bolivia will continue to increase production considerably in response to growing demand. The government will heavily promote quinoa; it has already lobbied with the UN to pronounce 2013 the 'Year of Quinoa'. Together with its partners, the Bolivian government will also support quinoa production with large-scale programmes aimed at increasing both acreage and productivity. Farmers will extend their reach by using not only organic production systems, but higher yielding non-organic systems as well. In the wake of this large-scale development, a variety of problems will emerge. There will be food safety issues – as a result of high pesticide residues, for instance – and sustainability issues, such as soil degradation, loss of biodiversity. Also traceability will become a problem area.

'Trough of disillusionment'

The problems described in the previous paragraph will give rise to scandals about the organic and sustainable nature of superquinoa. Serious doubts will arise regarding the sustainability and healthiness of the product. Assuming that Bolivia will have positioned its quinoa primarily as an ethical product (superquinoa) and other countries will have echoed the same promotional message, demand will drop. The negative publicity will cause the market for superquinoa – i.e. ethically produced quinoa – to lose momentum.

Inconsistent supplies

Supply inconsistency, as a result of scarcity, will cause a further stagnation in the demand for superquinoa. End-market buyers interested in the product will have difficulty coping with inconsistent supplies.



"Unfortunately, Lassie quinoa (a Dutch brand, ed.) is currently not available. As an alternative, you may also use Lassie bulgur or Albert Heijn couscous (a Dutch private label, ed.)."

Source: [NOS](#), 2014

A shift from superquinoa to conventional varieties

The damage to the reputation of quinoa and the consequent collapse of the superquinoa trade will not completely destroy the market. Rather, it will cause a shift in consumption from superquinoa to conventional quinoa varieties, which will have suffered less from negative publicity about sustainability issues. In fact, the global quinoa market will continue to grow: as we have mentioned before, quinoa is more than a hype.

Those benefiting most from the global market growth will be conventional farmers outside the traditional production regions in the highlands, such as those using mechanised production in the coastal region of Peru. Their market share will continue to grow, along with their production. The role of the Bolivian Altiplano region in global quinoa trade will change from international market leader it will shrink to a modest supplier with limited power.

Threats to Andean exporters:

- Soil degradation, caused by production intensification, will result in lower yields and lower quality. The delicate highland ecosystems can handle only small adaptations to the traditional production system.
- The intensification of production, along with increases in acreage, will give rise to land ownership disputes. This social unrest will negatively affect consumers' perception of quinoa production ethics.
- Scarcity will lead to inconsistent supplies, including defaults on contracts. This will damage relations with importers. It may take considerable time and effort to rebuild stable long-term trade relationships.

Considerations for action

- Farmers can prevent soil degradation and contamination by developing and implement sustainable agricultural practices, based on Good Agricultural Practices (GAP).
- Exporters and export promoters can promote the positive effects of quinoa production on the lives of farmers, such as employment and income.
- Producers can stabilise supplies and invest in long-term trade relationships with importers by informing them regularly on price developments and offering them small price discounts in return for more profitable trade, such as supplies of

- Consumers' perception of the sustainability of quinoa production will darken as a result of bad publicity about soil degradation and other sustainability issues (see, for example, [Quinoa: The dark side of an Andean Superfood](#)).

quinoa flakes instead of quinoa grains.

- Export promoters can inform all stakeholders in the quinoa sector about the negative impact of unsustainable production by sharing bad press, convincing them that it affects everyone and requiring joint efforts to prevent further reputational damage.



Scenario 3: Special Commodity

Strong growth across different markets around the world

In the 'Special Commodity Scenario' both demand and production of quinoa will increase **fiftyfold** in the next ten years. Good press, attention from high-profile cooks representing Peru's trendy cuisine and positive consumer perception will all contribute to strong growth in demand across different markets. Quinoa will be consumed from France to China. It will be enjoyed by vegetarians, coeliac disease patients, people who simply want something other than rice for a change, people with an interest in the origins and production of the food they eat, and people eager to try something new.

Intensive production, new varieties, supply chain integration

Farmers in different parts of the world – including low altitude regions like Egypt, Argentina, India and Brazil – will move ahead with intensive production, enjoying support from the FAO, universities and many other organisations. Researchers will support this spreading production by developing new varieties and new production models adapted to different conditions. Quinoa will become a strategic product for big multinational food companies. These players will become active in production through vertical integration. Quinoa will be largely used as an ingredient in end products bought by consumers who are relatively uninterested in the origins of the ingredients.

Competition will revolve around large volumes and low prices, which means economies of scale will be vital. Acceptance of conventional quinoa – i.e. non-organic and non-fair trade – will grow from around 20% to a majority market share.

Growth in the Andean lowlands, specialisation in the highlands

The biggest increase in production in Latin America will not come from the Altiplano, but from lower Andean regions, such as the valleys and coastal areas as well as new countries, like Argentina. Traditional Andean highland suppliers will benefit from the rise in demand, but they will also face fierce competition from producers in other regions. Their best chance of succeeding will be to distinguish themselves as suppliers of authentic, ethically produced superquinoa (Scenario 1). The reason for this is that they can supply only small quantities for comparatively high prices, relying on traditional, but sustainable production systems (crop rotation with lamas and very limited use of other fertilizers/pesticides). Demand for this highland superquinoa will remain strong. This means that in this scenario, there will be excellent opportunities for Bolivian suppliers, as they can claim to be the only suppliers of authentic superquinoa, thereby sidestepping the competition with other countries and securing a firm market position.

Highland producers confined to a small niche

These traditional highland producers will also have to improve the quality consistency of their products and the reliability of their supplies. These improvements are all the more vital, in the light of the fact that there are very few opportunities for value addition in this niche: the market is mainly interested in grains, flakes, flour and products based on those ingredients. This means the traditional highland farmers in the Andes will remain confined to a small niche market for authentic quinoa; the (foreign) large-scale producers will take the biggest slice of the pie in this transformed quinoa market.

Opportunities for Andean exporters:

- The potential for expanding business and supplying more quinoa to growing markets is enormous in this scenario.

Considerations for action:

- Producers can increase production, for example by making more suitable land available, investing in the development of varieties with a higher yield and

- In response to increased consumer demand for new quinoa-based products, the demand among food manufacturers for more processed quinoa (e.g. flour) will increase.
- Superquinoa will remain a strong segment, fetching higher prices than conventional quinoa.

Threats:

- Strong competition from quinoa producers outside the traditional Andean production regions will lower global market prices. New varieties and production models aimed at more cost-efficient production will be rolled out on a large scale across the world.
- As a result of wide press coverage on quinoa all over the world, consumers will cease to associate quinoa with the Andean highlands. This means Andean exporters will be less able to benefit from the historic relation between quinoa and their region.

improving productivity through training.

- Producers can implement quality management systems, such as ISO 22000, to guarantee quality in response to very strict buyer requirements for processed quinoa.
- Exporters can position quinoa as an exclusive product and target buyers willing to pay higher prices such exclusivity.

Considerations for action:

- Andean producers can distinguish themselves by emphasising the unique properties of Andean quinoa. For example, they can develop a passionate story about their unique production conditions and its effects on product properties.
- The Andean producers and exporters should work on a regional brand to keep consumers informed about the origin of Quinoa.



Scenario 4: Quinoa Inside

Capitalising in quinoa’s image by putting it in food products

In the ‘Quinoa Inside Scenario’, food manufacturing companies – who are up front in recognising the potential of quinoa and its nutritional value – are eager to process it in meat replacement products, baby food, lactose-free milk and other health products. The marketing departments of these companies will capitalise on quinoa’s positive image by promoting products with a ‘Quinoa Inside’ label on the packaging. Meanwhile, their Research & Development departments will invest a lot of resources in developing new applications of quinoa.

Quinoa prices will remain high, though, causing food manufacturers to limit the amount and the quality of quinoa they put into their ‘Quinoa Inside’ products. They may even replace as much quinoa as they can with substitute ingredients.

Food manufacturers will work with preferred suppliers

Food manufacturers will also take the lead in developing partnerships with preferred suppliers (i.e. producers). Preferred suppliers will be those capable of supplying large volumes, complying with very strict quality requirements and planning production to deliver at specified times. In this scenario, producers will become contract farmers for food manufacturers – or even enter into joint ventures. They will cultivate quinoa for specific applications developed by the R&D departments of the food manufacturers. Often, they will supply exclusively to their partners.

Quinoa, in this scenario, will become a common product but more as an ingredient in processed foods than as a grain. A significant share of production will go to food manufacturing companies – not just in Europe, but also in Bolivia itself. The Bolivian food manufacturing sector is expanding, with manufacturers recognising that local processing – for instance in pastas and food bars – is vital to keeping Andean quinoa on the world market.

Opportunities for Bolivian exporters:

- In this scenario, new products developed by multinational food companies will stimulate production innovation, including processing. This will result in

Considerations for action:

- Producers can cooperate with food manufacturers to develop different products. Usually, food manufacturers only import quinoa grains and retain

higher efficiency and more value addition in Bolivia.

- Taking advantage of the history of quinoa processing, manufacturers in Andean countries can introduce new products with 'Quinoa Inside'.

Threats:

- In this scenario, Andean producers will face increased competition from other countries, as new varieties and production models pave the way for large-scale production under different conditions.

ownership of extra value addition activities, such as packaging. However, strong suppliers with a long-term trade relationship may negotiate transfer of value addition from the manufacturer to the exporter.

- Contract farming could be an interesting way to establish sustainability in the value chain

- Producers can intensify production by introducing varieties and production models with a higher yield in suitable areas in Bolivia. Producers in areas less suitable for intensification, such as the Altiplano, can focus on the production of organic fair trade quinoa for traditional food applications.

4. Conclusion

Special commodity

Looking at all four scenarios, quinoa is very likely to become a special commodity (as described in Scenario 3). Its market potential is very big – more and more consumers will add quinoa to their staple diet – and there is no question about its future growth. The only question is how fast the quinoa market will grow and how big it will become. As it is unlikely to become as big as the markets for rice, wheat and other staple food markets, the term 'special commodity' seems applicable. In the long run, quinoa may gain a position comparable to that of certain speciality rice varieties, such as basmati, or of couscous.

Pressure on Andean growth may cause a collapse

The speed at which the market is growing today and will grow in the future depends largely on the rate of production growth. Production in the traditional production region, the Altiplano, will not equal demand; pressure on this region to step up production may even increase the likelihood of a collapse (as described in Scenario 2).

Andean highland farmers must join hands for a sustainable quinoa sector

Traditional farmers in Andean countries will need to protect their good image as suppliers of superquinoa to secure their position on the global market and to avoid losing this market niche. Only a joint effort to maintain a sustainable quinoa sector (people, profit and planet) and establish a 'brand' of superquinoa from the Andean highlands as authentic, organic and fair can provide the necessary protection. This branding will require measures such as the development and implementation of a Code of Practice, or a Denomination of Origin, traceability is key to protect the image and ensure the sustainability. Promotion of the positive aspects – and targeting buyers with a specific interest in superquinoa – is also vital.

Farmers must stabilise supplies

Andean highland producers will also need to stabilise supplies to preserve trade relationships, as buyers require the right quality at the right place at the right time. Quality Management Systems will become indispensable.

Low-cost, large-scale production in non-Andean regions

Other regions, such as the Bolivian valleys and lowlands and the Peruvian coastal region, have more potential for realising large-scale quinoa production. These regions will more likely produce larger quantities of conventional quinoa for mainstream markets. As far as quantity and price is concerned, these new producers will leave traditional production regions in Andean countries far behind. The Andean producers will have to distinguish themselves with superquinoa, which remains an interesting segment for traditional producers (as described in Scenario 1). Royal Quinoa, for instance, offers good opportunities to its producers. Other brands can also be introduced involving producers in other traditional growing areas. The key, again, will be to stabilise quality.

Consumers prefer pure superquinoa

Consumers are likely to buy superquinoa mainly in its pure form, or in forms involving minimal processing: grains, flour, flakes and puffs. Consumers of manufactured foods, such as bakery products, will generally be less bothered about whether 'Quinoa Inside' is superquinoa or some other variety; they may be satisfied with organic quinoa from other

origins, or with conventional quinoa. This means that food manufacturers will buy their quinoa primarily from new producers outside the traditional – and more exclusive – production regions (as described in Scenario 4).

Based on the above findings one central conclusion emerges; in order to maintain a sustainable quinoa chain over the coming years, the Andean stakeholders will have to join hands to prevent the loss of their current unique position. This coordination and collective action is essential to ensure sustainable production in the long term, good industry and chain relationships, and a stable market share for the Andean Super Grain.

This scenario planning document was compiled by CBI in collaboration with ProFound Advisers In Development and CBI sector expert Freek-Jan Koekoek

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