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**VALUE CHAIN ANALYSIS, SOCIAL IMPACT AND FOOD SECURITY.
THE CASE OF QUINOA IN BOLIVIA**

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CHAPTER 1

FOOD SECURITY AND SMALL-SCALE FARMERS

1.1 New strategies for food security

After a decade of continuous rising, data on hunger and malnutrition seem to be declining in 2010, but despite this - according to FAO estimates (FAO, 2010) - it is unlikely that it will be possible to match either World Food Summit Goal (halve the absolute number of un nourished people from 1990-92 to 2015) or Millennium Development Goal 1 (halve the percentage of people suffering hunger in the same period)¹.

The up and down trend of the last 3 years reflects essentially the dynamics of food prices (particularly of cereals): the 2008 FAO Report (FAO 2008) – after recognizing that high prices take the blame of the dramatic increase in number of un nourished people - stated that *“High food prices are also an opportunity. In the long run, high food prices represent an opportunity for agriculture (including smallholder farmers) throughout the developing world, but they will have to be accompanied by the provision of essential public goods”*; now, in a further report (FAO, 2010), it is recognized that the improving in data for this year depends very much on decline of international cereal prices following the 2008 peak; the effects of the price crisis, however, should display their effects in next years, because some people (particularly vulnerable households) might have dealt with the crisis by selling assets or cutting down investments which are relevant for food security (such as health or education).

So, even recognizing the importance of new drivers (such as competition in the use of land and commodities by biofuels) in recent fluctuations, these changes in the field of food security can be traced back to the more general problem of instability of agricultural and food prices, where increasing periods are sometimes more prominent but usually shorter than decreasing ones (Azoulay, 2005).

Comparisons among different countries show - within the same common setting – different performances; in this work, following Gibbon and Ponte (2005), I will combine the global value chain approach (Gereffi et al., 2005) with Convention Theory to study how different value chains (particularly at the production level) produce different food security outputs;

¹ According to estimates from FAO and WB, malnutrition index is worsening again in 2011, while price index is still going up.

the “stability” dimension of food security plays a key role here, since a chain where small farmers and vulnerable groups in general are more integrated in the production system could assure more durable achievements, and be able to better react to external shocks.

Moving from two radically different approaches to food security (the *trade-based strategy*, well established along the decades 1980's and 1990's, and the *food sovereignty* paradigm, proposed since 1996), I will try to go beyond the dispute “to go/not to go into the (international) markets”, and look for the conditions assuring/contrasting the achievement of a better condition in food security; focalizing the research on the most vulnerable targets, some assonances with poverty reduction policies emerge. Although there is no unique definition of pro-poor growth, it is possible to highlight at least two characters (Rao, 2000) that it should have to distinguish itself from “simple” growth: to be rapid enough to reduce the absolute number of poor people, and to maximize the impact focusing on their conditions so improving their relative positions. In a similar way, commenting some of the actions in the Brazilian programme Fome Zero, Mance (Mance, 2006) speaks about “*speed economy*” and “*focus economy*”, contrasting them with “size economy” which is a prescription frequently made in development advices.

More generally, pro-poor growth has to face with the question of the existence of a possible trade-off between equity and growth, which is also an inter-temporal dilemma (Rao, 2000); one methodological difference between this approach and the orthodox one is that the latter makes a clear distinction between different tools, with macroeconomics policies used to ensure short-run stability whereby long-run growth will be assured essentially by internal and external market liberalization; on the contrary, pro-poor strategies recognize that macroeconomic policies influence a lot of variables in the economy and can give the way to very different growth paths, (with different results in terms of welfare and allocations); about long-term performances, pro-poor growth emphasizes the contribute of other assets, such us human capital, health, education, etc. Going to the politics to promote pro-poor growth regimes (PPGR), they take into account both the target-goals and the constraints that developing countries (where there is a major need for a PPGR) have to face; this becomes clear when dealing with the question of the openness to international markets: in the absence (often due to fiscal constraints) of the possibility of other tools to enforce domestic production in the international competition, import control remains the simplest way to prevent a negative impact (Rao, 2000; Azoulay 2005, Rodrik, 2001); and also when terms of trade are favourable to the developing

countries, it must be investigated which groups are taking advantages (Kaplinsky, 2000; Wilkinson, 2009).

How can these considerations apply to the agricultural sector in developing countries, and to the goal of food security? In the neoliberal view there is no conflict amongst these issues: on the contrary, there should often be a pro-urban “bias” against agriculture in developing countries, so that market-friendly policies could help to “get prices right” and, by specializing developing economies in exports and taking advantages of abundant labour forces, let them gain the maximum advantage from a freer trade.

A lot of questions arise from this view (Rao, 2002): first, even accepting the orthodox approach, it is questionable if aligning domestic prices to international ones will lead to an increase in *real* wages, given the structure of productive systems and the presence of a great number of small-size farmers (who are usually net food buyers). More important, the low elasticity of agricultural supply and the under-supply of public goods makes the argument of transition from an underdeveloped economy, in which there is no unique possible response to trade openness, more relevant, since it depends on different factors, such as:

- 1) whether the country is a net food exporter or importer;
- 2) whether the domestic diversification process is going on;
- 3) whether the rise in domestic income taxes is able to replace the reduction in import taxes.

In some cases, the space for public action could be exactly to act against the “natural” terms of trade (both external – between advanced and developing economies - and internal, between agricultural and non agricultural goods).

Obviously, national policies are only one piece of the puzzle, since the potential gains from an openness policy also depend very much on the international framework governing international trade (Azoulay, 2005): the possibility of really enforcing the Special and Differential Treatments within WTO rules, or the abolition of incremental importing taxes and dumping policies from developed countries, could give more coherence in order to reach better conditions in food security.

1.2 Food security: concept and measurement

In this work I will use the standard definition for food security, come to light at World Food Summit in 1996: *“Food security exists when all people, at all times, have physical, social*

and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.”

The classical 4 dimensions underlying this definition are (Simon, 2009):

- Availability, which is related to “*sufficient*” and involves the production of food but also its presence in other ways (trade, stocks, grant, etc.);
- Access, which is not limited to the economic dimension but requires physical and social access too;
- Utilization, related to “*safe and nutritious food*”, involves proper use of the food to be consumed (the way by which it is stored, cooked, etc.), but also highlights the importance of a balanced diet and the role of micronutrients for the right development of human beings;
- Stability (*at all times*) requires that all conditions are met at every time, so setting the difference between chronic and temporary food insecurity.

The present definition of food security (and its components) is the result of evolution of ideas about hunger and of the tools to prevent and face it.

At the beginning lack of food has been considered the only cause of hunger (so there was an equation between famine and some kind of shortage in food production); the access dimension (due to the fundamental contribute of Amartya Sen) makes a clear distinction between lack of food and lack of entitlement to get it, where entitlement can have different origins (production-based, trade-based, labour-based, transfer-based) (Sen, 1981); utilization is perhaps the result of the steady meeting between health and agricultural studies.

Although one can think about a hierarchical ordering of these dimension (Barrett, 2010) – where sufficient availability is a pre-condition for the access and then to verify the correct utilization of the food – in the light of the recent crisis it is probably more relevant not to consider one dimension to be more important than others *a priori*.

The way to measure food security followed the evolution of its definition. If we consider food insecurity as a shortage in food availability, food production and food stocks follow immediately as indicators, and measures will be taken at an aggregate level (country and/or worldwide); acknowledgement of the importance of access dimension leads to consider other macro indicators (such as food prices and moreover their fluctuations), but more important it brings out the need to move food security analysis at household level,

which is after all the ultimate aim of every food security action; following this approach, recently (Webb et. al, 2008) more emphasis has been put on a shift from objective to subjective measures.

Due to the multidimensional character of food insecurity, it's hard (and sometimes misleading) to resume all the information relevant to study the phenomenon into one unique indicator. In addition, it is not always possible to guess the right variable which will be influent, so it is common practice to resort to some proxies; for instance, in a recent study mapping hotspots for climate change and food insecurity (Ericksen et al, 2011), different indicators are taken in consideration to evaluate different dimensions of food security:

- Availability: current crop yields, net food production index number per capita
- Access: GDP per capita, % population living below USD 2/day, transport time to markets, monthly staple food prices
- Utilization: Stunting, Wasting, Population using unreliable water sources
- In addition, two indicators of possible future vulnerability are considered: population growth rate and agricultural area per capita

Anyway, we can note that generally no specific indicator is suggested about dimension "Stability"; obviously, stability is in one sense a sort of "additional dimension", that is it requires that previous conditions (availability, access, utilization) are met at any time/space; so, for instance, an indicator such as stock reserves of cereals speaks about future "stability in availability". But, since stability is one part of the (presently recognized) components of food security, my opinion is that measurements and indicators (both global and partial) should take into account this dimension separately from the others.

One difficulty (Barrett, 2010) is that usually indicators are based on observational data, so they give us information about the past; policy makers are most interested in the likely future, and this is in some way implied in the "stability" dimension, which should tell us if some present achievement could worsen or improve in the future.

Furthermore, stability is not only related to aggregate variables. Maxwell (Maxwell, 1996) proposed measuring coping strategies as a food security indicator, building an index based on survey data in Uganda; sure this has the credit to bring back the analysis to household level, but two limits seem to arise: 1) "coping strategies" usually relate to short

term practices² whilst a good attribute of a “stability indicator” should be to give signals about long-term evolution of food security facts; 2) they seem to be built about the capacity to face some sudden shock (like a natural event) raising the risk of malnutrition, so they are more important for analyzing temporary than chronic hunger.

But food security policies (which are the focus of this work) have to be necessarily focused first of all on chronic malnutrition, joining macro and micro levels without losing sight of individual feelings (Webb et al. 2008) as a final judgment to assess if a policy is a “good one” or no; food security policies and poverty reduction policies appear again to be answers to the same question.

Comparing different food security policies and regimes requires therefore to take into high consideration the stability dimension, also looking for better measurements and indicators; high performances in some countries in last years could reveal themselves more fragile than in others, particularly in the light of high volatility of agricultural prices: and although, as said before, an indicator about stability could tell us something about the future, there is a lot in the past to take lessons from, comparing food security trends and regimes that have been affirmed along the years.

1.3 Food sovereignty (and its criticisms) and right to food

The concept of food sovereignty comes out in the second half of 1990's as a proposal of a policy framework vital to achieve food security. It was initially developed by the international peasant organization Via Campesina during its conference in Tlaxcala (Mexico) in 1996. They stated that “food security cannot be achieved without taking full account of those who produce food”.

The most recent definition of food sovereignty (which will be used in this work) is the one come out at the Forum for Food Sovereignty in Nyéeléni (1997):

“Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It puts the aspirations and needs of those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations. It defends the interests and inclusion of the

² Indeed strategies listed in the focus groups are: Eating less preferred foods, limiting portion size, borrowing (food or money to buy food), maternal buffering, skipping meals.

next generation. It offers a strategy to resist and dismantle the current corporate trade and food regime, and directions for food, farming, pastoral and fisheries systems determined by local producers and users. Food sovereignty prioritises local and national economies and markets and empowers peasant and family farmer-driven agriculture, artisanal - fishing, pastoralist-led grazing, and food production, distribution and consumption based on environmental, social and economic sustainability. Food sovereignty promotes transparent trade that guarantees just incomes to all peoples as well as the rights of consumers to control their food and nutrition. It ensures that the rights to use and manage lands, territories, waters, seeds, livestock and biodiversity are in the hands of those of us who produce food. Food sovereignty implies new social relations free of oppression and inequality between men and women, peoples, racial groups, social and economic classes and generations.”

Like food security definitions, also the concept of food sovereignty has evolved along time³:

- Previous declarations spoke about the right of countries, now “*right of peoples*” are emphasized
- There is more consideration on the cultural dimension of food production and consumption, and on ecological soundness of methods of production
- The statement about trade is “turned in positive”, by affirming that *Food sovereignty promotes transparent trade that guarantees just incomes to all peoples as well as the rights of consumers to control their food and nutrition.*
- Whilst food sovereignty has been initially proposed by small farmers organizations, now it pretends to “*put the aspirations and needs of those who produce, distribute and consume food at the heart of food systems*”

Notwithstanding the last point, core elements (Windfthur and Jonsén, 2005) of food sovereignty policy framework still reflect mostly the points of view of the original proposers:

- Priority of local agricultural production
- Access to resources (land, water, credit, etc.) for marginalized producers
- Right of countries to protect themselves from under-priced agricultural food imports and need to align food prices to production costs

³ To make a comparison, we can use the definition of Via Campesina which was at the basis of the NGO/CSO Forum during FAO World Food Summit in 1996: “*Food Sovereignty is the right of each nation to maintain and develop their own capacity to produce foods that are crucial to national and community food security, respecting cultural diversity and diversity of production methods.*”

- Reorganize international food trade in order to ensure self-sufficiency (where possible) and in any case to privilege domestic consumption

Statements about food trade are one of the most relevant – and debated – items about food sovereignty: although in different policy papers they affirm that “food sovereignty is not *“directed against trade per se, but is based on the reality that current international trade practices and trade rules are not working in favour of smallholder farmers”* (Windfthur and Jonsén, 2005), the main criticisms against food sovereignty are exactly about the risk of going towards new forms of autarchy, *a priori* denying possible benefits of openness and most of all neglecting the growing problem of non-rural food insecurity⁴; food sovereignty is charged to call for “*old protectionism in somewhat recycled bottles*” (Kerr, 2011) by a mix of old (farmers) and new (including consumer and environmentalist elements) protectionisms, where the only “innovative” contribute of this framework should be that this movement even reject a nation-based notion of sovereignty, putting it at a lower level (“local”, not better defined).

Surely food sovereignty statements about food trade reflect at first problems and interests of a well specified group of stakeholders, but:

1. Probably the contrast “protectionism/openness” (in an absolute way) is a misleading one to evaluate and thus accept or criticize the food sovereignty framework, which is perhaps more related to other issues, such as agricultural systems of production (for instance small farmers vs. extensive production), and access and control of resources to produce food;
2. In spite of its initial promoters (social movements and peasant organizations), the idea of food sovereignty has gradually aggregated other different groups (Onorati, 2011), such as indigenous peoples, nomadic pastors, rural handicraft producers and in some way also movements of “responsible consumers” in both developing and advances economies.

More generally, the last food crisis highlighted some malfunctioning in rules governing global trade: since the Uruguay Round rules were negotiated in a context of structural overproduction, they are focused on barriers to import in order to manage conflicts between exporter countries ((HLPE, 2011), but they were unable - in an era of rising prices - to prevent bans on export and at the same time there were few instruments

⁴ It has to be noted however that this kind of criticism is usually made by the same people who claim against a presumed pro-urban bias in agricultural policy in many developing countries.

(sometimes unaffordable for low-income food-deficit countries, due to fiscal constraints), to sustain domestic food sector, especially in poorer countries.

Though there is a wide agreement on what happened, opinions may vary considerably about if and how a reform on trade rules can affect global food security: the recent dispute between the UN Special Rapporteur on Right to food and the WTO Director-General (De Shutter, 2011; Lamy 2011) is just an example of this dilemma, involving not only different perspectives (for example, the chance of insulation policies as the best response to some crises) but even different practical instruments to reach in theory the same goal (for example, both speak about strengthening agriculture productivity, but then they assign a completely different job to instruments such as public policies to enforce smallholders farmers).

In this view, a more promising look at food sovereignty could be not to look for a “yes/no” answer to the question about a more-trade based approach to food security, but to recognize that the questions are about:

- The rules really governing agro-food markets
- Power relationships along the food chain

The first question is more linked to a macro-dimension, whereas the latter one lets us suggest a more specific interpretation of food sovereignty, focusing on true sharing of benefits generating along the food value chain; more than an ideological opposition to a growing integration among food markets, it reflects the loss of social centrality⁵ that occurred to their target groups (smallholder farmers) during the decades 80's and 90's.

Coming back to the criticisms, a first answer could be not only that “*old bottles*” aren't necessarily (or at least not always) the wrong ones; the same pragmatic look at the outputs of more than two decades of neoliberal policies should address the question about the “right” level (local, national, overnational) to judge food sovereignty: at present, we can see that the concept of food sovereignty is being considered in some national (sometimes even constitutional) laws⁶; other experiences - as in Brazil, which is considered one of the “winners” in the restructuring of the agrofood system after the Uruguay Round – exhibit a more complicated but perhaps more interesting picture, and the claim for a more “local”

⁵ More precisely, this is the concept that I'll try to define as “lack of driveness” in the methodological section.

⁶ Bolivia, Ecuador, Nepal

sovereignty reflects the tensions existing inside (and caused by) the transformations of the domestic food production and market sector⁷ (Wilkinson, 2009; 2011).

Again, rather than fixing the “level” *a priori*, what should be noted is where and when the interests of smallholders farmers are sufficiently taken in consideration; this can be translated into the question of what is the best forum to manage problems about food security: not surprisingly, this was another point of disagreement in the De Shutter- Lamy dispute, with the first arguing that WTO doesn’t guarantee enough room for the problem of the link between food security and agricultural trade, since in that forum every decision is subject first of all to the full respect of general trade rules.

In conclusion we can say (Windfthur and Jonsén, 2005; Onorati, 2011) that food sovereignty is not referable to a single prescriptive policy, nor to a unique agricultural model; it is essentially a framework to check and change agricultural policies worldwide, putting at the heart the rights and the needs of smallholder food producers.

The first appearance of the concept of “right to food” can be ascribed to 1948 (Windfthur and Jonsén, 2005), when it was included in the Universal Declaration of Human Rights. Because it belongs to the category of human rights, it is referred to individuals and requires states and international organizations to respect, protect and fulfil it, at the same level of other human rights, since one property of human rights is that it is not possible to make a hierarchy among them (UNCHR, 2006). To get to a normative content for this right we have to wait until 1996, after the World Food Summit Plan for Action, when the UN Committee on Economic, Social and Cultural Rights (CESCR) in its ‘General Comment No.12’ states that right to food is “*the right of every man, woman and child alone and in community with others to have physical and economic access at all times to adequate food or means for its procurement in ways consistent with human dignity*”, so linking right to food to the access dimension of food security. However, only in the 2004, with the adoption of the “Voluntary guidelines for the progressive realization of the right to adequate food in the context of national food security” (FAO, 2005), the concept of right to food became more clear and it was made feasible for countries and individuals to reclaim

⁷ Soy production in Brazil is an interesting example (Wilkinson, 2011); soy has been at the heart of the spectacular agricultural performance, (World Bank, 2009), but its dramatic increase, characterized by prevalence of big corporations, extensive use of land and GM crops, generated new conflicts for the use of natural resources; as a consequence, traditional soy cultivation is getting hold again by small farmers organizations: the debate and conflict of “roundtable on sustainable soy production” is a good example of this conflict.

their rights: although they are still voluntary, so no mandatory obligation subsists, they are concerned with governance, economic development policies, market systems, access to resources, promoting health and education, vulnerable groups, etc. so becoming a tool especially for NGO's and civil society to ask governments for adequate policies.

In addition, even though right to food is essentially a juridical tool, is it possible to imagine a policy framework particularly apt to ensure a good fulfilment of that right? De Schutter (2008) claims that a human rights framework can help to achieve the objective: since one of the characteristics of a human right based approach is the effective participation of all right-holders, an immediate consequence of this approach is that the question “*for whose benefit ?*” is at least as important as the question “*how to produce more ?*” so that some of the considerations about pro-poor growth and the (possible) choice between equity and growth can recur here.

1.4 Food security, food sovereignty and right to food: a first comparison

Comparing the three concepts, their different nature must be remembered: food security is essentially a technical concept, a definition of a goal without a specific way to achieve it; right to food is a juridical tool and refers to a set of obligations (for states and communities of states) that every individual can claim in reason of its universality, again without underlying a given policy, although the human right based approach to development can be considered an useful framework to analyse it; food sovereignty on the contrary is first of all a political platform, pointed out by some well specified social groups (which are – at the same time – food producers and one of the broadly most vulnerable targets about malnutrition).

	Food security	Food sovereignty	Right to food
Targets	Household	Peasants and small farmers organizations	Individuals
Sectorial approach	No	Yes	No
Production	No production model predetermined	Small-size farm, agroecology	No one directly (but production must respect human rights in general and right to food in particular)
Trade	No trade approach predetermined	Protect domestic agriculture and food industry; fight against	No one directly

		dumping policies	
Consumption	No consumption model predetermined	Privilege domestic consumption (for cultural, social and economic reasons)	No consumption model predetermined

What are the links between the three items ? Given its nature, food security is the most broadly interpreted one, and strategies to achieve it vary very much in time and space. Food sovereignty comes out as a reaction to the affirming model of trade-based approach to food security along 1980's and 1990's, putting at the heart of its proposal:

1. restructuring agrofood system with the prevalence of big corporation interests;
2. maintaining high level of subsidies to agricultural sectors in US and EU;
3. The effective possibility – for developing countries – of gaining benefits from international trade, given the existing rules governing it under WTO umbrella;

For such reasons, and contesting the substantial failure in achieving food security (and more broadly reduce poverty gap) with neoliberal policies, food sovereignty supporters affirm that it is the only feasible policy to go toward food security at global and national level, going beyond contradictory strategies and choices that could result from thinking at food security only in a technical way.

The relationship between food sovereignty and right to food is more articulated: even though they suffer for their different births - so they still speak “different idioms” (social movements for food sovereignty, juridical language and international organizations for right to food) - they seem to move nearer from both sides:

- More and more frequently food sovereignty statements and strategies are using juridical instruments to achieve their goals: different countries (also because of the pressure coming from civil society) like Nepal, Bolivia, Brazil, have included the food sovereignty approach in national law, or even in constitutional charts (Onorati, 2011); one of the classical requests is a Covenant on Farmers Rights (Windfthur and Jonsén, 2005); in a recent intervention at the Human Rights Council Advisory Committee, Via Campesina recognized efforts made under a right to food approach to take into account arguments such as access to natural resources, agrarian reforms and priority to investments in the small farm sector (Ikhwan, 2011).
- From the side of right to food, the access dimension is becoming more important, which means not only direct access to food but also equitable access to resources

to produce it (De Schutter, 2008); in more explicit terms, the past Special Rapporteur to Right to Food Jean Ziegler (2004), wrote (after the Cancun failure at WTO negotiates) *“In the face of mounting evidence that the current world trading system is hurting the food security of the poorest and most marginalized, and generating ever-greater inequalities, the Special Rapporteur believes that it is now time to look at alternative means that could better ensure the right to food. Food sovereignty offers an alternative vision that puts food security first and treats trade as a means to an end, rather than as an end in itself”*

Recognition that a global human rights policy framework is necessarily and directly linked to the fulfilment of right to food could be a further step in the coming near of the two concepts, who still maintain, however, their own characteristics, so that they cannot exactly match:

- Right to food statements still maintain a more open view on some strategic issues about food sovereignty, such as international trade (most of all about the real chance to reform institutions like WTO) and the need for protection of the domestic agricultural sector in developing countries;
- Social movements often claim to go beyond existing recognized rights, asking for the establishment of a new generation of social and economic rights (like *Farmers Right* or the *Right to produce*), and anyway they denounce that *“many governments are trying to weaken the language and the recommendations. This demonstrates that there is an urgent need for the UN human rights system to clarify the human rights aspects”* (Ikhwan, 2011);
- While food sovereignty is a policy platform for a specific social group (although the concept is being more and more adopted by others groups, see above), right to food, like every human right, needs to be universal, so that each individual of every social group must be covered by the mandates of the right.

In spite of this, it seems the two strategies can enforce each other and contribute to a better defined human right based approach, by

- constructing a more complete map of involved stakeholders
- improving coherence with other international agreements
- looking for more forceful tools and policies to really enforce prescriptions for the right, which otherwise risks to remain an empty box.

A human right based approach to food security can be at first compared to the dominant (during 80's and 90's) neoliberal/trade-based approach.

Learning from the debate about pro-poor growth, one could say that the neoliberal approach (also in food security) is still more linked to a growth/efficiency approach, requiring:

- Improvement in agricultural productivity
- Improvement in access, especially through international trade
- And, at least, larger and better food production (that could mean not simply more calories but also more micronutrients, for instance through improvements in crops with the application of genetic engineering techniques)

Improvements in food security should then follow as a sort of “trickle-down” effect, so that the rationale of this approach is to avoid a trade-off between food security and global growth and to exploit all dynamic effects⁸ excluding policies that may reduce future growth and future improvements also in food security.

A right to food approach requires better and more direct addressing policies toward vulnerable groups, and it asks for more coherence between food security strategies and other policies, where the latter should be postponed to the former in the case of conflict; however, a request to pay attention at unnecessary distortions is often present in this kind of advices.

Food sovereignty makes a more direct linkage between improvement in food security and poverty reduction, and it adopts a specific point of view (the one of those who produce food), putting forward a complete set of actions to be implemented to achieve the goals (Windfthur and Jonsén, 2005):

- 1) Right to food: recognize the right to adequate and safe food for each individual, and assure legal tools to enforce this right
- 2) Agrarian reform:
- 3) Access to natural resources, such as water and seeds, and fight against efforts to impose any type of control on them; fight against GMO's in agriculture is included here
- 4) Agroecological⁹ production, which is the system of production compatible with small size and community based farming

⁸ Note that this approach is perfectly compatible in the abstract with the idea that agricultural growth is the driving force in poverty reduction, as assessed by a wide literature

⁹ Agroecology can be defined (Altieri, 2005) as “*the application of ecological concepts and principles to the design and management of sustainable agroecosystems*”

- 5) Trade and local markets: it links domestic and international claims, with the common goal of prioritizing domestic production and consumption:
- a) Protect local agriculture (especially from subsidized products)
 - b) An international Convention on Food sovereignty, replacing current Agreement on Agriculture within WTO
 - c) An independent dispute settlement mechanism

Different agricultural development models play a key role in the different approaches (McMichael, 2011); the experience of AGRA (Alliance for a Green Revolution in Africa) goes in the direction of private and market-driven solutions for food security, and the recall to a *Second Green Revolution* –reaffirming the linkage between agriculture and poverty reduction - suggests the need of a growth in agricultural production, particularly for high value and export-oriented crops.

An alternative approach comes from the report “Agriculture at a crossroad” by the IASASTD (2009) where – via the reaffirming of the multifunctionality dimension of agriculture - the market-driven approach to assure an appropriate production for nutritious needs is questioned and more emphasis is given to institutional arrangements for valuing farmer knowledge and common resource management systems.

Obviously, looking at the concrete policies adopted at a national level, it is hard to “assign” a country exactly to one framework or another; usually countries adopt actions inspired at different strategies at the same time, so that two problems arise:

- a) To evaluate the coherence among different actions undertaken
- b) When judging results, it may be difficult to make a direct cause-effect linkage.

So, to make sure that a policy (or simply an action) goes toward improvements in malnutrition reduction, there is the need to better define all the groups involved in that given policy, and how direct and indirect effects can operate to achieve the goal.

But what could be the core elements for evaluating *ex ante* a policy design ?

In the light of previous considerations, there seem to be three key elements:

1. A clear identification of the most vulnerable groups that have to be the target of a policy, with a declared hierarchy in evaluating the outcomes;

2. Stability, because the long-term effect of any policy should be to make targeted groups able to manage possible shocks that could modify their status in food security.
3. The type of value chain they are currently involved in

Chapter 2

Global value chains: dimensions of analysis and relevance for the agri-food systems

2.1 Global Value Chains

A value chain can be defined as “*the full range of activities which are required to take a product or service from its conception, through the different phases of production (involving a combination of physical transformations and the input of various service producers) and delivery to final customers and final disposal after use*” (Hellin and Maijer, 1996: p. 4; see also Kaplinsky, 2000; Gereffi and Fernandez-Stark 2011). The value-adding activities include design, production, marketing, distribution and support to final consumers. They may be located among different firms, operating in different parts of the world. Global Value Chains (GVC) analysis offers a holistic vision of global industries, as they operate in global inter-firms networks.

Gereffi and Fernandez-Stark (2011) emphasize four basic dimensions of GVC methodology: 1) the input-output structure, describing the transformation process, 2) a geographical dimension highlighting the global dispersion of the different activities, based on the competitive advantage of countries; 3) a governance structure expressing how the value chain is coordinated and controlled; 4) the institutional context in which the value chain is embedded. Later on an additional dimension was elaborated as integral to the VCA, referred to as *upgrading* (Gereffi 1999; and Humphrey and Schmidt 2002). As we will see later, upgrading described the dynamics movements of actors along the various stages of the chain.

Among all the dimensions, Fernandez-Stark et al. (2012) highlight the importance of the *governance* structure (i.e. relationships between different actors), and the *upgrading* process (i.e. movements that firms can do into or between different stages in order to gain a higher share of added value generated in the production process), which, more broadly, Pietrobelli and Rabellotti (2006) define as “*innovating to increase value added*”.

In the next three sections we will emphasis the aspects of these dimensions especially useful for the analysis of our case study. Some considerations on the relevance of GVC dimensions for the analysis of the quinoa in Bolivia will close the chapter.

2.2 The dimensions of the GVC

Three dimensions of the GVC - the input-output structure, the institutional framework and the geographical location of firms -, may be well highlighted through the market map. This is a conceptual and practical tool that makes possible to follow the flows of the product along the chain and to understand how existing chains are structured and operate (Hellin and Maijer, 1996). A comprehensive map highlights all the interaction of competing exchanges channels and the variety of final markets to which they converge. It is made up of three inter-linked components:

- Value chain actors
- Enabling environment (infrastructures and policies, institutions and processes that shape the market environment)
- Service providers (the business or extension services that support value chains operations)

It will describe, then, not only the actors who actually transact the main product, but also the policies and the *institutional framework* that shape and influence the market and its evolution (i.e. labor costs, infrastructure, access to research or finance, education, subsidies and taxation, etc.), as well as the supporting technical services, like financial services, transport, information, quality certification etc. It also highlights the *geographical scope* of the VCs, whether they operate at local, national, regional or global level.

Governance is for sure of the utmost importance in the GVC analysis. It allows to understand how a chain is controlled and coordinated and by who. Gereffi (1994: 97) defines governance as “*authority and power relationships that determine how financial, material and human resources are allocated and flow within a chain*”. The concept of governance involves the complexity deriving from the interactions among different players along the value chain. Moving away from the initial dualism ‘buyer driven’ rather than ‘producer driven’, the concept has become more and more elaborated by the literature (Gibbon, Bair and Ponte, 2008). Ponte and Sturgeon (2014) summarize the different approaches to governance in three main approaches, defined as:

- Governance as driving (Gereffi, 1994)
- Governance as linking (Gereffi, Humphrey and Sturgeon (2005)

- Governance as normalizing (Gibbon and Ponte, 2005)

I will introduce here the first two perspectives, while 'governance as normalizing', the perspective that I will adopt for my study, will be analyzed in a separate section.

In the first contribution by Gereffi (1994) attention was focused essentially on the role of the leader firm (or a group of firms) and its influence on the functional distribution of work along a value chain. This was supposed to determine the benefit share among the different players. Two models of governance were identified: *buyer-driven* e *producer-driven*, Gereffi didn't explain from a theoretical point of view what factors determine each type of governance, rather he was just observing the empirical evidence that capital-intensive industries (such as electronics) are usually producer-driven, while labor-intensive industries (such as consumer goods or food industry) are more frequently buyers-driven.

Moving beyond the simplified dichotomy *producer driven/buyer driven*, Gereffi, Humphrey and Sturgeon (2005), focus their attention not only on the behavior of the leader firm, but also on the relationship among all the actors in the chain and specifically on how information and knowledge is transmitted and diffused among the players. From this perspective, three factors are acknowledged as fundamental in determining the type of governance:

A. the *complexity* of information and knowledge required to sustain a particular transaction, particularly with respect to product and process specifications;

B. the extent to which this information and knowledge can be *codified* and, therefore, transmitted between the parties of the transaction efficiently and without transaction-specific costs;

C. the *competence* of actual and potential suppliers in relation to the requirements of the transaction.

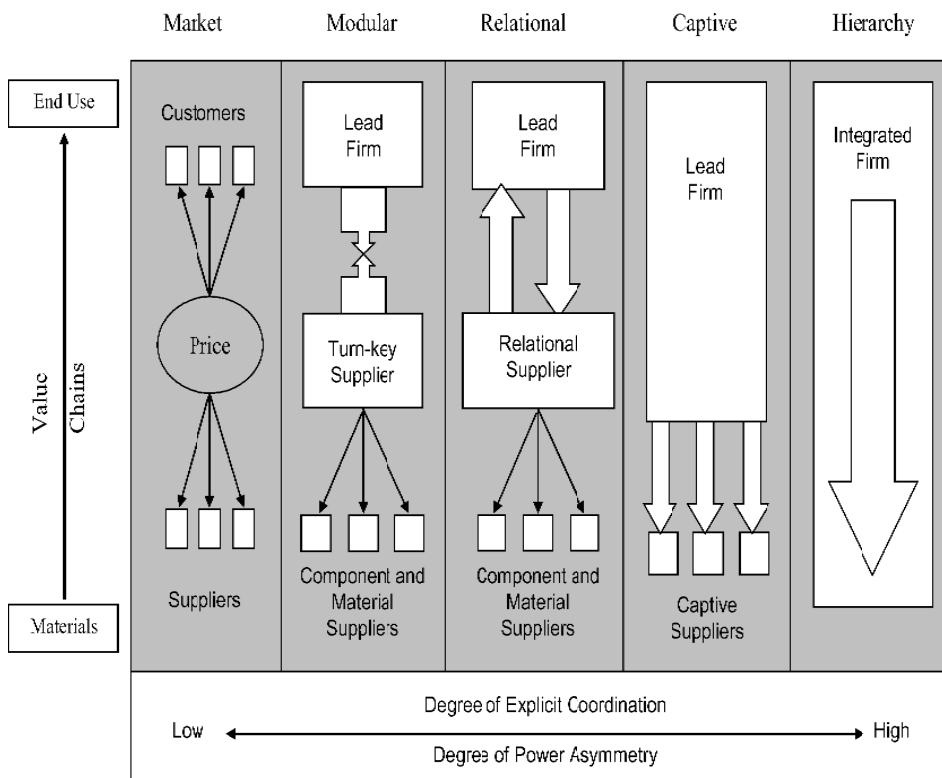
Different combinations of these three factors lead the Authors to identify five typologies of governance, where the chain may be coordinated by: market, relational, modular, captive or hierarchical forms of interaction (Tab XX and Fig. XX). As it is evident from the specification on the table and the figure, relationships are supposed to be more constraining for the suppliers in each step from the market to hierarchy.

Tab. XX – Typologies of governance

Typologies of governance	Characteristics of the governance	Combining factors
Market	The costs of switching to new partners are low for both parties / no formal cooperation among actors is required.	Simple products' specification / Information easily transmitted / Sufficient suppliers' competences.
Modular	Suppliers make products according to customer's specifications, but take full responsibility of the production process and technology	Buyer – supplier interaction are very complex / High volumes of information flowing among firms. Information technology and standards make possible this type of governance.
Relational	Complex and frequent interactions between buyers and sellers based on trust and mutual reliance. Despite mutual dependence, lead firm have the ability to exert some level of control over supplier, but the cost to switch to an other partner is high.	Product specifications very complex / Information is not easily transmitted and learned / high supplier competences
Captive	Small suppliers are dependent on much larger buyers for their transactions. High level of control by the leading firm	High complexity of products / specifications impossible to codify / low suppliers' competences
Hierarchy	Vertical integration	No chance for codifying specifications, product complexity and low or none supplier capability

Adapted from Gereffi et al., 2005

Fig.X – Five value chain governance types



Source: Gereffi, Humphrey and Sturgeon, 2005: p. 89

Following this approach, the coordination mechanisms of the chain works in different ways according to the type of relationship and the asymmetry of power existing among the actors in the chain. The form of governance may of course change in the evolution of the industry, or also change from one stage to the other of the chain. In fact, recent literature shows that GVC may be characterized by multiple and interacting governance structures, which affects opportunities and challenges for *upgrading* (Gereffi, Lee et al. 2009).

Upgrading is the vision of the GVC from bottom up (Gereffi and Fernandez-Stark 2011). It refers to the strategies pursued by firms (or countries or regions) to improve their position, moving to higher value activities in the GVC. Humphrey and Schmitz (2002) identify 4 types of upgrading:

- Process upgrading: a change in the technology adopted to enhance production efficiency
- Product upgrading: the movement towards higher value products
- Functional upgrading: acquiring new function within the same production process (or leaving some functions that can be externalized at a cheaper cost)
- Inter-sectorial upgrading (or chain upgrading): movements toward some new (related) industry.

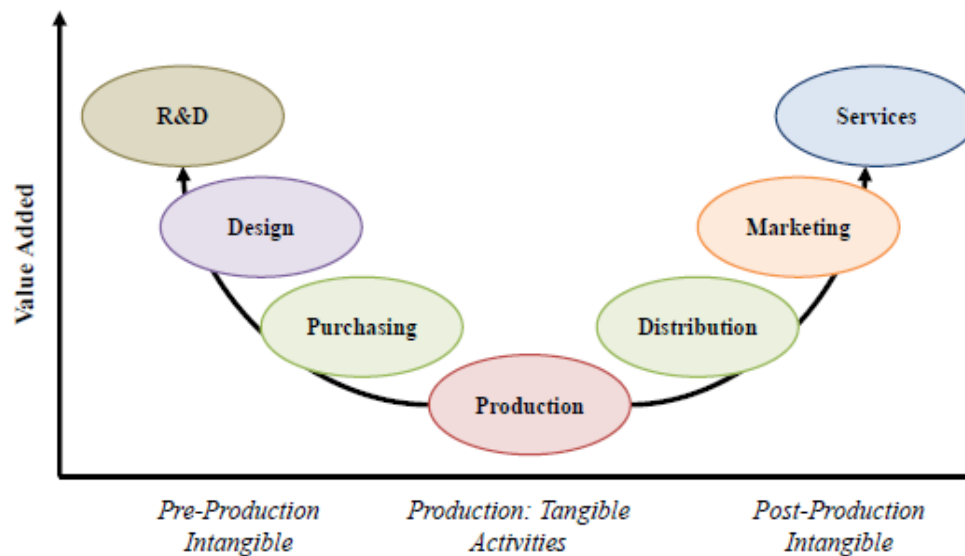
From a dynamic point of view, upgrading is seen as a series of economic roles and capabilities associated with production and export activities, among which *assembly based on imported goods; original equipment production; original brand name manufacturing; original design manufacturing* (Gereffi, 1999). The trajectory from assembly to the other steps is assumed to imply an upgrading, but it is not either simple or inevitable. GVC studies analyzed the conditions under which varied patterns of upgrading and downgrading have occurred in different industries and different countries (Gereffi, Fernandez-Stark 2011).

Focusing on the different strategies adopted by small and medium firms in Latin America to improve their competitiveness, Pietrobelli and Rabellotti (2006) indicate exactly in their ability to upgrade the split between what they define “*high road*” to competitiveness (the capability to participate in global markets and put themselves in

sustainable and higher value growth paths) in contrast with the “*low road*” strategy (based on cost reduction and essentially on wages compression). Furthermore, the ability to *upgrade* is linked to the presence of clusters inducing larger collective efficiency (Schmitz, 1995) thanks to positive externalities and collective action.

If upgrading can be seen as an “ultimate goal” for each firm participating in a value chain¹⁰, it is not possible to define *a priori* a unique (or forced) upgrading path/strategy in firms’ behavior. Nonetheless, Gereffi et al. (2011) suggest the popular image of the “smile curve”, identifying intangible activities (linked to innovation processes such as R&D, design, etc.), at the top, and distribution and marketing, at bottom of the chain, as the stages where most likely it is possible to find the conditions for increasing its own share of benefits.

Fig.XX: ‘Smile curve’ and upgrading



Source: Gereffi et al, 2011:

It is commonly retained that high-value activities are located at the two extremes of the curve, with R&D and design on one side and marketing and distribution on the other. These activities are also characterized by their intangible components in pre-production and post-production stages.

¹⁰ But we will see that this is not always the case. Some firm may choose to downgrade, in order to have the guarantee of a stable market (XXX).

2.3 Governance as normalizing: the contribution of Convention Theory to GVC analysis

According to Gibbon and Ponte (2005) and Ponte and Sturgeon (2014) the term “normalizing”, as a qualification of ‘governance’, should be used as meaning: “to be inspired by a common norm”. In this approach, the reference to Convention Theory (Boltanski and Thévenot, 1991) is explicit: common norms are what make exchanges among different actors to work.

In the value chain literature, Gibbon and Ponte (2005) observe that governance is seen mainly as the possibility to exercise control through product specification. It is largely ignored that, especially in long value chains, different types of governance (in particular: “market”, “modular” and “relational”) may coexist at different levels. Integrating value chain analysis with contributes from convention theory allows to move away from a vision of governance as immediate control over production towards the more general issue of power along the whole value chain.

In the classical approach by Boltanski and Thévenot (1991), six so-called ‘worlds’ are identified, corresponding to different forms of conventions enabling social order and economic activity. They are not hierarchically ordered nor they are historically determined, even though some of them can prevail in different times and characterize a long historical period. In the taxonomy of Boltanski e Thévenot (1991) these ‘worlds’ (or conventions) are traced back to the thought of classical philosophers and political scientists and are identified as:

- the world of inspiration, based on individual creativity and traced back to Saint Agoustin;
- The domestic world, based on the value of personal relationships, trust and reliance and traced back to Bossuet (a French theologian and writer of the seventeen century) and to La Bruyere (a French philosopher and moralist of the same seventeen century);
- the world of opinion based on honor and reputation, where the highest value is to be recognized by the others, inspired by Hobbes;
- the civic world, that base social order and common good on common collective principles and values, as inspired by Rousseau;
- the ‘industrial’ world, where social order is based on a regime of technical productivity and standardization, as typical of the factory. The construction of the ‘industrial

city' brings back to Saint Simon's critique of Rousseau in the book *Du système industriel*, where 'the industrialists and the wises' are opposed to 'the metaphysicians and forensic';

- the 'market' world, with reference to the political philosophy and the the theory of moral sentiments by Adam Smith. The identification of market relation are based on the principle of exchange for a common social good and the idea that 'just price' can set a balance between buyer and seller. The goal of each action brings back to utilitarianism; price and competition are the mechanism of coordination of social and economic action.

Quality, that according to GVC analysis is central in the economic transaction, has also a key role in Convention theory. But in convention theory the concept of quality is not understood as an "objective" attribute of a well-specified good. It is rather a "subjective" attribute affected by cognitive and normative aspects, involving both the external environment and the agents of the exchange. Only in cases of perfect information on the quality of the good or service exchanged, price can express a common level of quality. In all other cases players must reach an agreement based on a compromise among various identified quality conventions. Difference in the easy of transmitting information about quality provides, then, is a first link between convention theory and the governance approach of value chains (Table XX).

Table XX: Linkages between key categories of convention theory and GVC analysis.

Convention theory: 'quality convention'	Convention theory: 'organizing principle'	Global value chain analysis: quality-related mechanisms for exercising 'drivenness'	Mode of governance
Industrial	Productivity	Influence on setting 'content' of quality and standardization or codification; codification of production techniques and (brended) products into a few broad standards; alternatively, ability to convey 'mindset and operational culture'; ability to capture rents through management of information asymmetry on quality; minimizing cost of matching 'civic' quality content through external certification processes (or formulation of codes of conduct) and moving these costs upstream	Buyer-driven (High)
Market	Competitiveness		
Civic	Welfare	Capacity to match 'civil society' demands in terms of minimum socio-economic and environmental standards; 'packaging' these achievements in terms of differentiated product and service offered	Moving towards buyer-driven (medium)

Domestic	Loyalty	Capacity to develop trust through repeated interactions and/or geographic indication; extract rents from the 'uniqueness' of products or production/trade relations	Producer-driven, but often not driven at all
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Source: Gibbon and Ponte, 2005

For Gereffi et al. (2005), the five models of governance can be organized in hierarchical order according to the degree of power exercised by leader firm. In the Gibbon and Ponte's model (2005), though, in the shift from one coordination mechanism to another the magnitude of power doesn't necessarily change. Nonetheless the way the power is exercised by the leader firm changes, as well as the level of drivenness, understood as the absolute level of control over the chain developed through different forms of coordination. For example, when domestic conventions (where quality is determined by trust and reputation) prevail, transactions are usually characterized by a low level of drivenness and value chains are usually producer-driven. On the contrary, value chains governed through industrial or market conventions show a higher level of 'drivenness' and are usually buyer-driven.

Table 1 Key features of orders of worth and quality conventions

Orders of worth and quality conventions						
	Market	Industrial	Domestic	Civic	Inspirational	Opinion
Organizational principle	Competitiveness	Productivity	Loyalty	Representation	Creativity	Reputation
Focus of justification	Product units	Plans, systems, controls, forecasts	Specific assets	Negotiation, consultation, distributonal arrangements	Innovation, creation	Public relations, media coverage, brand reputation
Key testing questions	Is it economic?	Is it technically efficient, scaleable, functional?	Does it follow tradition? Can it be trusted?	What is the impact on society? Is it safe, healthy, environmentally sound?	Is it new? Is it a breakthrough?	Is it accepted by the public?
Measure of product quality	Price	Objective technical measurement	Trust, repetition, history	Social, labour, environmental, collective impact	Spirit, personality, osmotic processes	Opinion poll, social media coverage, subjective judgement by expert
Ease of transmission along value chains	High	High	Low	Medium	Low	Medium

Source: Authors' elaboration; the six orders of worth (as in Boltanski and Thévenot, 1991) in relation to five main elements: entries in organizational principle, measure of product quality and ease of transmission are adapted from Ponte (2009); entries in focus of justification and key testing questions are adapted from Gibbon and Riisgaard (2012).

Source: Ponte and Sturgeon, 2014

2.4 From economic to social upgrading: “capturing the gain” from the perspective of small farmers

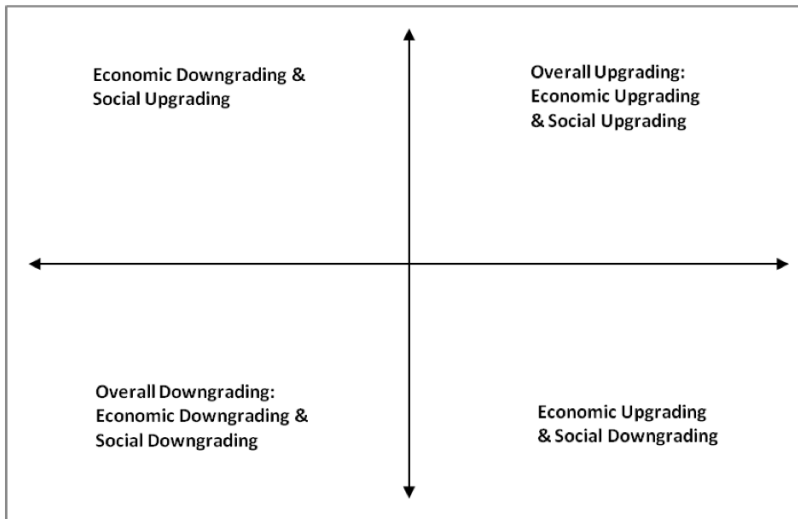
Since its beginning GVC literature focused on economic upgrading, analyzing how innovation and competitiveness among firms may promote growth and development. The assumption was that economic upgrading would translate automatically in social upgrading (decent work, respect for labor standards). But actually that relation is not straightforward (Brown 2007, Locke et al. 2007), and civil society research highlighted some of the negative effects of engagement in GVCs (Oxfam 2004). Economic upgrading may in some cases translate in decline in employment and deterioration of working conditions. Actually, it is not completely clear how economic and social upgrading relate to each other and how they affect different groups of firms and producers in the value chain.

The “Capturing the gain” program¹¹ brings in the GVC literature a new perspective on development in times of globalization and wants to answer the question: does participation to the global economy translate into better jobs for workers in developing countries? A series of cross-countries studies explore the national, regional and global dynamics between lead firm in the North and firms in the South as well as the role of private sector, civil society, national government and international organizations in improving the working conditions of the poorer workers and producers in the global South.

Goger et al. (2014) propose a simple but effective matrix to study the relation between economic and social upgrading, highlighting all the possible options for convergent or divergent trend in the two (Fig.XX):

¹¹ The 2009 program “Capturing the gain: Economic and social upgrading in global produce and trade” aimed exactly to analyze that relation (see www.caapturingthegain.org).

Figure X: Economic and Social Upgrading Matrix



Source: Goger, A., Hull A. Barrientos S. Gereffi G., Godfrey, S. (2014): p. 4

In one of the working papers, Barrientos, Gereffi and Rossi (2010) develop a framework for examining the linkage between economic and social upgrading in global production networks (they use this term, instead of GVC¹²). Economic upgrading is defined as *“the process by which economic actors – firms and workers – move from low-value to relatively high-value activities in global production networks”* (Gereffi 2005:171), for example from assembly of imported goods to original brand goods manufacturing. Social upgrading is about improvements in rights and entitlements of workers as social actors and, more broadly, about the improving of life conditions through work activity (Sen, 1999). The four pillars of the ILO decent work framework constitute the base of the concept of social upgrading: employment, standards and rights at work, social protection and social dialogue (ILO 1999).

Barrientos, Gereffi and Rossi (2010) note that economic upgrading doesn't necessarily translate into social upgrading, i.e. better wages and working conditions. Case studies seem to provide a mixed picture. It is evident that numerous factors affect the link between economic and social upgrading of workers and producers. They include the position in the value chain, the type of work undertaken and the status of workers within

¹² GPN analysis examines not only the interaction between lead firms and suppliers, but also the whole range of actors that contribute to influencing and shaping global production, such as national governments, multilateral organisations, and international trade unions and NGOs. A focus on GPNs also puts more emphasis on the social and institutional embeddedness of production, and power relations between actors, which vary as sourcing is spread across multiple developing countries.

any work category. Authors develop a framework of analysis to *identify different typologies* of work status across global production networks in agro-food, apparel, IT and services, as indicated below:

- i) small-scale household and home-based work;
- ii) low skilled, labor-intensive work;
- iii) moderate-skilled, varied labor-intensity work;
- iv) high-skilled, technology-intensive work.

Small-scale producers or out-growers involved in agricultural production are mostly included in the first category. Furthermore the status of workers has important implication for the ability to participate to economic and social upgrading. Irregular workers and third-party contract workers are most frequent in GVC involving labor-intensive and seasonal production, like agro-food

For the purpose of our study it is important to stress how, according to the Authors' analysis, agro-food involves a relatively large proportion of small scale and low-skill labor-intensive production, particularly at the farm level. For this type of work, economic upgrade may have some positive and some negative effects: it may allow poor workers and producers to gain participation in GVC and market access or provide access to niche markets and labor skills, but at cost of high dependency on intermediaries, who can exploit them. Furthermore, high standards may exclude from access to GVCs, or, even when access is guaranteed, the benefit captured by smallholders and low-skill workers may be very low.

The relationship between economic and social upgrading, and specifically under which conditions economic upgrading leads to social upgrading or downgrading is explored in different GVCs. Competing pressures operating in opposite directions are identified:

“we can assume that economic and social upgrading (especially in its measurable standards) can be positively correlated, especially when it increases workers' productivity. At the same time, pressures to reduce cost and increase flexibility might lead employers to combine economic upgrading with social downgrading (for example by outsourcing employment to a labour contractor). To maintain or advance their position in GPNs, suppliers have to engage in a balancing act between maximising quality (to meet buyers' standards) and minimising costs/prices (to remain competitive to supermarket buyers). This has important

implications for labour and the potential for social upgrading. Suppliers' labour strategies in response to coping with commercial pressures can vary between a "low road" involving economic and social downgrading, a "high road" involving economic and social upgrading, as well as mixed approaches" (Barrientos, Gereffi and Rossi, 2010: p.14- 15).

An example of a strategy of economic downgrading is given by the wine industry in South Africa, where some wine makers prefer to occupy a lower position on the price and quality pyramid for their exported wines to the European market, pursuing a form of downgrading, in order to maintain stable market share and margin (Barrientos, Gereffi and Rossi, p. 15). Furthermore, in some cases certain choices may be considered social "downgrading" for some actors, but not for others.

For example, in agriculture the choice to move from a smallholder job to a wage job in a farm is often considered an example of social downgrading, because of the loss of independence and access to land. However, if the person making this choice is a female worker that used to be an unpaid family worker, the move towards wage labour can represent an improvement in terms of access to wages. Therefore, in order to fully understand trajectories in economic and social upgrading, it is important to keep in mind the characteristics of the actors involved in the process. (Barrientos, Gereffi and Rossi, 2010: p.16)

Three possible trajectories for social upgrading are identified:

A. *Small-scale worker upgrading*: where workers remain within home based production (agriculture or manufacture), but are still able to enjoy improvements in their work conditions, for example, through provision of more secure contracts, better payments and personal protective equipment for health and safety.

B. *Labour intensive upgrading*: where workers move to better labor intensive types of work where they can also obtain better working conditions (example given is women works in garments in Bangladesh or Sri Lanka).

C. *Higher skill upgrading*: where workers move both towards better paid employment and progressive social upgrading. For example, workers in India or China who move from lower-paid low skilled work into the IT sector.

Finally, (Barrientos, Gereffi and Rossi (2010) conclude that, while it is not possible to define a unique path of social upgrading, research indicate that the main improvements in GVCs or GPNs in terms of measurable standards and enabling rights tend to be limited to regular workers. The extension of these improvements to irregular workers meets serious challenges and still it is not clear how to bring ahead cross-border interventions that benefit poor workers located in different countries, but linked through the same GVCs or GPNs.

Other studies reach the same conclusion. Bernhardt and Milberg (2011a) found that, for all countries considered in Latin America, Africa, and Asia, economic and especially social downgrading were more common than previous research would lead one to expect. They found also that positive growth in export market share was associated with economic upgrading, but also with the expansion of lower-value product segments. As for social upgrading, they found that overall trends in employment growth were associated with lower real wages, so that expanding participation in GVCs does not necessarily result in higher paying jobs or more bargaining power for workers or overall improved livelihoods. Therefore economic upgrading may lead to 'immiserating growth' in which firms capitalize by exploiting labor and other "race to the bottom" behaviors (Kaplinsky 1993; in Goger et al. 2014: p.4)

Similarly Goger et al. (2014) summarising the results of studies in African horticulture value chains notice that vast differences in outcomes exist for different workers. Social upgrading outcomes for workers are mixed, with both social upgrading and downgrading occurring across different chains, reaffirming the finding that social upgrading takes place only under particular conditions. In many instances where social upgrading is occurring, workers seldom earn living wages when including inflation (Barrientos and Visser 2012; Evers et al. 2014). Outcomes are also mixed for different crops in horticulture.

"In flowers there has been clear economic and social upgrading of larger producers and wage workers beginning from a low base, but few smallholders access the sector. In fruit (mainly South African) larger producers have economically upgraded, but less competitive producers are failing to survive. Regular workers have benefitted from social upgrading, but associated with this is an increased casualization and use of labor brokers, which indicates social downgrading. In vegetables (mainly Kenya and Uganda), larger producers have been able to upgrade, with some social

upgrading for wage workers (not as great as flowers), but smallholders have struggled to access GVCs”.(Goger et al. 2014: p.14)

Finally, it can be said that the most significant factors affecting access to social upgrading at the level of the GCV correspond to gender, employment status (permanent / casual work), and skill level (high skilled / low-skilled). Underlying each of these factors there are institutional factors relating to the strength of national labor laws, and effectiveness in enforcing them.

2.5 Upgrading, standards and smallholders farms

With the strengthening and diffusion of GVCs and GPNs in last decades, private governance by leading firms has increased its role (UNIDO, 2009). Standards are one of the most effective instruments of governance, especially in the agro-food GVCs. Strong emphasis has been put especially on so-called “high-value agricultural markets”, defined as *“non-bulk agricultural commodities that either require special handling, such as fresh fruits and vegetables, or are processed in one or more post-harvest stages, such as specialty coffee and honey, prior to reaching the end market”* (Fernandez-Stark et al. 2012). Standards have been one of the most significant tools for the private governance of evolving horticulture GVC dynamics, creating the rules for participation and upgrading.

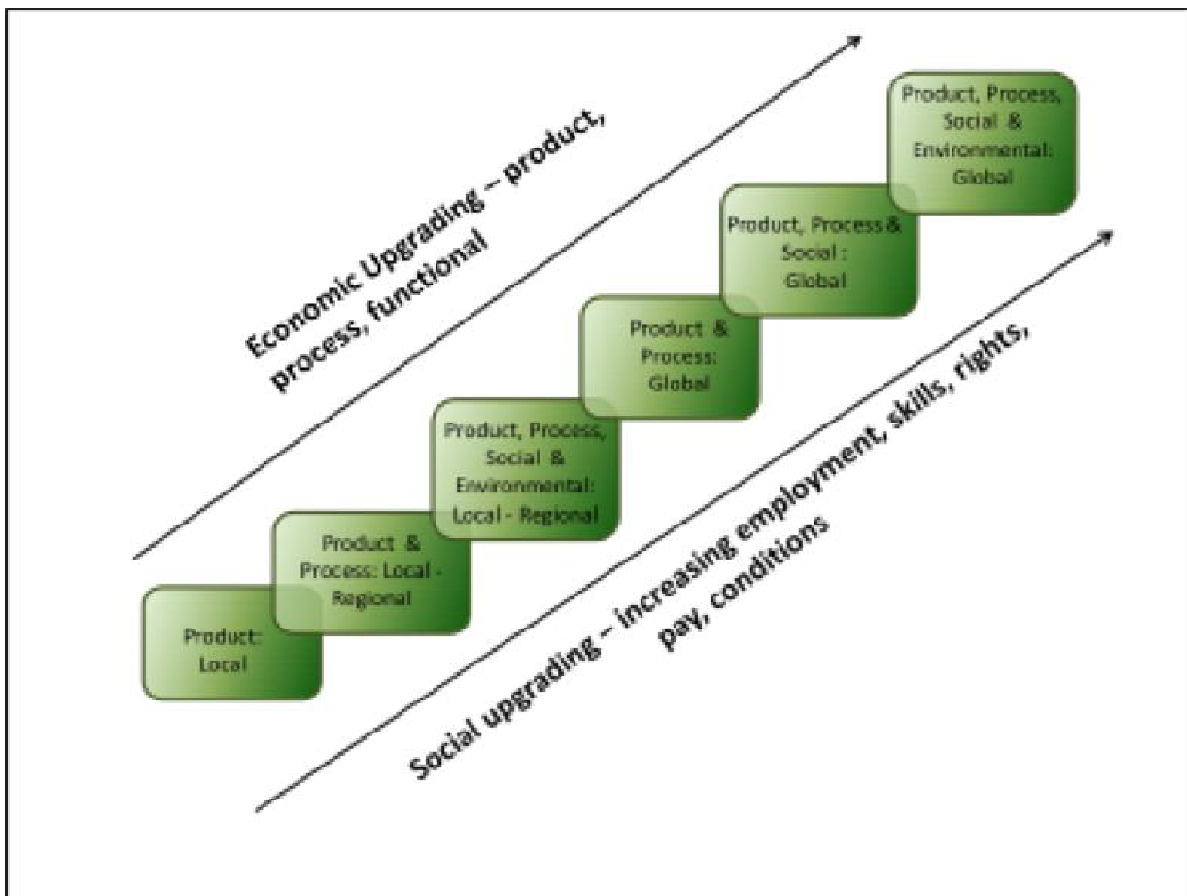
The rise of European supermarket GVCs, led leading supermarkets to govern their supply chains with standards based on Western consumer preferences, such as quality, hygiene, safety, and traceability (Fernandez-Stark, Bamber, and Gereffi 2011). Adherence to supermarket horticulture standards is often a double-edged sword.¹³ On the one hand, it offers substantial opportunity for producer upgrading into higher value added activities (examples of product, process, cold chain, and functional upgrading can be found in Kenyan FFV chains), and in some cases, social upgrading for workers through increased social protections (examples of more permanent employment contracts, unionization and collective bargaining can be found in Ugandan floral cuttings chains). On the other hand, it limits participation to only those producers with the necessary investments needed for compliance.

¹³ For summary of debate, see Jaffee and Masakure 2005.

But in general standards have largely excluded smallholder GVC participation given they are complex and costly, particularly where smallholders are unorganized (Bamber and Fernandez-Stark 2013; Evers et al. 2014; Fernandez-Stark, Bamber, and Gereffi 2011). However, research indicated that smallholders were accessing regional supermarket chains, either directly where organized through producers' associations or cooperatives and often indirectly through larger preferred suppliers.

Firms within the global South apply often lower standards requirements than their global counterparts. The process of moving from lower standards to higher ones occurs gradually from small-scale improvements in local/domestic value chains to larger ones in regional value-chains (RVCs) and global value-chains. Therefore, the expansion of RVCs may be seen as an opportunity for small producers to gain access to global chains in the long run by taking incremental upgrading steps as they move from local to more global participation (Goger et al 2014).

Fig. xx Climbing the VC ladder (p.5)



Source: Barrientos, 2012 in Goger et al. 2014: p. 5.

Reporting on Africa horticulture, Gorger et al. (2014: pp.7-14) stress that Africa's growth in horticulture exports was mainly caused by the global growth in large retail supermarkets, particularly large European supermarkets. Since the early 1990s European-led supermarket GVCs have generated significant global demand for high value horticulture products, and have opened new opportunities for many African farmers to participate. Historically, most African participation in European supermarket GVCs has been restricted to large/estate farmers, providing far fewer opportunities for African smallholders. Concentration amongst European supermarket buyers has long put them in a powerful commercial position when negotiating prices and quality standards with suppliers, who have long complained of adverse European supermarket pressures (Barrientos and Visser 2013). Developments in recent years, however, created important shifts in the destination markets for African horticulture products: in many instances away from EU and UK supermarkets, towards supermarkets in Asia, Middle East and other African countries (mostly within SSA). The 'third wave of supermarket expansion' has been identified in Africa in recent years, following the previous first and second waves in Asia and Latin America (Deloitte 2011; Reardon et al. 2003; Weatherspoon and Reardon 2003).

The expansion of supermarkets across Africa is prompting the growth of regional supermarket value chains, generating new opportunities for value chain integration and upgrading (Barrientos and Visser 2012; Cattaneo 2013; Evers et al. 2014).

Based on a review of five case study in Latin America, Fernandez-Stark et al. identify two main conditions that may encourage small holder farmers to successfully participate in the value chains:

- A comparative advantage due to the fact that they are usually labour-intensive productions
- An existing strong and stable (or at least widening) market, since small holder farmers could not be able to face the uncertainty naturally linked with new markets.

Finally, investing in smallholder agriculture is widely and increasingly acknowledged as an important factor for improving the livelihood of the poor in the global South, with some positive implication also with respect to specific dimensions of wellbeing (food security,

biodiversity conservation or environmental degradation) (HLPE, 2011). FAO's High Level Panel of Experts' (HLPE) report recognizes that access to global market plays an important role in improving living condition, but at regional and national level suggests focusing on proximity markets and the establishment of direct links between producers and consumers.

Moving to a higher level, it is important to investigate the intersection of 'access to market' and the increasing relevance of value chains. There are two main points arising:

- 1) The gap in economic and political power existing between traditional "weak" players (smallholder farmers) and contracting organizations
- 2) The insertion of producers (and their organizations) in a typology of value chain which is typically (and increasingly) *buyer-driven*

CHAPTER 3

FROM THE QUINOA BOOM TO THE QUINOA PARADOX

3.1 The relevance of neglected species for food security and the wellbeing of farmers

“Neglected and Underutilized species” (NUS) are defined by Padulosi et al. (2008) as *“mainly local and traditional crops (with their ecotypes and landraces), or wild species whose distribution, biology, cultivation and uses are poor documented”*. They have been recently discovered and become object of attention and studies (BIBLIO).

Since the beginning of the last century and especially after WWII, a strong reduction in genetic diversity was experienced, due to many factors, among which the so-called ‘green revolution’ and the demand for uniformity fostered by the increasing of trade flows in the agricultural sector (including a trade-based approach to food security (HLPE, 2011)). Nowadays just three species (rice, maize and wheat) account for almost 60% of all the calories obtained from plants used for human consumptions (Fonte dell’informazione).

The interest on NUS – stressed also by the Convention on Biological Diversity (1992) and the Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources and Agriculture (FAO, 1996) – concerns a plurality of dimensions (economic, social, environmental) and more specifically (Giuliani, 2012):

- fight to food insecurity and malnutrition, particularly in areas and times when access (both physic or economic) to other food resources is hard;
- mitigation of environmental stress, since these species often grow in environmentally marginal areas, where large-scale intensive productions could hardly be carried out. Moreover, NUS demonstrate strong adaptation to climate change;
- income support: NUS are not only an important “food of last resort”, but also an economic opportunity for farmers, if the demand for these crops increases in domestic and export markets;
- conservation and valorization of biodiversity...

With respect to the last dimension, conservation of biodiversity, NUS allows to move from an *ex situ* to an *in situ* strategy, valorizing the involvement of smallholder farmers who initially were the breeders and for centuries have been the custodian of such crops.

NUS are typically labor intensive crops, utilized for self-consumption and exchanged only in local markets. So, promoting the use of neglected crops brings about both the emergence of new markets and a change in the livelihoods conditions of traditional producers. Furthermore, since NUS are usually part of the traditional diets of indigenous people, their valorization has strong implications for the cultural value of food production and consumption in local communities.

Andean grains are among the most studied varieties within the larger group of NUS. We are speaking essentially of four grains: quinoa, cañahua, tarwi and amaranth. Historically, they have been one of the main source of nutrition for Andean peoples, especially in rural areas, thanks to their rich content of micronutrients. Their production and local marketing have also been a pillar of the social and economic organization of local communities in the Andean region (Carrasco and Soto, 2010).

3.2 Quinoa

Quinoa (*Chenopodium quinoa* Wild.), belonging to the group of Andean grains, was originally domesticated around the basin of Lake Titicaca, at ≥ 3.500 masl. In its evolutionary process, it developed strong adaptability to different environmental conditions, so that it is now classified in five different ecotypes (Tapia, 2000) :

- Coastal quinoas (Cile)
- Inter-Andean valleys quinoas (growing from 2.500 to 3.500 masl)
- Altopiano quinoas, (growing in Northern Altopiano in Bolivia and Peru)
- Salare quinoas, also known as Real Quinoa, in the Southern Altopiano of Bolivia between Uyuni and Coipasa Salars
- Yunga quinoas, in subtropical zones of Bolivia.

Thanks to this adaptability, quinoa has been one of the main crops in the diet of pre-hispanic people. After the Spanish domination and the diffusion of European food habits, though, quinoa consumption experienced a decline, especially in the diets of people in

urban settings, so that it was marginalized and negatively connoted as ‘food of the poor’ or ‘food of the indigenous’,

Quinoa’s renaissance starts in the early 1980s, when its high nutritional values are acknowledged at international level (Rojas et al. 2010). In comparison to rice, wheat and maize, quinoa is richer on proteins, fats and fibers and contains all four essential amino acids (Tab. XX). For these reasons, it is an important resource in the food security strategies of the Andean regions. Its worldwide promotion culminated in 2013, that, under Bolivia’s proposal, was declared by FAO and the United Nations ‘International Year of the Quinoa’.

Tab. XX

		Quinoa	Corn (White)	Rice (white)	Wheat (Hard Red Winter)
Minerals					
Calcium, Ca	mg	47	7	11	29
Iron, Fe	mg	4.57	2.71	1.60	3.19
Magnesium, Mg	mg	197	127	23	126
Phosphorus, P	mg	457	210	71	288
Potassium, K	mg	563	287	77	363
Sodium, Na	mg	5.00	35.00	7.00	2.00
Zinc, Zn	mg	3.10	2.21	1.20	2.65
Vitamins					
Thiamin	mg	0.36	0.39	0.18	0.39
Riboflavin	mg	0.32	0.20	0.06	0.11
Niacin	mg	1.52	3.63	2.15	4.38
Vitamin B-6	mg	0.49	0.62	0.11	0.37
Folate, DFE	µg	184.0	0.00	7.0	38.0
Vitamin A, IU	IU	14.0	0.0	0.0	9.0
Vitamin E (alpha-tocopherol)	mg	2.4	0.0	0.0	1.0
Fatty acids, monounsaturated		1.6	1.3	0.2	0.2
Protein	g	14.1	9.4	6.8	11.3
Fiber, total dietary	g	7.0	7.3	2.8	12.2

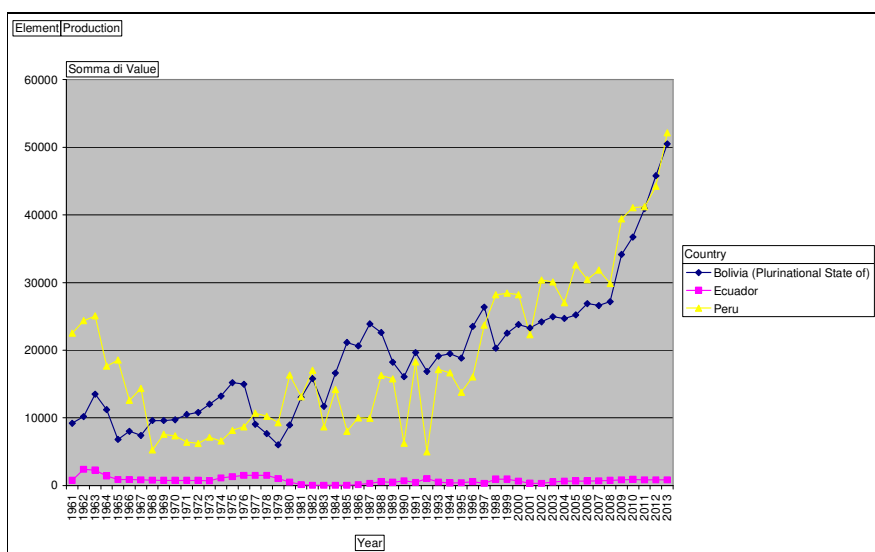
Source: National Nutrient Database for Standard Reference, USDA

Source: National Nutrient Database for Standard Reference, USDA; in FAO,2012

Additional characteristics make quinoa a product in high demand by European and North-American consumers. For instance, being rich in proteins it is well indicated in vegetarian diets; it is also gluten-free, so it is indicated for the diet of coeliac people. Since the 1980s, then, an export market for quinoa was born and boomed, with huge effects on the dynamics of production and prices.

In 2012 total world production of quinoa amounted to nearly 100,000 metric tons. Nearly 95% of it came from just two countries, Peru and Bolivia. Until the first 1990's these two countries' global production - though with many fluctuations - was between 10,000 and 20,000 metric tons. After that time, in both countries production begun to experience an increasing trend, which is still ongoing.

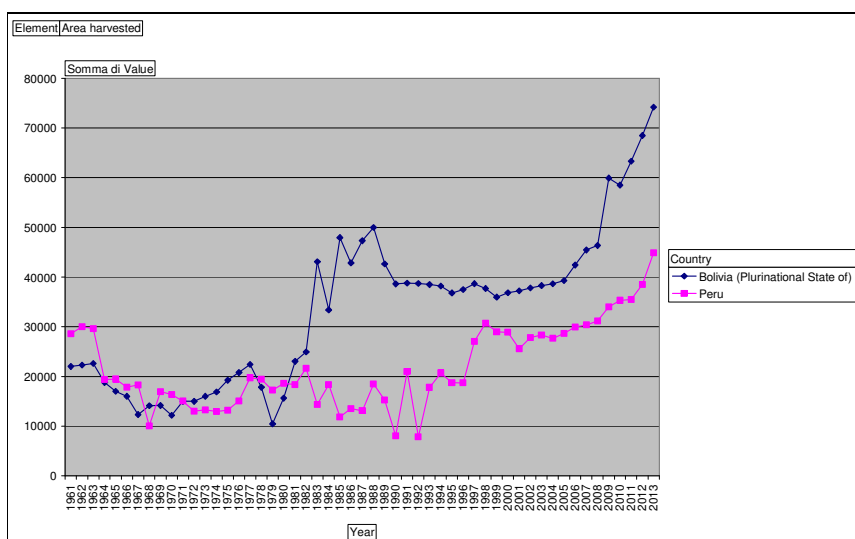
TAB. X – Quinoa production in Bolivia, Peru and Ecuador 1961-2013 (metric tons)



Source: FAOSTAT, 2012

The increase in production was not a consequence of an increase in yield, which on the contrary remained stable. It is rather the consequence of an expansion of cultivated areas, as it is evident in tab.XX:

TAB. X – Area harvested for quinoa (Ha) in Bolivia e Peru, 1961-2013



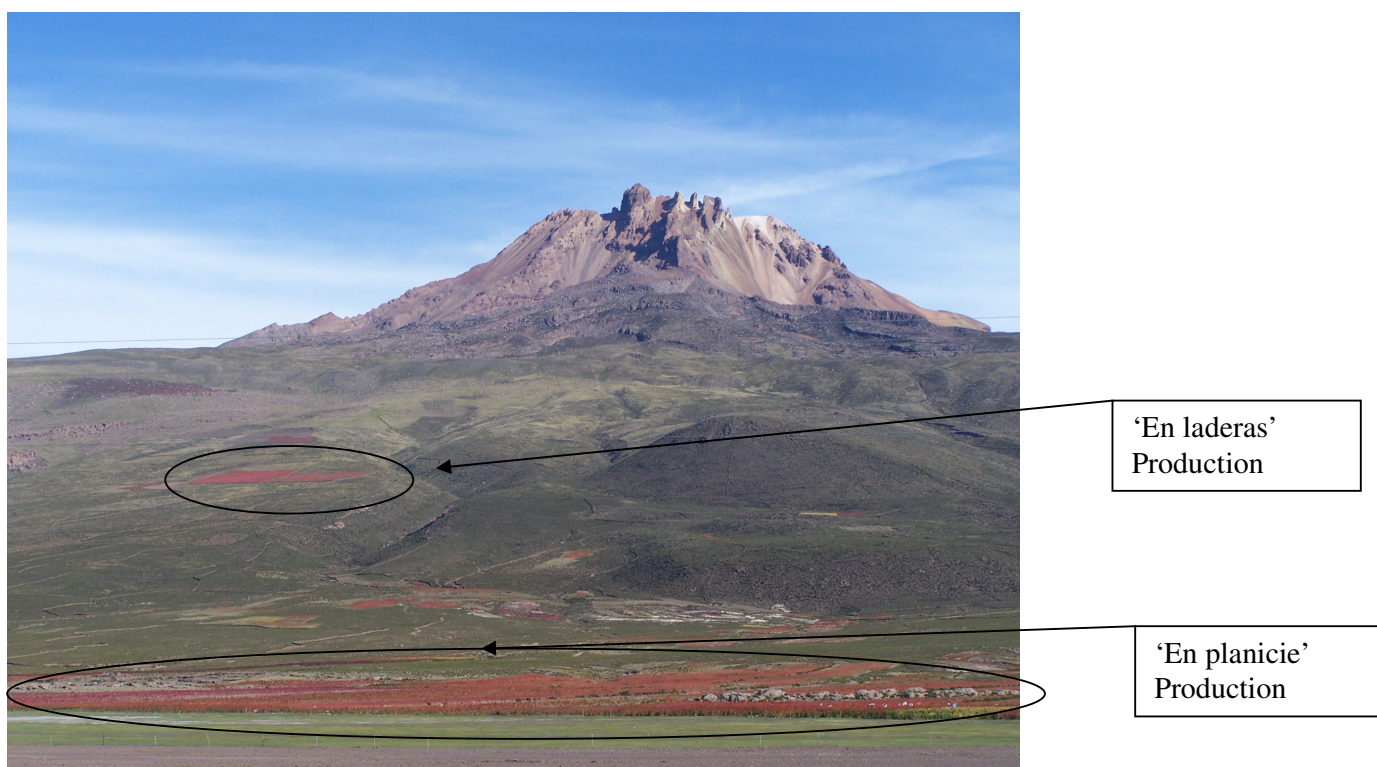
Source: FAOSTAT, 2012

In Bolivia, the first notable increase in cultivated areas was realized between the end of the 1970s and the middle of 1980s, when agriculture, especially in the Southern Altopiano, was mechanized, thanks to the introduction and diffusion of tractors. Production moved from the hills (*laderas*) to the plain (*planicie*), while mechanization allowed a significant saving of labor, particularly at sowing and harvest times (see picture XX).

This move was though accompanied by the insurgence of new risks, as rodent and parasitic attacks, whose management has become an important and still unresolved issue in the quinoa production. Risks that were, instead, nearly absents in the “en laderas” agriculture of the previous period.

After the 1980s, cultivated areas remained stable, but periods of land rotation shortened. The result was stressed soils and reduced fertility, which jointly with a continuous increase in quinoas’ demand led to further expansion of the agricultural frontier towards more marginal areas, less suited to quinoa production and traditionally devoted to other activities as lama breeding. A short-circuit between production’s increase and environmental degradation was produced.

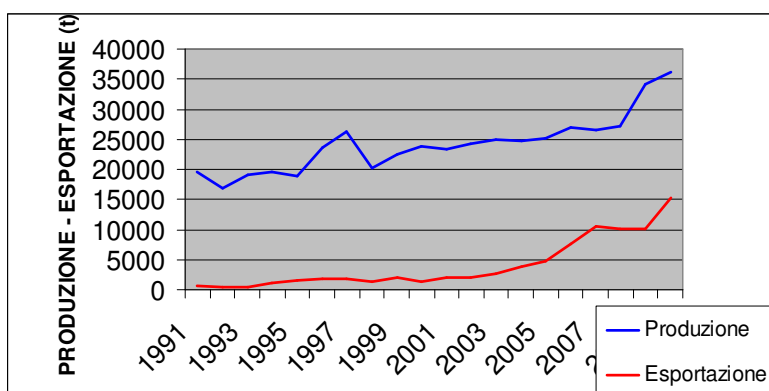
Picture X - TITLE



Source: Author's Picture

Since early 2000, increase in production is strictly linked to rise of foreign demand. In Bolivia, nowadays first in world exports, quinoa exports were close to null until 1999. After just one decade they amounted to nearly 45% of national production (tab. XX).

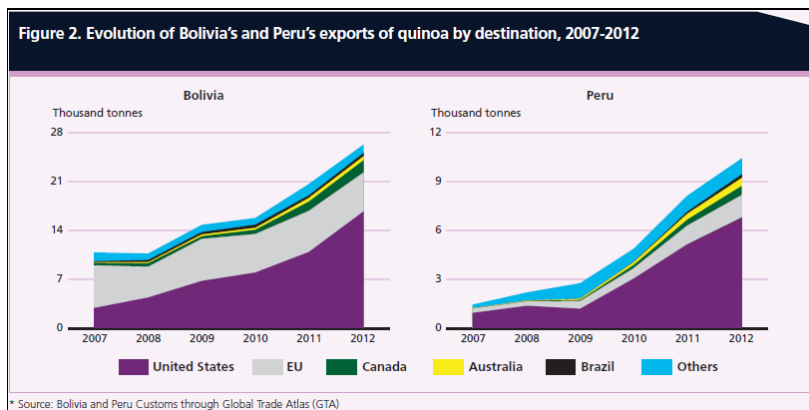
TAB. X – Quinoa production and export in Bolivia, 1991-2010



Source: FAOSTAT 2012

Both for Bolivia and Peru, main export markets were US and EU where, as we told in the previous paragraph, quinoa satisfied the demand of niche but growing markets – gluten free and vegetal proteins, but also the demand for certified organic products. In the most recent years quinoa exports are also direct toward Asian and other Latin-American countries.

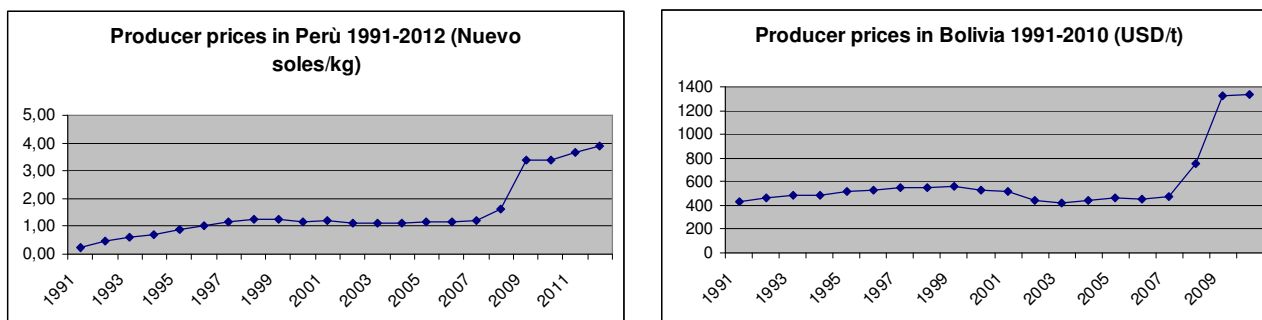
TAB. X - TITOLO



Source: FAO, 2012

The joint effect of all these changes, and especially the emergence of an export market, brought about a huge rise in prices, which at the beginning benefited only exporting firms, but later on - approximately since 1997- also farmers. Prices at farm gates increased from 435 USD/ton in 1991 to 1332 in 2010. The increasing trend is still continuing. Prices increase is the most important effect of the so-called “quinoa boom”. It is also generating major debates about its possible distributional implications as well as the social and environmental consequences, as we will see in the next paragraphs.

TAB. X – Producer prices in Bolivia and Peru, 1991-2012



Source: Ministry of Agriculture of Perú 2014, FAOSTAT, 2012.

3.3 From the quinoa boom to the quinoa paradox.

In the last 10 years, the commercial diffusion of quinoa contributed to the diffusion of knowledge about the nutritional, cultural, social and environmental values of this crop. In parallel, though, especially since 2010, a huge debate raised about the potential adverse effects of this boom. In 2011-2012 this debate reached also some of the most popular newspapers, which reported, sometimes dramatizing and oversimplifying, the terms of the question, with alarming and at times contrasting titles as:

TABLE XX - TITLE

The New York Times (March, 19 th 2011)	Quinoa's Global Success Creates Quandary at Home by Simon Romero & Sara Shahriari
The Guardian (January, 16 th , 2013)	Can vegan stomach the unpalatable truth about quinoa? by Joanna Blythman
The Guardian (January, 14 th , 2013)	Quinoa brings riches to the Andes by Dan Collins
The Guardian (January, 25 th 2013)	Quinoa: good, evil or just really complicated? by Tom Philpott
The Globe and Mail (January, 16 th 2013)	The more you love quinoa, the more you hurt Peruvians and Bolivians by Amy Verner
The Globe and Mail January, 19 th 2013	Killer quinoa? Time to debunk these urban food myths by Doug Saunders

Critiques point particularly to the possible trade-offs between export and domestic consumption on one side, economic opportunities and environmental sustainability, on the other side. We will look at these topics in the next two sections.

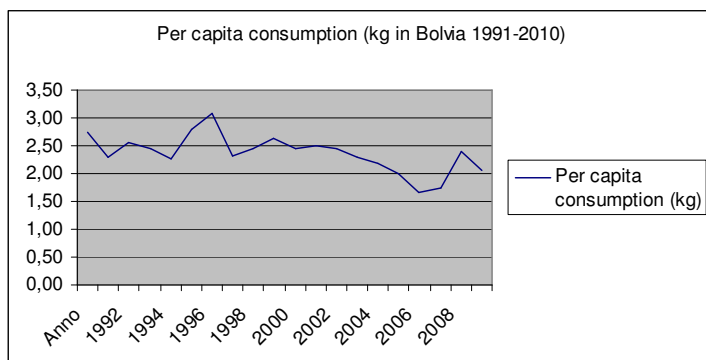
3.3.1 Quinoa domestic consumption and food security

According to some authors, while farmers can benefit from higher incomes deriving from quinoa exports, high prices discourage the development of domestic market, particularly in towns and urban areas. Medrano and Torrico (2009) argue that also in the production sites

farmers, who usually self-consumed the quinoa, are encouraged to sell a larger share of their production and replace it in their diets with cheaper but less nutritional food. Besides the effect of raising prices, it is important to remember that the cultural stigma of quinoa as “food of the poor” was preventing its diffusion especially in urban consumption models. In fact domestic market was underdeveloped and transactions worked essentially in informal and local markets.

Data on domestic consumption in Bolivia and Peru are neither sufficient nor reliable. Nonetheless if we assume that an estimate of domestic consumption may be calculated as the difference between total production minus exports, data show a light decline, but not a fall, in per-capita quinoa domestic consumption (Tab. XX). Even so, that equation - *Domestic consumption = Production – Export* - does not take into account an important quota of quinoa that is informally exported out of Bolivia, as we will see in next chapter.

TAB. X - TITLE



Source: FAOSTAT

Actually data provided by the Ministry of Rural Development, report of an increase in per-capita domestic consumption from 0,35 kg/year in 2008 to 1,1 kg/year in 2012 (IBCE, 2013). Furthermore, considering the food consumption of farmers producing quinoa, the higher income deriving from quinoa may allow access to a more diversified diet, balancing the negative effect of a decrease on quinoa consumption.

Finally, we want to stress that the effect on food security strategies is key when looking at the NUS multiple dimensions highlighted above. The more so in Bolivia, where food security is still at risk, as it is evident from FAO official data (tab. XX).

FOOD SECURITY INDICATORS FOR BOLIVIA

DETERMINANTS (INPUTS)

	Bolivia	Latin America	Developing Countries	World	Year
AVAILABILITY					
Average Dietary Supply Adequacy	101,00	126,00	117,00	121,00	2011
Average Value of Food Production	299,00	469,00	254,00	298,00	2009
Share of energy supply derived from cereals, roots and tubers	53,00	40,00	56,00	51,00	2008
Average protein supply	60,00	83,00	72,00	78,00	2008
Average supply of protein of animal origin	26,00	41,00	24,00	31,00	2008
ECONOMIC ACCESS					
Domestic Food Price Level Index	1,30	1,37	1,75	1,44	2012
UTILIZATION					
Access to improved water sources	88,00	95,00	86,00	88,00	2010
Access to improved sanitation facilities	27,00	81,00	56,00	63,00	2010
OUTCOMES					
INADEQUATE ACCESS TO FOOD					
Prevalence of undernourishment	24,10	7,70	14,90	12,50	2011
Share of food expenditure of the poor	54,00				2003
Depth of the food deficit	161,00	53,00	103,00	87,00	2011
Prevalence of food inadequacy	24,10	10,40	18,60	15,60	2011
UTILIZATION					
Percentage of children under 5 years of age who are stunted	27,20				2008
Percentage of children under 5 years of age affected by wasting	1,40				2008
Percentage of children under 5 years of age who are underweight	4,50				2008
Percent of adults who are underweight					
VULNERABILITY/STABILITY					
Domestic food price volatility	70,20	32,30	31,90	17,30	2012
Per Capita food production variability	4,10	9,80	2,10	1,90	2010
Per Capita food supply variability	13,00	7,00	9,00	9,00	2010
Value of food imports over total merchandise exports	7,00	6,00	5,00	5,00	2008
Percent of arable land equipped for irrigation	4,70	13,30	30,30	22,50	2008
Cereal import dependency ratio	24,20	28,00	15,50	15,70	2008

Fonte: FAOSTAT, 2012

3.3.2 Environmental and cultural impact of quinoa boom

Taking into account the environmental consequences of the quinoa boom, it is important to stress the differences in production practices of different areas. In Central and Northern Altopiano, the quinoa is cultivated in small parcels and in association with other crops, mainly potatoes, barley and fava beans. That makes difficult the conversion to organic methods.

Totally different is the situation in the Southern Altpiano, home of Real Quinoa, the world most demanded variety, because of its bigger grain size. The Southern Altopiano, a unique and at the same time one of the world most fragile eco-system, presents extreme environmental conditions: quinoa is cultivated at high altitudes - between 3,500 and 4,500 mals -; temperature may reach -20° Celsius in winter; the salt desert determines high soil salinity and precipitations are low.

In this context the expansion of quinoa production brought about many negative effects (Jacobsen, 2011): intensification of production process and shortening of crops rotation or soil rest periods; expansion of agricultural frontier to the detriment of pastoral activity; diffusion of tractors without sufficient training, reduction in diversity of varieties cultivated, etc.

Land parcels are larger than in others area of Bolivia (6 ha for family on average) and this led to social problems and land conflicts among farmers fighting to get more and better land. Furthermore, since quinoa rapidly was transformed from a crop produced and consumed only locally into a worldwide well-known crop, cultural impact was great.

Given the speed of all these transformations and the high specificity of the quinoa case (especially the Real Quinoa in Southern Altopiano case), to assess the differential impact of quinoa market success on the different actors of the value chain, it is fundamental to take into account:

- 1) market expansion;
- 2) changes occurring along the supply chain, especially access of new actors and changes in the relationships among old and new players;

- 3) the distribution of benefits among value chain's actors, especially smallholder farmers;
- 4) new potential risks.

Finally, the quinoa case may be considered a good example of opportunities and risks facing smallholder farmers in the process of valorization of a local resource - in this case a local crop - both in local and global markets. Using concepts and tools derived from GVC analysis, in the next chapters we will describe the transformation and the evolution of the quinoa supply chain in the Salar area, with emphasis on change of the governance structure (Chapter 4). In chapter 5 we will focus our analysis on the processes of economic and social upgrading (and sometimes downgrading) occurred, from the specific perspective of smallholder farmers and taking into account economic, social and environmental consequences of the quinoa boom.

But before getting into the quinoa value chain analysis, I will introduce the Salar region, that is the site of the fieldwork for this case study.

3.4 Quinoa production in the Salar between tradition and new markets: a review

Increase in quinoa production in the late 1980s, as it was reported in chapter three, was initially linked to a mechanization of production through the introduction of tractors. Anyway, the real renaissance of quinoa would have not been possible without a social innovation, represented by the birth of producers' associations.

Laguna (2000) notices that in general these organizations represent an exogenous institution with respect of the culture of Andean peoples. In Southern Altopiano agricultural activities, and social life, were traditionally organized and based on communitarian institutions. But, traditional institutions such as the *Ayllu* - a politic-ritual organization managing the access and the use of lands belonging to a set of bordering villages - or the *Alcalde de campo* were gradually disappearing. The same introduction of organic certification, especially in the form of compliance at certification schemes, responded to

objectives irrelevant and not always clear to farmers¹⁴, at times when the increasing demand was accompanied by the introduction of chemical pesticides.

Laguna, Cáceres and Carimentrand (2006) adopt the Convention Theory's categories to identify three steps in the evolution of quinoa market:

- 1) along the 80's a coordination mechanism based on a compromise between civic and domestic values is working. Quinoa market is still low dimensioned and essentially controlled by between two producers organizations (CECAOT and ANAPQUI), that establish initial commercial relationships with fair trade organizations in US and EU. The quality attributes more emphasized in this step are social and cultural values associated to quinoa production. Marketing in Bolivia and abroad is seen first of all as a tool to guarantee better opportunities for Andean farmers.
- 2) During the 90's quinoa production moved towards organic practices. In a short time organic quinoa becomes the only one commercialized in western markets. This shift is led by the introduction of standard and certification schemes provided by the same buyers.¹⁵ Producers organizations work as intermediate agents to train farmers to the new production practices. Later on new organizations, like AOPEB (Asociación de organizaciones de productores Ecológicos de Bolivia) and BOLICERT emerge, organizing the export market of organic products, especially cocoa. Organic production still makes reference to the civic values – respect for the environment -, but the adoption of certification standards recall values linked to the industrial world
- 3) Finally, in the 2000s, demand rises faster than production, causing scarcity on the supply side and a dramatic increase of prices at farm level. Organic production is no longer a choice for farmers, but a commitment to stay into the market. On the other hand - since the appearance of the first cases of contamination with not allowed inputs - for the agroindustry is essential to guarantee the respect of organic standards and more widely to guarantee quinoa as 'safe and healthy food'. This step is labeled by Laguna et al. (2006) as a compromise between market and scientific conventions.

¹⁴ A good example comes from the enforcement of traceability at individual level, preventing farmers from storing together their quinoa as always happened in the past.

¹⁵ It means that certification must comply to the rules for organic agriculture working in EU and US

Obviously the move from one stage to another is not linear, and different coordination mechanisms may coexist and different value chains partially overlap. Càceres, Carimentrand and Wilkinson (2007) analyze the distributive implications of different value chains, all linked to different fair trade channels. A first chain is linked to Alternative Trade Organizations in European countries and works in tight relationships with farmers association., The other two follows the fair trade certification scheme enforced by FLO and are mainly addressed towards larger buyers, especially supermarkets, in Europe. Authors notice small difference in the percentage of added value gained by farmers, but they highlight how on the margins of these experiences new pilot projects start, inspired by the paradigms of food sovereignty and agroecology and calling for a renewed effort to re-center the value chain around farmers conditions.

Ofstehage (2012) compare different strategies adopted by farmers when they trade their quinoa. Some initiatives led by fair trade or producers associations explicitly state their objective in terms of both, economic opportunities and social empowerment. The action of intermediaries, though, respond to more individual households needs: this is the case when they supply goods, especially fresh fruit and vegetables, that it is not possible to find in Salar's area, in exchange of quinoa or for money... This middlemen¹⁶ function is strictly linked to their personal reputation, as well as to their family or friendly relationships within the villages. Otherwise, intermediaries are perceived as *coyotes* exploiting farmers. In the search of equilibrium between immediate needs and economic emancipation, farmers also test new models, such as the construction of a denomination of origin in the area of Lipez, in an attempt to differentiate their product.

Félix and Villca (2009), in a research for the French NGO *Agronomes et Vétérinaires sans Frontières*, move from the evidence of the environmental sustainability, the more critic issue of the quinoa boom, , to evaluate how a participative model of construction of community norms can help farmers to adopt more ecological appropriated production systems. Authors argue, though, that community norms, and especially traditional institutions, are thoroughly tied to a specific social asset, which is undermined by the 'modern' production system, characterized by the joint effect of mechanization, individualization and pressure from the demand side. So, it is essential to take into account social, cultural and environmental considerations. Further, social and technical innovation

¹⁶ Often they are middlewomen, as in the case of Ofstehage's paper

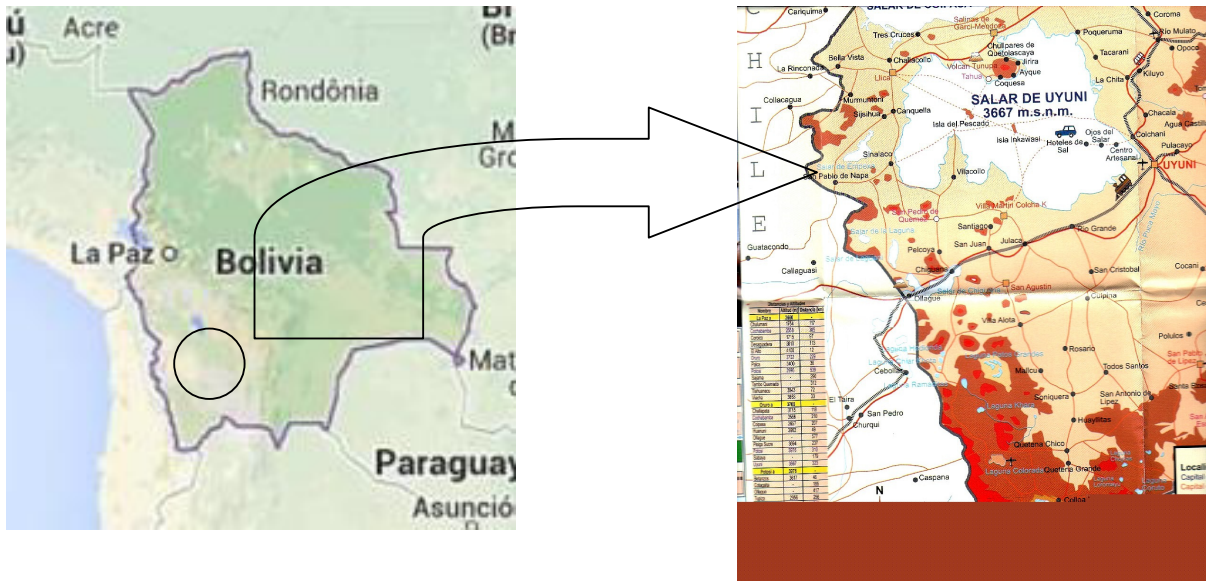
should join the sustainable use of natural resources with the new emerging economic opportunities.

Fundación PROINPA also emphasizes the role of research and innovation in producing appropriate technology for this very specific case. Aroni, Pinto and Rojas (2012) report the high effectiveness of a very simply innovation constituted by small-scale quinoa processing units (*microbeneficiadoras*) to remove saponin¹⁷ from the grains. Traditional quinoa processing activities are highly time-expensive and usually the domain of women. The introduction of a single machine (working with an electric or gasoline motor) in each village included in the project let families to save time, raise the quantity of quinoa processed and, as a result, dramatically increase their quinoa consumption. Anyway authors observe that benefits have been maximized only when the community was able to organize and coordinate the machine's use among all participants.

¹⁷ Saponin is a very bitter-tasting seeds coating. In Real Quinoa saponin's content is very high and it is necessary to remove it before cooking.

3.5 Case study region and research methodology

The fieldwork that is the basis of this research is focused on the effects of the quinoa boom in a well specific area, the Southern Altopiano of Bolivia.



This choice can be seen as a limit to the results' generalization, but it sprung from an attentive reflection. Some of the reasons behind this choice were already highlighted in the previous section. Summirizing:

- in Southern Altpiano is produced the world most demanded quinoa variety, Real Quinoa;
- the specifity and fragility of the ecosystem in the Inter-Salar Area brings out the importance of environmental effects, jointly with the economic and social ones;
- quinoa is nearly the only crop that can be grown in that area and for sure the only commercial crop in the region, so that the effect of access to market can be entirely attributes to quinoa.

Southern Altopiano is one of the most maginalized region in Bolivia. The physical and human geography of the area is dominated by the presence of the Salt Desert

People live in little communities scattered around the Salt Desert. Infrastructure in general and roads in particular are lacking, so that these communities live in nearly isolation from each other, especially in the rain season, when it is impossible to cross the desert. In the last decades, hard living conditions - lack of electricity, educational opportunity and decent job opportunities – pushed people to migrate toward urban areas and towards the bordering countries of Argentina and Chile. Main economic activities in the area are :

- Agriculture, i.e., essentially quinoa production. Only in few communities families have little parcels devoted to the cultivation of other vegetables (tomatoes, honey and lettuce), with a productions that is sufficient just for short periods of the year. Cultivation of land is family based, but land is community owned. Redistribution may happen when necessary and is done by....(the community council?.
- Pastoral activity, above all lama and sheep herd. The association between lama breeding and quinoa cultivation is particularly important, since lama manure is essential to soil fertility.
- Mining activity, for the extraction of minerals in the past, gas and lithium today. In this region are located the most important lithium reserves currently known in the world.
- Tourism activities, increasing during last 20 years, thanks to the attraction of the Salt Desert.

FIELDWORK

My field-work, supported by RomaTre University and Bioversity International and Fundación PROINPA, a Bolivian scientific institution working in the field of agricultural development, was carried out from December 2012 until April 2013.

Fieldwork was organized in four steps:

- 1) Preliminarily a number of interviews were carried out with key informants, selected among producers and marketing organizations and research institutes. This step has been fundamental in order to draw the market map and identify the main variables to take in consideration in the further steps.
- 2) After some test submission, a survey at familiy level was conducted. Closed questionnaires were submitted to 87 families in 4 different provinces:

Table XX

PROVINCE	No.	%
Ladislao Cabrera	22	25,29
Antonio Quijarro	14	16,09
Daniel Campos	22	25,29
Nor Lipez	29	33,33
Total	87	100,00

Source: Authors' fieldwork

The choice to operate in four different provinces, all situated around the desert area, led to collect few questionnaires for each province, but allowed to highlight differences existing in different social and environmental contexts, as regard to the degree of soil erosion, distance from urban centre, etc..

Time and budget constraints affected tightly the research.

The choice of villages (due to the presence of well established relationships between PROINPA's staff and community leaders; anyway it was possible a good selection considering the most important control variable, being "What is main market channel for your quinoa", since (as we will see in next chapter) this is the key variable for the two types of quinoa value chain working in Southern Altopiano. Distribution of this variable is as follows:

TAB.

Maket outlet for quinoa sold by farmers	FREQUENCY	%
Producers Association	37	42,53
Private firm	14	16,09
Infomal Intermadiate	36	41,37

Source:

3) At the agro-industry level, 6 semi-structured interviews were carried out with:

- Two producer organizations, ANAPQUI and APQUISA. ANAPQUI is probably the most known Bolivian organization and played a fundamental role in the birth of the modern

quinoa value chain, creating the initial conditions for export opportunities. APQUISA, on the contrary, is a young organization whose action is limited to the area of Salinas de Garci Mendoza.

- Three private firms: IRUPANA, QUINOA FOODS, CITY.
- CABOLQUI, a network of 11 private firms, included the three above. CABOLQUI is not a quinoa trader but it acts as a support agency, also representing its members at institutional level.

The five interviewed organizations represent more than 50% of Bolivian exported quinoa in 2012, even more if all other organizations represented by CABOLQUI are included.

4) Finally, I had the opportunity to participate at the workshop organized by CABOLQUI. The workshop was organized for the promotion of the Quinoa's International Year. All Cabolqui's members and some of the main foreign buyers participated and discussed about new opportunities and risks for the quinoa business.

The event took place when I was almost at the end of my fieldwork. So it was very useful for checking some of the results of my research.

As told above, the explosion of the quinoa boom generated also a debate about potential adverse effects of the rise in quinoa consumption in western countries. The popularity of the quinoa debate in some way affected also my work. Echo of the controversies around the quinoa boom reached also Southern Altopiano farmers, who were scared that the debate could affect the world quinoa demand. They were then reluctant to support any research activities on the impact of quinoa growing economy.¹⁸ Sometimes the community leaders denied the permission to interview any member of the village. Same difficulties were sometimes raised also by the managers of private firms, who emphasized a 'cultural bias' in the analysis of quinoa boom's implications.

So, in addition to the usually budget and time constraints, this research was subjected also to a sort of local actors' wariness. Even so, the idea that a deep reflection on the effects of the quinoa's boom is essential for the protection of the environment of Southern Altopiano and farmers' and communities' wellbeing emerges with strength from the case study.

¹⁸ In effect many of the farmers interviewed reported also about high number of researches carried out in the area in recent years

CHAPTER 4

ESTABLISHMENT AND EVOLUTION OF THE QUINOA VALUE CHAIN IN SOUTHERN ALTOPIANO OF BOLIVIA

4.1 Introduction

This chapter will be devoted to the description of the emergence and evolution of a quinoa value chain in the Southern Altopiano of Bolivia.

As highlighted in Chapter Two, the design of a market map is an important tool for the analysis of a value chain, even if a note of caution is necessary, with respect to the dynamic nature of the object of study, taking into account at least two main reasons:

- a value chain is influenced by the external environment:
- all stakeholders in the value chain are strategic players, trying to continuously increase their benefits' share¹⁹.

Actually a value chain can be seen as having a double movement: one directed to increase the global value of an activity or a commodity, i.e. to create value; and the other directed to increase the benefits accruing to each actor in the chain, i.e. to appropriate value.

I will try to highlight the *current* configuration of the market map, taking into account the changes occurred in the last forty years, described in the previous chapter: from self-consumption to the success of quinoa in the global markets and its commercial boom.

The historical description of quinoa success helps in explaining how quality attributes (i.e. *why* quinoa is demanded and *by who*) changed over time. and how quality changes determine a shift in the governance model of the quinoa value chain. The relevance of 'quality conventions' in shaping the governance structure of the chain motivated our choice toward the approach of 'governance as normalizing', proposed by Gibbon and Ponte (2005).

¹⁹ We can here recall the discussion about 'Capturing the gain' developed in chapter Two.

4.2 Evolution of key players involved in quinoa production and trade

All the studies about quinoa in Bolivia underlie specifically how the speed of transformations happened in last 25 years impacted on the behavior of each stakeholder involved and above all in the complexity of the picture.

In a short time players have multiplied and new typologies of organizations appeared; nevertheless, since technical flows changed less significantly, we can so far gather all players in three main categories: farmers, agro-industry, buyers.

In this section, for each one of these groups, I will describe internal movements and the change in relationships with other stages of the chain; at the end, putting together all this evolution, I will try to analyze how the value chain as a whole has been changing over time; my picture confirms a three-step evolution of the chain according the same categories observed by Laguna, Cáceres and Carimentrand (2006), but I will try to highlight particularly the link between prevailing quality conventions affirming at each step and the governance structure driving players behavior.

4.2.1 Farmers

The area of production for Real Quinoa is the one in the around the Uyuni and Coipasa Salares, belonging to the departments of Potosí and Oruro; the area is divided in nine provinces, with people usually living in small villages. Uyuni is the larger town in the region, and it also holds the bigger market twice a week, on Sunday and Thursday.

Department	Province	M	F	Main administrative centers	Number of villages in the area ²⁰
Oruro	Eduardo Avaroa	17.274	15.258	Santuario de Quillacas	44
	Sebastián Pagador	7.987	5.433	Santiago de Huari	20
	Ladislao Cabrera	9.807	8.124	Salinas de Garci Mendoza	109
				Pampa Aullagas	38
SUBTOTAL		35.068	28.815		211
Potosì	Antonio Quijarro	19.496	19.949	Uyuni	49
	Daniel Campos	5.769	5.627	Llica	36
				Tahua	11
	Nor Lìpez	6.717	6.474	San Pedro de Quemes	6

²⁰ Fautapo 2011

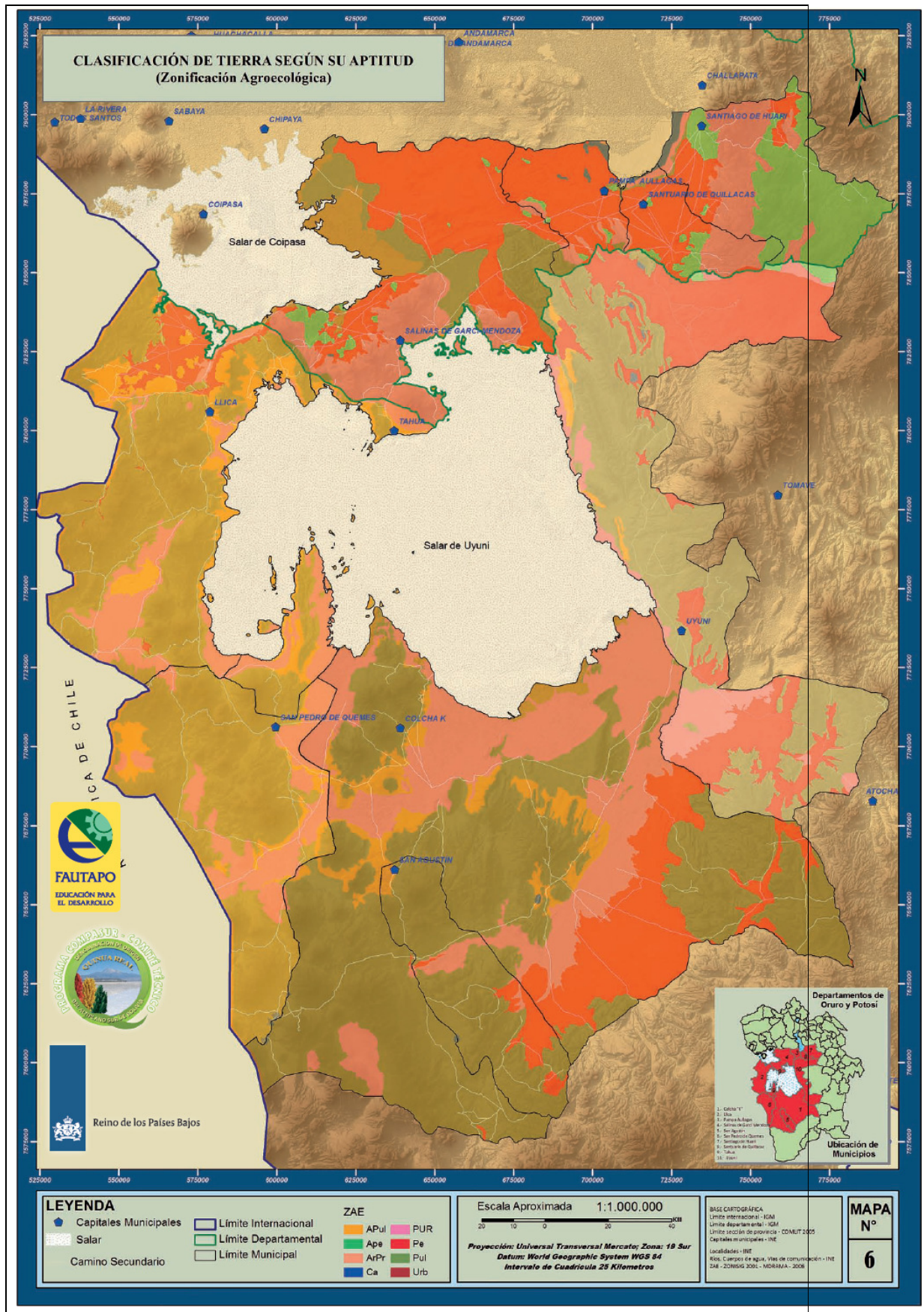
				Colcha "K"	31
	Enrique Baldivieso	1.008	1.054	San Agustín	6
SUBTOTAL		32.990	33.104		139
TOTAL		68.058	61.919		350

Traditional farmers activity are quinoa cultivation and lama breeding, that usually take place in different area (unequally distributed in the region) according to their more or less adaptation to pastoral or agricultural activity.

Clasificación de tierra según su aptitud (Zonificación Agroecológica)

MUNICIPIO		ZAE	AREA (HA)
Municipio de Colcha "K"	APul	Agropecuario de uso limitado	88313,31
	Ca	Cuerpo de Agua	1149,47
	PUR	Pecuario de uso restringido	393315,04
	Pe	Pecuario extensivo	203448,55
	Pul	Pecuario de uso limitado	879893,21
	S	Salar	15893,57
Municipio de Llica	APul	Agropecuario de uso limitado	59731,40
	PUR	Pecuario de uso restringido	77377,21
	Pe	Pecuario extensivo	45168,81
	Pul	Pecuario de uso limitado	365028,35
	S	Salar	14699,03
Municipio de Pampa Aullagas	Ape	Agropecuario extensivo	2991,70
	ArPr	Area Protegida	213,06
	Ca	Cuerpo de Agua	3002,96
	PUR	Pecuario de uso restringido	9801,96
	Pe	Pecuario extensivo	84319,15
	Pul	Pecuario de uso limitado	5492,16
Municipio de Salinas de Garci Mendoza	APul	Agropecuario de uso limitado	2942,78
	Ape	Agropecuario extensivo	14902,58
	Ca	Cuerpo de Agua	119,87
	PUR	Pecuario de uso restringido	111624,01
	Pe	Pecuario extensivo	214959,68
	Pul	Pecuario de uso limitado	101253,97
Municipio de San Agustín	S	Salar	46124,13
	APul	Agropecuario de uso limitado	3741,02
	Ca	Cuerpo de Agua	144,05
	PUR	Pecuario de uso restringido	11933,36
	Pe	Pecuario extensivo	25266,66
	Pul	Pecuario de uso limitado	169487,69
Municipio de San Pedro de Quemes	APul	Agropecuario de uso limitado	26371,14
	Ca	Cuerpo de Agua	996,74
	PUR	Pecuario de uso restringido	91278,95
	Pul	Pecuario de uso limitado	307205,24
Municipio de Santiago de Huari	Ape	Agropecuario extensivo	131016,20
	Ca	Cuerpo de Agua	4312,17
	PUR	Pecuario de uso restringido	71974,93
	Pe	Pecuario extensivo	31531,44
	Pul	Pecuario de uso limitado	1408,84
Municipio de Santuario de Quillacas	Ape	Agropecuario extensivo	13749,71
	Ca	Cuerpo de Agua	809,92
	PUR	Pecuario de uso restringido	24843,23
	Pe	Pecuario extensivo	50954,76
	Pul	Pecuario de uso limitado	1485,09
Municipio de Tahua	APul	Agropecuario de uso limitado	13747,18
	PUR	Pecuario de uso restringido	39331,73
	Pul	Pecuario de uso limitado	47458,23
	S	Salar	8085,22
	APul	Agropecuario de uso limitado	13050,80
	Ape	Agropecuario extensivo	6598,81
	Ca	Cuerpo de Agua	1423,84
	PUR	Pecuario de uso restringido	71796,54
	Pe	Pecuario extensivo	276033,22
	Pul	Pecuario de uso limitado	406855,69
	S	Salar	586,30
	Urb	Urbano	243,04

(Source: FAUTAPO, 2011)



Source: Fautapo. 2011

As we told in the previous chapter, these two activities have always been run from farmers at subsistence level, and their equilibrium (with the later extension to extractive activity and tourism) have also guaranteed the maintenance of the fragile ecosystem in the area.

All activities (quinoa cultivation included) have been and are still family based, whose activity interacts with an articulated framework of traditional institutions: lands are community owned but managed at family level, and each parcel passes from parents to their sons; by this way, land available for each family can vary along the time depending for instance with the size of the family, or migration flows; for this reason, community norms (Félix and Villca, 2009) often consider some land redistributive mechanisms.

At least two traditional norms are directly implied with agricultural activity: first one is *Ayni*: a form of labor sharing, happening especially in the period of sowing and harvest, when all people in the village in turn work on the parcel of other members.

The other one is *mantos* system, that is a collective system of land rotation governed by community authorities; by this way, community can take control of land rest periods, and it is also possible to mark areas for cultivation and for pasture.

Other community duties are de-linked from agricultural activity, it is the case of *Faenas* as is participation at community activities (for instance repairing a school building or other common spaces); on the contrary of *Ayni*, participation at *Faenas* is a duty, and people refusing it can be sanctioned by the community.

As we told previously, a first important change happen with the introduction of tractors; this innovation has a lot of effects on environmental, economic and social sides: cultivation moves from *laderas* to *planicie*, there is a significant labor-save and thus an increase in labor productivity but (as statistical data shown in chapter three also confirm) not an increase in land productivity: this happens because advance of agricultural frontier increasingly involves less adapt areas (production moves from south-western to north-eastern lands,

that were more of pastoral vocation); cultivation in larger scale also facilitate diffusion of insects and parasites, so as rodents attacks; farmers need to buy inputs to manage pest disease, and with the shift to organic production they become more expensive, and there is also an issue of education in running organic agriculture.

Social changes are as much relevant: population, who is traditionally identified just with its community affiliation (as is essentially a birth data), begins to be more segmented, at least by two factors.

First differentiation is between *residentes* and *permanentes*: *residentes* are people who move to live in towns, still keeping their parcels and coming back in the villages just in the periods of sowing and harvest, whilst *permanentes* are people who still live in the community.

Migration is not a news in Southern Altopiano, but usually people leaving from villages breaks all relationship with it, whereas in this case the go on and pursuit land resources to grow and market quinoa (and at the beginning opportunity offered by mechanization increases outbound migration flows).

In 2008, *permanentes* amount more than half of farmers population, especially in Southern Altopiano (the area where quinoa production is increasing faster) also thanks to the main spread of tractors:

Table XX: Number of families growing quinoa and tractors in Southern Altopiano

		Number of families (2008) ²¹			Number of tractors ²²
Department	Province	Permanentes	Residentes	Totale	
Oruro	Eduardo Avaroa	620	965	1585	51
	Sebastián Pagador	374	2203	2577	43
	Ladislao Cabrera	1194	1604	2798	300
		244	478	722	23
SUBTOTAL		2432	5250	7682	417
Potosì	Antonio Quijarro	1193	777	1970	85
	Daniel Campos	629	508	1137	36
		228	392	620	10
	Nor Lìpez	98	96	194	6
		1439	919	2358	44
	Enrique Baldivieso	254	181	435	4
SUBTOTAL		3841	2873	6714	185
TOTAL		6273	8123	14396	602

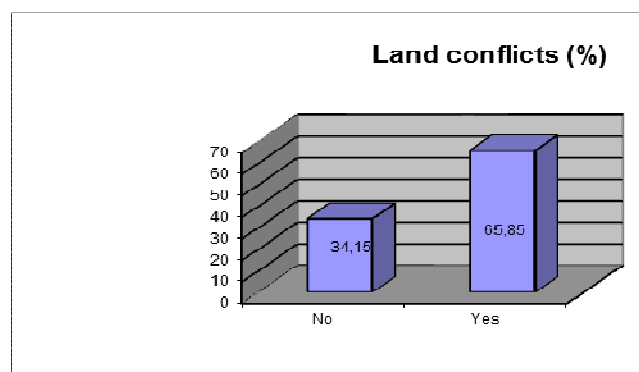
Source: Fautapo (2009, 2011)

²¹ Fautapo, 2009

²² Fautapo, 2011

Initially this differentiation doesn't make problems: to have men/women of their village in a larger town is perceived (and actually works) as an useful contact point by all members of community when they need to go to the town (for instance for healthy reasons, for higher education, etc.); quinoa production is increasing but there is still a lot of land available, so nobody complains if quinoa's business is run by "out of community" people. By the passage of time, things are changing: as quinoa's demand rises, land (especially 'good land') becomes a scarce resource: *permanentes* (living away from villages for the main time of the year) can not comply with community duties as *faenas* nor they can breed lamas; they do not suffer directly some environmental consequence of land degradation as soil erosion, so they are accused of putting few attention in their production process. With the reverses of migration flows conflicts for land (inter and intra-communities) become more and more frequent, and their solution passes through mediation and reinforcement of community institutions: in this framework, in some village specific norms are elaborated to prevent *permanentes* using land and cultivating quinoa.

Fig XX: experience of conflict for land in recent years



Source: Author's survey

If your community experienced conflicts for land, how did you solve it ?	Freq.	%
By the intervention of community institution	11	24,44
Informal way	13	28,89

Land redistribution	5	11,11
Limiting <i>residentes</i> rights	4	8,89
Marking borders	3	6,67
They are still ongoing	9	20
Total	45	

Source: author's survey

The other factor discriminating farmers is according to the supply chain they decide to participate; we will see in next section chances happened in the second stage of the quinoa value chain, but by now we have to say that there are farmers associated in producers organizations, farmers who decide to participate formally at a supply chain of a private firm and independent farmers; each of this choices has got some consequences for farmers, in terms of price, quinoa quality and varieties demanded, services (like training or inputs procurement or financial services) offered. The news is that it is a typically individual choice, so it contributes to generate rules other than community norms in agricultural activity.

4.2.2) AGROINDUSTRY

If the move from traditional to mechanized agriculture has been the main technical innovation for quinoa's renaissance, there is a social change as important to take in account, and it is the process of farmers aggregation through peasant organizations.

The first organization established was CECAOT (Central de Cooperativas Agropecuarias Operación Tierra" in 1975 (Cáceres and Carimentrand, and Wilkinson, 2007), a federation of community-based cooperatives in the area of Nor Lipez, followed in 1983 by the birth of ANAPQUI (Asociación Nacional Productores de Quinoa).

These organizations play a double role: on one hand, they offer technical services to their members (especially training and financial services), the other is the research of market opportunities per one crop by now used just for

self-consumption. For both these scopes, it is essential in this stage cooperation with European NGO, and among these a key role is offered by Alternative Trade Organizations gathered under the umbrella of EFTA²³ and particularly by the German GEPA²⁴

This is the situation for first export sales (in 1983 in US and in 1989 in Europe) but also for the beginning of a cultural revival: first quinoa festival and fairs are organized in Southern Altopiano and all around Bolivia, and for the first time quinoa is perceived also as an economic opportunity for farmers to enhance their conditions; it is the “incas food” which is acknowledged out of its traditional borders.

Along the 90's situation starts to change: there is the entrance of new players, that it is private firms (sometimes created from former leaders of farmers organizations, where a strict rule of rotation in the board works) entering in the market. Initially they work in a similar way to producers associations: they have their own supply chain (“*Red de proveedores*”) buying quinoa directly from the same farmers over time, and their activity in the agroindustry process is similar too: this stage is very simple, limiting at storing, cleaning, desaponification and quality control, since quinoa is still exported as gross grain without significant added value.

These organizations (both producers associations and private firms) also play a key role in the move to organic production, offering technical assistance to farmers for their certification duties, and providing the new inputs needed (especially bio-insecticides allowed in organic certification schemes. Quinoa is now seen not only as an opportunity for farmers, but also (and increasingly) as a high-value nutritional and healthy food, so in a short time organic quinoa replace almost totally conventional quinoa in foreign demand, while there is still for the latter in domestic market.

In next years things change even faster; the huge rise of demand from western countries (much more faster than production) makes a pressure over relationships between farmers and the agroindustry sector; private firms often

²⁴ Gesellschaft zur Förderung der Partnerschaft mit der Dritten Welt mbH“, or “Society for the Promotion of Partnership with the Third World”).

start to buy quinoa not from farmers of their “*red de proveedores*” but from others wholesalers and informal intermediates who multiply in the area. Challapata (a village in the Central Altopiano in the Department of Oruro), which historically has been the main informal market for exchange quinoa becomes a fundamental crossroad²⁵ not only in quinoa trade flows but also fixing the price, as it is determined as a mark-up rule based on Challapata’s price. This mechanism contributes to the increase of price volatility, and price differentiation among different quinoa’s varieties.

About the supply side, producers organizations and private firms continue to compete on similar markets, but private firms show an improved ability also to expand the market becoming suppliers of larger organic food distributors and later directly of some supermarket chains (as Carrefour in France) and they now own the higher market share of quinoa exports from Bolivia; at the same, even if advance in agroindustry is very slow in creating new added value, they demonstrate a greater aptitude in innovations for domestic market too, for instance in developing new products more pleasing for city consumers; for this scope, it is fundamental their main financial capability, as well their network activity under the umbrella of CABOLQUI (meaning, for instance, that some of them specialize in intermediate products, others in designing machineries for the agro-industry process, etc.)

4.2.3) Buyers

As we saw, the growth of a demand for quinoa from advanced countries has been the third pillar of the quinoa boom, so we need to make some short reference about the evolution of the buyer side of quinoa value chain.

At a first time, quinoa is purchased essentially by Alternative Trade Organizations, meaning that its trade has been seen especially as a tool to give economic chances to “emarginated farmers” by valuing one their typical (and by now neglected) crop.

²⁵ Bolivians now refer to Challapata as “quinoa’s Wall Street”

More than on the “crop quinoa” emphasis (and communication) here is put on “quinoa farmers” and the link between quinoa and its social and environmental context (stressing also its biodiversity and its use in traditional diets).

With the passing of time, organic specialized retailers and wholesalers become the main outlet market for quinoa; number and typologies of retailers selling quinoa in western countries multiply, so nowadays it can be bought in specialized organic stores as in supermarkets; anyway it is promoted with reference more at its attributes of “superfood” (healthy, organic) without (or less) specific reference of its historical and social origin.

In these way, “to be organic” is de-linked from “environmental sustainability”, as emerged clearly during the workshop organized by CABOLQUI when Bolivian exporters and international buyer discussed for instance about “risks and threats for quinoa business in the future”: for Bolivian organizations (and farmers obviously) environmental degradation can translate in the decline of their main “asset” to produce and trade quinoa (and, for farmers, for their livelihoods); buyers seem more worried about the chance that quinoa could lose its appealing attributes, for instance through the diffusion of genetically modified quinoa, that isn’t really an actual scenario at least for Real Quinoa in Bolivia.

The issue of price is another point to show all these changes; buying quinoa at a fair (higher) price for Bolivian farmers was surely a goal for pioneers of quinoa markets (Alternative Trade Organizations worked with the primary scope to give economic opportunity to the farmers); nowadays price is so high that it is perceived as a risk for exporters, fearing that buyers could decide to buy quinoa elsewhere.

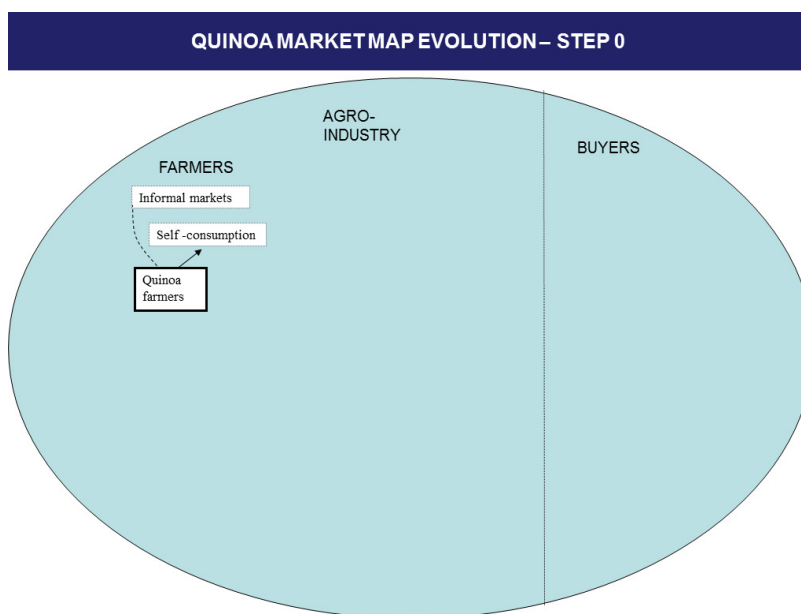
4.3 Evolution of governance structure in the quinoa value chain

One down the evolution of main players, we now have to pay attention at the evolution of the quinoa value chain as a whole:

4.3.1 The initial stage

Up to the middle of the eighties in the Southern Altopiano quinoa was still a traditional crop cultivated by smallholders family farms and utilized

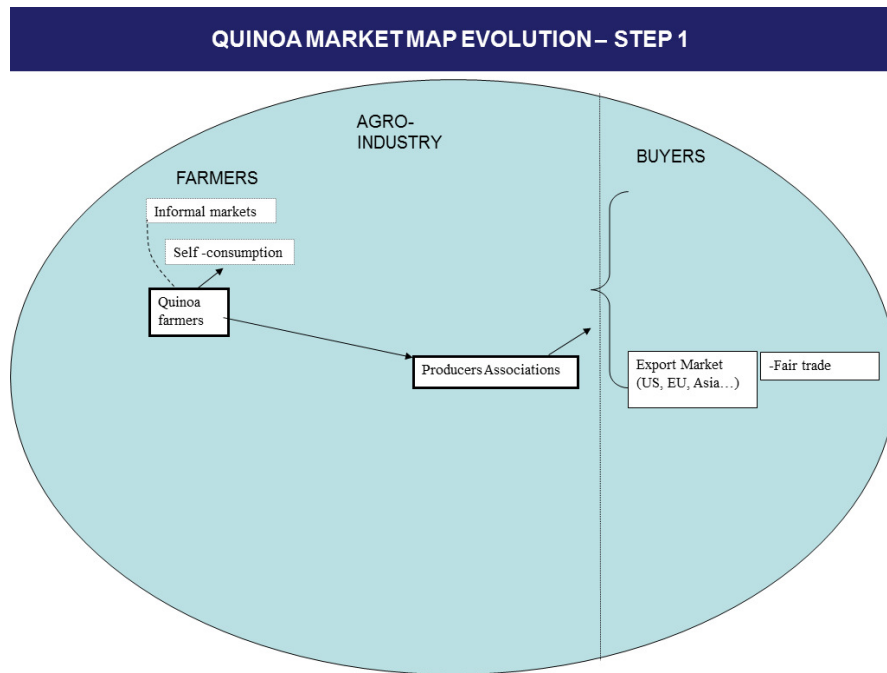
mainly for self-consumption (many farmers interviewed refer that they ate quinoa “*3 times a day, seven days a week*”). It is not possible at this stage to talk of a ‘quinoa chain value’, neither at local level, since markets were almost absent or exclusively local and subordinated to community needs.. The context is a very traditional one, so regulation of production and social life was based on communitarian local rules, as recalled before. Quinoa is rejected as ‘poor’s food’ either at national level, and their producers suffer from isolation and lack of economic alternatives



1) The ‘domestic-civic’ coordination

Since the middle of the eighties the work of producers organization becomes effective, and in these years we can speak about the birth of a quinoa value chain, that appears directly “global” (even if low-dimensioned). Mechanization of agriculture (started almost two decades earlier) offer the base for a regular and larger supply, and cooperation between producers organizations and fair trade works essentially in order to use quinoa production and trade to improve farmers livelihoods. Although the aid of Alternative Trade Organizations is essential, the value chain is essentially producer-driven in this step, and effectively their

relationships through are governed through typical fair trade rules, such as long-terms agreements defining before the harvest quantities, quality and price of quinoa that will be traded; trust and reputation of producers association is enough to guarantee that farmers are taking advantage of this new trend. Quinoa is promoted especially in Europe recalling farmers livelihoods and its role to enhance their condition, as its role in sustain and promote biodiversity.



2) The 'civic-industrial' coordination

At the middle of nineties, as we saw above, we have two further changes: the entry of new players, identified by private firms (and the linked ongoing process of farmers differentiation) and the shift to organic production.

The more evident consequence is the articulation of the market map with the increased number of players, that is by itself a factor of increased complexity and need for a more articulated governance structure.

We refer to this step as characterized by a coordination of civic and industrial conventions because quinoa is still appreciated for its properties

3) The 'civic-market' coordination

By the middle of 2000's organic certification is no longer a distinctive issue, simply because all quinoa traded at global level is now organic certified; anyway, along to the explosion of the quinoa boom, the issue or the price comes out strongly; more than the environmental consequences on the production side, there is a problem for exporter to comply their contracts with buyers if they are not able to purvey all the quinoa they need. If export prices increased already by the end of nineties, is it now that also farm-level prices grew up dramatically, with a further increase in global prices.

Informal intermediaries and local wholesalers have room for their activity, since they buy quinoa directly from farmers sometimes working in an oligopolistic way (if farmers urge to sell quinoa to face their other needs) and then they sell quinoa at the most favorable time; in addition, they pay farmers cash (rather they sometime directly barter quinoa).

Producers organizations still often offer the best price for farmers, especially for the most demand varieties, but their quota in farmers sells decrease because of the diminution of their market share.

Private firms, as we told in previous section, decrease their direct purchases from farmers by using informal intermediaries.

In general, price is now the main mechanism governing transactions among all players.

Medium price by destination (Bs/qq)			
Variety	Intermediaries	Producer organizations	Private firms
Blanca	653	694	649
Phisalnqalla	597	706	638
Negra	1107	1200	1500
Pandela	681	698	636
Toledo	690	723	720

Source: author's survey

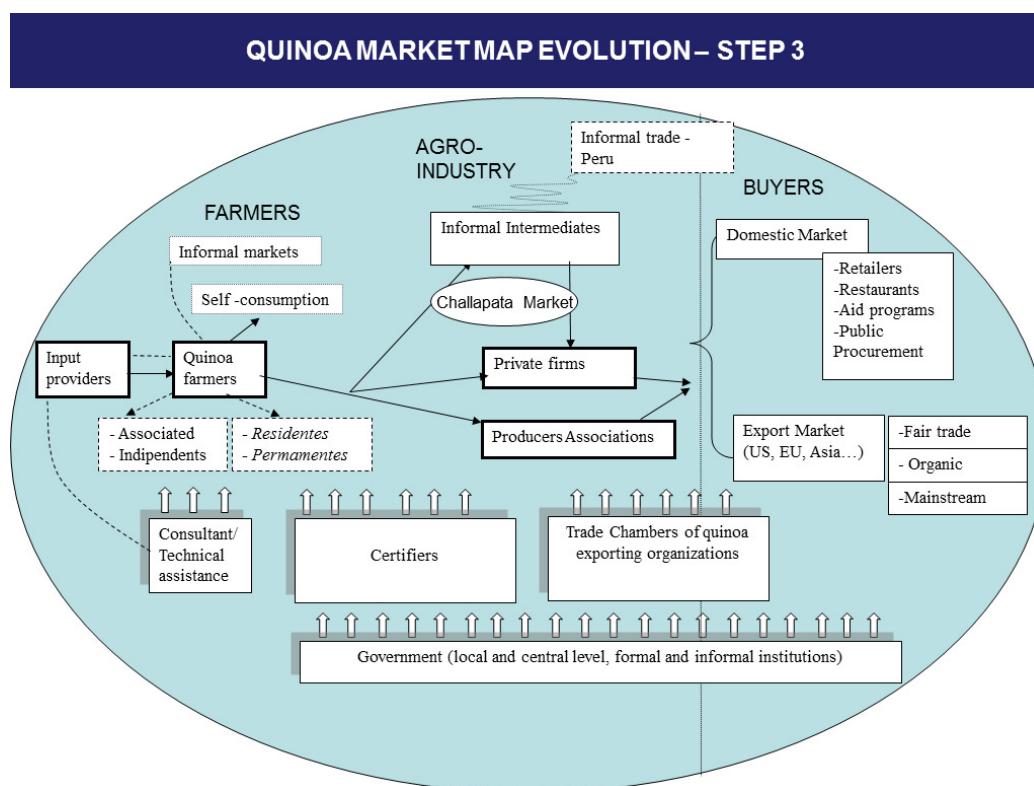
Quantity by destination				
Variety	Intermediaries	Producer organizations	Private firms	Self-consumption
Blanca	689	1142	516	648
Phisalnqalla	615	537	365	711
Negra	41	130	189	26
Pandela	621	255	185	212

Toledo	286	185	303	135
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Source: author's survey

The current design of the market map gives the idea of the articulation happened within the quinoa value chain in last two decades; anyway, in addition, it gives the representation that one step did not delay the previous: obviously each step a prevailing mechanism (and corresponding governance structure) is working, but the others still operates although in a residual way, and the coexistence of 'old' and 'new' (with their consequences in terms of rules and value distribution) is a source of conflicts and tensions among the player.

We can summarize in the next table, using some of the categories used in Chapter 2, the main differences at the different stages of the value chain:



Step	Governance	Prevailing quality	Enabling environment
------	------------	--------------------	----------------------

		convention	
0	None	None	<ul style="list-style-type: none"> - Farmers isolation; - 'Cultural stigma' on quinoa consumption
1	Producer driven	Domestic-civc	<ul style="list-style-type: none"> - Farmers reorganization - Fair trade agreements
2	Buyer driven	Civic-Industrial	<ul style="list-style-type: none"> - Organic certification - Global acknowledgment of quinoa's attributes
3	Buyer driven	Market-civic	<ul style="list-style-type: none"> - Pressure from the supply side - Weakness of direct linkages among farmers and agroindustry - 'Scarcity' of quinoa

This reconstruction follows the one describer by Laguna et al. (2006) and it also confirms

the analysis by Gibbon and Ponte (2005) about the relative instability of value chain governed through domestic conventions because of their low level of driveness.

In the next chapter we will analyze the impact on farmers wellbeing of quinoa trade using a multidimensional approach and we will discuss if dimensions more at risk since the quinoa boom can be in some way associated to these changed occurred into the value chain.

CHAPTER 5

QUINOA PRODUCTION AND FARMERS WELLBEING

El desarrollo del mercado de exportación de la quinua Real y su efecto sobre el precio de venta permite a los productores aumentar sus ingresos y mejorar sus condiciones de vida. También ha provocado una ampliación casi-generalizada de las superficies de cultivo. El impacto de social y medio-ambiental que se está dando en los últimos tiempos: conflictos de tenencia de tierras, individualización de los productores, sobre explotación de las parcelas, erosión, invasión de plagas, abandono relativo de la crianza de llama agravando los problemas de fertilidad... preocupa tanto a los productores como a los consumidores europeos
(ANAPQUI, Normas basicas para una produccion sostenible)

5.1 THE SUSTAINABLE LIVELIHOOD APPROACH

Per valutare come il successo commerciale della quinoa influenzi il benessere dei produttori, vengono identificate 5 dimensioni di impatto, parzialmente mutate dal Sustainable Livelihood Approach (Chambers 1995; Scoones 1998); quest'approccio analizza come le persone utilizzano le risorse a loro disposizione (i loro "assets") per porre un essere "livelihood strategies" atte a migliorare il proprio benessere: gli assets sono tradizionalmente classificati in capitale fisico, naturale, finanziario, sociale e umano. In ogni caso si raccomanda di usare con flessibilità questo approccio (Scoones, 1998) specialmente nell'analisi della povertà rurale, identificando nei diversi casi i differenti tipi di assets più rilevanti.

Nell'analizzare il caso della quinoa nell'altopiano meridionale della Bolivia è parso quindi utile mettere in luce le seguenti 5 dimensioni:

- ☐ Impatto economico
- ☐ Sviluppo sociale
- ☐ Sicurezza alimentare
- ☐ Risorse naturali
- ☐ Identità culturale

Mantenendo la filosofia originaria del Sustainable Livelihood Approach, nessuna di queste dimensioni è ritenuta più importante delle altre *a priori* né si cercherà di ridurle in un indicatore unico di benessere, ma ci concentreremo

sulle evidenze (positive e negative) per ciascuna di esse, mettendo in luce quando possibile alcuni trade-off che sembrano emergere.

A) Impatto economico

Anche se l'aumento dei prezzi al produttore è un fenomeno più recente dell'aumento dei prezzi all'esportazione, è evidente che la prima conseguenza dell'impatto economico è quella di un forte aumento dei redditi disponibili (tutti i produttori intervistati definivano ora almeno "adeguato" il prezzo da loro ricavato dalla vendita della quinoa).

Ulteriore conseguenza è la progressiva specializzazione: per l'81% dei produttori intervistati la quinoa rappresenta oggi la prima fonte di reddito, laddove fino a pochi anni fa erano caratterizzati da una pluri-attività (agricoltura, pastorizia, piccoli lavori). Tuttavia, guardando la concentrazione del reddito, troviamo un indice di Gini più basso²⁶ se prendiamo in considerazione il reddito totale prodotto in una household piuttosto che quello proveniente unicamente dalla produzione di quinoa; Questo può indurre a pensare che, con la tendenza alla specializzazione, si possa assistere ad un progressivo aumento delle disuguaglianze all'interno delle comunità, dovuta ad esempio al possesso o meno di un trattore o alla migliore capacità di gestire le fluttuazioni dei prezzi, evitando di vendere il prodotto quando il prezzo è più basso (cosa cui sono costrette invece le famiglie più povere).

Altro elemento rilevato durante l'indagine è il migliorato accesso al credito, grazie anche a due programmi specifici per i produttori gestiti uno dal Banco Union (la principale banca boliviana) ed uno direttamente da ANAPQI: il 35% degli intervistati ha chiesto ed ottenuto un prestito nel corso dell'ultimo anno, principalmente reinvestendo le somme nella produzione di quinoa:

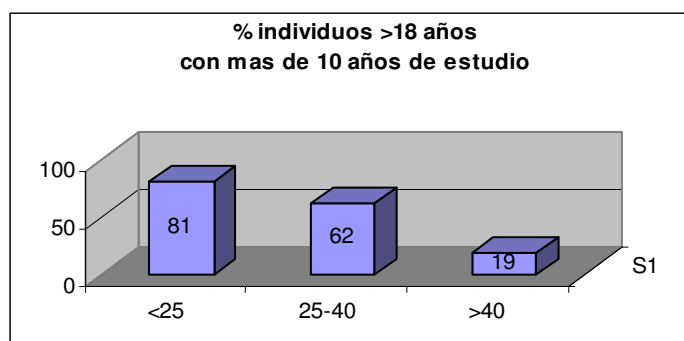
DESTINO PRESTAMO			
Inversiones	productiva	en	60%

²⁶ La distribuzione del reddito totale presenta un valore dell'Indice di Gini pari a 0,452, mentre quelle relative alla quinoa prodotta un valore di 0,511

quinua	
Otras inversiones productivas	13%
Mejoramiento casa	27%

B) Sviluppo sociale

Il miglioramento della situazione economica si è tradotto in maniera evidente in un miglioramento dell'educazione, sia se si prende in considerazione il numero di persone in formazione sia considerando il numero di anni di studio: fra i componenti il nucleo familiare con meno di 18 anni, il 98,81% si dichiara studente, mentre se consideriamo gli individui che hanno concluso almeno 0 anni di studio, troviamo significative differenze fra la classe sotto e sopra i 40 anni (quindi prima che il boom della quinoa potesse avere una qualche influenza:



Il miglioramento del benessere è riconosciuto dai produttori che, attraverso un esercizio di autovalutazione su una scala da 1 a 10 indicano nel corso degli ultimi 3 anni un aumento medio del benessere sia delle loro famiglie (da un valore di 4 ad uno di 5,48) sia della loro comunità (da 4,03 a 5,65).

Dal punto di vista delle infrastrutture fisiche, escludendo quei miglioramenti non imputabili allo sviluppo del mercato della quinoa (quali ad esempio

l'accesso all'acqua potabile, che dipende da programmi governativi che stanno progressivamente raggiungendo le varie comunità della regione), la relazione più significativa è con la costruzione di servizi igienici dentro le case, ancora poco diffusi (meno del 50% degli intervistati li possiede) ma significativamente associati al livello del reddito.

C) Sicurezza alimentare

Uno dei punti maggiormente controversi della relazione fra successo commerciale e benessere dei produttori è rappresentato dagli effetti che l'aumento dei prezzi e la tendenza all'esportazione possono avere sulla sicurezza alimentare interna.

Se è immaginabile che l'aumento dei redditi permetta l'accesso ad una dieta maggiormente variata, alcuni autori (Mediano e Torrido, 2009) notano come proprio nelle zone di maggiore produzione di quinoa sembra manifestarsi un aumento dei casi di insicurezza alimentare; la spiegazione di tale relazione negativa sarebbe data essenzialmente da tre fattori:

- Maggiori limitazioni all'accesso alla quinoa stessa da parte di persone che non producono quinoa (e che quindi non beneficiano neanche dei maggiori redditi)
- Modifiche nelle abitudini alimentari, con la sostituzione del consumo di quinoa con alimenti (soprattutto riso e pasta, peraltro frequentemente importati) più economici ma con minori valori nutrizionali
- Disincentivo alla produzione integrata della quinoa con altre colture (specialmente patate), come avveniva nel vecchio sistema tradizionale di coltivazione della quinoa, poi soppiantato a favore della coltivazione organica.

Nell'analisi con i produttori, abbiamo cercato di tenere conto di diversi indicatori per monitorare l'impatto sulla sicurezza alimentare, e in particolare

- Frequenza di consumo della quinoa e di altre classi di alimenti (7d recall and 24h recall)

- Autopercezione della vulnerabilità alimentare (e sua evoluzione nel tempo)
- Autoproduzione di altri componenti dell'alimentazione della famiglia
- Spesa alimentare

Anche se quasi tutti gli intervistati hanno sottolineato come la quinoa fosse consumata meno rispetto al periodo della loro infanzia (quando si mangiava quinoa “*tre volte al giorno, 7 giorni a settimana*”), e come in particolare i più giovani non la trovino oggi di proprio gradimento, il livello di consumo nelle varie comunità è ancora elevato:

Frequenza di consumo per classi di alimenti nella settimana precedente l'intervista

	7D RECALL		
	0-1	2-4	5-7
Quinoa	9,4	74,1	16,4
Cereales	11,8	28,2	60
Carne	3,5	8,2	88,2
Leguminosas	84,7	12,9	2,3
Papas	0	0	100
Verduras	2,3	3,5	94,1
Fruta	24,7	36,4	38,8
Leche	31,8	23,5	44,7

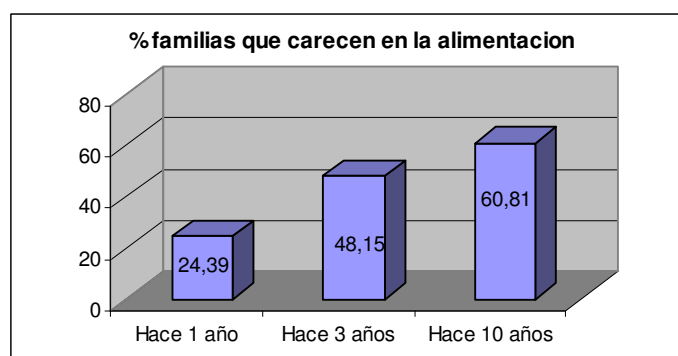
Presenza di consumo per classi di alimenti il giorno precedente l'intervista

	24H RECALL (%)	
	Si	No
Quinoa	51,22	48,78
Cereales	90,24	9,76
Carne	95,12	4,88
Leguminosas	7,32	92,68
Papas	100	0
Verduras	96,34	3,66

Fruta	59,76	40,24
Leche	62,2	37,8
Azucares	76,83	23,17
Aceite	93,9	6,1
Licores	2,44	97,56

Usando il Food Consumption Score (WFP, 2009) per sintetizzare i dati del 7D recall, si ottengono risultati largamente positivi, con un risultato del FCS sempre all'interno del gruppo "accettabile" tranne due casi in cui si posiziona nella fascia "Borderline". E' evidente in altre parole come la diminuzione del consumo di quinoa (peraltro ancora largamente utilizzata: circa l'83% delle famiglie la consuma fino a 4 volte a settimana) sia più che compensato da una diversificazione della dieta che permette, ad esempio, l'accesso a frutta e verdura. Ricollegandoci alla descrizione della mapap degli attori fatta nel paragrafo precedente, è interessante notare come ciò dipenda ovviamente da una maggiore disponibilità economica ma anche da un incrementato accesso fisico a classi di alimenti prima preclusi, dovuto principalmente alla presenza degli intermediari che viaggiando con maggiore frequenza nell'area portano tali prodotti (spesso scambiandoli direttamente con la quinoa).

Anche per questa dimensione del benessere si è proposto un esercizio di autovalutazione, chiedendo se si ritiene l'alimentazione per la propria famiglia sufficiente o meno (all'epoca dell'intervista, nei 3 e nei 10 anni precedenti):



Evidentemente, la relazione fra incremento del prezzo e conseguenze sul consumo della quinoa andrebbe estesa considerando le variazioni del

consumo per i soggetti che non beneficiano dell'effetto reddito, sia nei contesti rurali che in quelli urbani: si tratta di due ambiti ancora scarsamente studiati, considerando anche che – per il primo caso – bisognerebbe necessariamente prendere in considerazione un'area più vasta (infatti, si ricorda, nella zona del Salar la coltura della quinoa è l'unica attività agricola praticabile, quindi sostanzialmente non è possibile incontrare farmers che non beneficino dell'aumento dei prezzi); per quanto riguarda il consumo urbano, si può notare comunque come la “celebrità internazionale” assunta dalla quinoa abbia rimosso una sorta di stigma culturale (la quinoa etichettata come “cibo degli indios”) comportando il fatto che oggi sia possibile trovare la quinoa in diversi contesti (tanto nei mercati, quanto nei supermercati e nei menù di molti ristoranti, cosa che non accadeva fino a 10/15 anni fa). Nell'attesa di studi più specifici - che potrebbero ad esempio indagare meglio quali sono i drivers della domanda interna²⁷ – si riporta comunque il dato fornito dall'INE (Istituto Nazionale di Statistica) che riportano un aumento del consumo interno pro-capite da 0,35 kg/anno nel 2008 a 1,1 kg/anno nel 2012.

D) Environment:

Il tema della sostenibilità ambientale rappresenta l'altro tema di forte preoccupazione fra chi teme effetti negativi del quinoa boom: in questa ricerca esso è stato studiato nei due aspetti dell'impoverimento dei suoli e della riduzione della biodiversità.

L'estensione media delle aree coltivate da ogni famiglia è di 10,47 ettari, in aumento rispetto al passato, a conferma dell'estensione della frontiera agricola:

In confronto con il		
periodo	3 anni	10 anni
precedente, l'area	precedenti	precedenti
coltivata oggi è:	(%)	(%)
Più piccola	4,87	8,22

²⁷ Si vedano, ad esempio, gli studi condotti sul consumo nelle città di Oruro (Montoya, 2007) e Potosì (Borja and Soraide, 2007)

Uguale	36,59	19,18
Più vasta	58,54	72,60
Totale	100	100

Le aree lasciate a riposto hanno una dimensione media simile a quelle in produzione (12,13 ettari), ma il tempo medio in cui un'area è lasciata a riposo è di 1,53 anni, drasticamente ridotto rispetto a quanto succedeva in passato secondo quanto dichiarato dagli stessi produttori (il periodo di rotazione poteva durare normalmente fino a 7/8 anni).

Ancora attraverso un'autovalutazione, si nota come i produttori siano coscienti del fatto che la qualità del suolo stia peggiorando, come conseguenza dello stress produttivo cui è sottoposto:

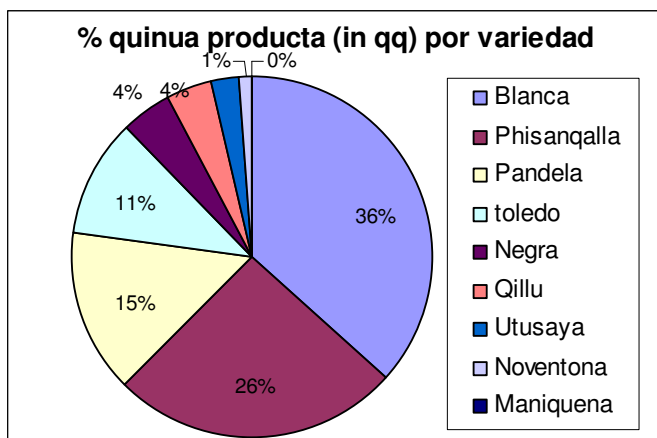
In confronto con il periodo precedente, la qualità del suolo coltivato oggi è:	3 anni precedenti (%)	10 anni precedenti (%)
Migliore	11,90	12,50
Uguale	36,90	25,00
Peggiora	51,19	62,50
Totale	100	100

Altro elemento che ha implicazioni dal punto di vista ambientale è la diminuzione dell'attività pastorizia (in particolare la cura dei lama) in quanto come il delicato ecosistema della zona dell'Intersalar storicamente si è retto sull'equilibrio fra attività agricola e pastorizia: dall'indagine risulta che il 40% delle famiglie non possiede neppure un capo di lama, mentre il valore medio del rapporto fra lama posseduti e ettari disponibili per ogni famiglia (considerando sia le aree in produzione che quelle messe a riposo) è di appena 1,7, molto lontana dal valore di 5 indicato, ad esempio, da ANAPQUI come valore minimo che ogni famiglia associata dovrebbe rispettare.

Numero di lama posseduti	Freq.	Percent
0	34	39,08
1-10	3	3,45
10-50	26	29,89
50-100	16	18,39
Oltre 100	8	9,2
Total	87	100

Altro fenomeno che ha accompagnato l'esplosione commerciale della quinoa è la riduzione delle varietà coltivate: il catalogo della Quinoa Real nell'Altopiano meridionale realizzato dalla Fundacion PROINPA ha catalogato oltre 100 varietà di quinoa, ma la domanda estera si è concentrata solo su poche di esse, particolarmente apprezzate in virtù del grano di diametro maggiore e della maggiore semplicità nella lavorazione post-raccolta. In particolare, a livello commerciale la quinoa è esportata come quinoa nera (corrispondente alla varietà "Negra"), rossa (corrispondente alla varietà "Phisanqalla") e soprattutto bianca: quest'ultima però non corrisponde ad una specifica varietà (nonostante esista una varietà chiamata Blanca"), ma dipende dal colore che il grano proveniente da diverse varietà assume dopo il processo di purificazione.

I produttori dell'Altopiano meridionale associano le diverse varietà a sapori ed usi differenti (Astudillo, 2007, in particolare al loro differente impiego per diversi tipi di pietanze, ma la capacità di apprezzare tali differenze si perde man mano che ci si allontana dal contesto di origine. Lo spostamento della produzione da autoconsumo a esportazione è stato allora accompagnato da una significativa riduzione della diversità esistente: durante l'indagine è stato riscontrato che appena 4 varietà coprivano quasi il 90% della produzione realizzata dagli intervistati:



Il fatto che la produzione meccanizzata abbia sostituito quella manuale, che si svolgeva nelle zone di montagna e frazionata in più parcelle di terreno di ampiezza minore, porta i contadini a ridurre il numero di varietà piantate:

NUMERO DE VARIEDADES

CULTIVADAS Freq. Percent Cum.

1	12	13,79	13,79
2	32	36,78	50,57
3	24	27,59	78,16
4	13	14,94	93,1
5	6	6,9	100

Total 87 100

Non sono emerse evidenti correlazioni numero fra numero di varietà coltivate e alcune delle variabili generalmente prese in considerazione nelle analisi sulla biodiversità²⁸:

```
. poisson nvar cult afil h1_est h1_edad
h1_viv
```

²⁸ Sul punto cfr. anche (Astudillo and Aroni, 2012)

Iteration 0: log likelihood = -

106,953

Iteration 1: log likelihood = -

106,95284

Iteration 2: log likelihood = -

106,95284

Poisson regression

Number of obs = 68

LR chi2(5) =

9,47

Prob > chi2 =

0,0918

Log likelihood = -106,95284

Pseudo R2 =

0,0424

nvar	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
					Conf.	Interval]
cult	0,021561	1%	2,8	0,005	0,006447	0,036675
afil	0,126589	33%	0,38	0,705	-0,52889	0,782068
h1_est	0,020465	2%	0,99	0,323	-0,02009	0,061019
h1_edad	0,005726	1%	0,97	0,331	-0,00582	0,017271
-						
h1_viv	-0,14766	26%	0,56	0,577	-0,66682	0,371493
_cons	0,331155	56%	0,59	0,557	-0,77447	1,436783

I produttori si dicono consapevoli del rischio di diminuzione della varietà della quinoa, e per il 77% si dicono disponibili a partecipare a programmi che prevedano espressamente di destinare parte del terreno coltivato alle varietà a rischio estinzione. Alla domanda su quale dovrebbe essere l'incentivo o la ricompensa per partecipare a programmi di questo tipo, le risposte prevalenti

riportano comunque a scelte che permettano di creare un aggancio alla domanda di quinoa, e quindi a sostenerne la produzione (aiuto nella produzione e/o nella commercializzazione):

APOYO

REQUERIDO	Freq.	Percent
Semilla	14	25
Apoyo produccion	15	26,79
Commercializacion	15	26,79
Recompensa	5	8,93
Abono	5	8,93
Otro	2	3,57
Total	56	100

Durante le interviste con key players²⁹, è invece emerso il possibile legame fra sviluppo dell'agroindustria e valorizzazione della diversità genetica: le diverse varietà hanno proprietà organolettiche differenti, che potrebbero essere sfruttate per differenti processi di lavorazione e/o di prodotto finito; il fatto che il prodotto esca ad uno stato di lavorazione molto basso, e che addirittura varietà distinte vengano mischiate durante il processo di purificazione per essere esportate poi sotto la dicitura comune di quinoa "bianca" rappresenta una forma di "sottoutilizzazione" della quinoa (o meglio di sua sottovalorizzazione); se queste proprietà fossero maggiormente sfruttate grazie ad un migliore sviluppo del processo agroindustriale, si potrebbe sfruttare ancora una volta la pressione proveniente dal lato della domanda (verosimilmente capace di accogliere innovazioni di prodotto, ad oggi sviluppate principalmente all'interno degli stessi paesi importatori) per provare anche a tutelare la diversità genetica della quinoa.

²⁹ Conversazioni con W.Rojas, PROINPA e XXX, APQUISA

E) Identità culturale

Se la quinoa deve il suo successo al riconoscimento delle sue qualità da “superfood”, quello che invece si va perdendo è la conoscenza del suo possibile utilizzo per usi alternativi all'alimentazione, ad esempio solo il 7% degli intervistati dichiara di utilizzarla anche per usi medicinali (e, ancora una volta, ad usi diversi sono associate conoscenze delle proprietà di diverse varietà: ad esempio la varietà “qillu” era utilizzata per la medicazione post fratture ossee).

D'altra parte, la fama che la quinoa raggiunge in particolare in ambito urbano porta a riconsiderare in modo positivo il complesso del sistema sociale e produttivo da cui proviene: il fatto che si assista ad un'inversione dei flussi migratori, anche con fasce giovani di popolazione che scelgono di rientrare nelle comunità di origine, si spiega non solo con l'opportunità economica derivante dalla produzione della quinoa, ma anche al riconoscimento sociale di cui ora gli agricoltori godono.

5.2 Economic and social upgrading in quinoa value chain

L'analisi dell'impatto della commercializzazione della quinoa sui produttori (riassunto nella tabella seguente) ha messo in luce conseguenze positive e negative del quinoa boom, prevalentemente confermando quanto già presente in letteratura (in tema di impatto economico, sociale e ambientale) e – per quanto riguarda il discusso punto dell'alimentazione – facendo emergere un trade-off per il quale il consumo di quinoa effettivamente diminuisce, ma grazie alla diversificazione della dieta l'impatto nutrizionale è positivo.

Dimension		Indicators (data)	Comments
Economic	↑	<ul style="list-style-type: none"> •Income (Y from quinoa and y from other activities) •Credit (Sources, amount and utilization) 	<ul style="list-style-type: none"> •Increasing specialization •Price volatility •Cost of production rising •Inequalities increasing
Social	↑	<ul style="list-style-type: none"> •Education (N. of peoples in training; level of education) •Basic assets (Baths and electricity in house) •Auto-evaluation wellbeing (Changes for the family and the community) 	<ul style="list-style-type: none"> •Presence of large governmental infrastructural programs
Nutrition	↑	<ul style="list-style-type: none"> •Food consumption score (7d recall) •Quinoa consumption (24h recall) •Food expenditure (Other food produced for autoconsumption; 	<ul style="list-style-type: none"> •Role of intermediates •Need of better understanding about urban consumption drivers
Environment	↓	<ul style="list-style-type: none"> •Soil erosion (Autoevaluation) •Lama/Ha ratio (N. Lama owned) •Biodiversity loss (N. and Q. of varieties cultivated) 	<ul style="list-style-type: none"> •Need of better understanding of “underutilization” of biodiversity
Cultural identity	?	<ul style="list-style-type: none"> •No food uses (other uses) •Variety preferences (use in cooking) •Traditional institutions (<i>Ayni</i>) 	<ul style="list-style-type: none"> •Reverse migration flows

Risulta evidente come le dimensioni che hanno tratto il maggiore vantaggio dal quinoa boom sono quelle di tipo “privato” (aspetto economico, sociale e nutrizionale) mentre le dimensioni che hanno a che fare con una forma di benessere collettivo (ambiente, identità culturale) sono quelle che presentano i maggiori punti critici.

Questa dinamica può essere compresa, ritornando allo studio della catena del valore, utilizzando le categorie di upgrading e governance.

Per quanto riguarda la prima, osservando i cambiamenti in atto, si può parlare di upgrading per i singoli produttori prendendo in considerazione il beneficio dell’aumento del reddito e la dimostrata capacità di investirlo ad esempio in processi come la migliore educazione dei figli ed il miglioramento delle abitazioni; dal punto di vista strettamente produttivo, una forma di upgrading è sicuramente data dal fatto di aver ottenuta la certificazione organica. Se si sposta però lo sguardo non sul singolo produttore ma sulle fasi di produzione

nel loro complesso ed al modo con cui si riorganizzano le attività all'interno della V.C., occorre notare come i farmers (neanche in forma associata attraverso le associazioni di produttori, che come detto sono stati i pionieri della creazione di una GVC per la quinoa) non riescano a raggiungere le aree di maggiore valore aggiunto, anzi siano sempre più relegati nel semplice ruolo di fornitori di materia prima.

Del basso sviluppo dell'agroindustria si è già detto in precedenza (così come dei suoi molteplici legami con possibili modi di affrontare alcune delle minacce quali la riduzione di biodiversità); se aggiungiamo che le associazioni di produttori perdono progressivamente quote di mercato rispetto alle imprese private, ed il ruolo crescente degli intermediari che di fatto "allungano" la catena produttiva, possiamo parlare di un effetto di Value Appropriation (la catena della quinoa diventa più "ricca", e di questo ne beneficiano tutti gli attori coinvolti) e di uno di Value Distribution, per il quale il valore (ma anche le esternalità negative che si generano) tendono a spostarsi dalla sfera dei produttori alle fasi successive seguenti della filiera.

In questo passaggio, è opportuno riconsiderare anche i mutamenti che occorrono nel tipo di governance: utilizzando il concetto di "Governance as normilizing" (Gibbon and Ponte, 2005), nel passaggio da una governance fondata su una convenzione civico-domestica ad una civico-industriale e infine ad una di mercato corrisponde una maggior "level of driveness", ma a questo si accompagna:

- a) un cambiamento nei soggetti che riescono ad esercitare una maggiore influenza lungo la catena: i produttori nella coordinazione civico-domestica (che però abbiamo detto presenta un grado di driveness basso), i buyers nella coordinazione di mercato
- b) un cambiamento nell'attributo di qualità rilevante per lo scambio, che non è più "il grano andino dimenticato" ma "il superfood certificato bio"

Questi mutamenti ovviamente non sono né lineari né definitivi, al contrario tuttora è possibile riscontrare tensioni fra i vari attori spiegabili anche) con il tentativo di affermare modalità di governance differenti. Vediamo tre esempi in questo senso:

- Organic vs. sustainable: per i buyers l'elemento della certificazione organica è un requisito indispensabile, mentre per i produttori il tema centrale oggi è quello della sostenibilità, cioè di una pratica agricola che preservi il territorio. Durante il workshop con gli importatori è emerso in maniera evidente come per i buyers queste due caratteristiche fossero confuse, ma di fatto lo strumento dello standard bio si dimostra incapace di assicurare anche la sostenibilità
- Specializzazione vs. Pluriattività: La pressione per avere maggiore quantità di prodotto porta ad una progressiva estensione della frontiera agricola, a scapito anche di altre attività rurali come la pastorizia; questo crea un ennesimo circolo vizioso, in quanto gli escrementi di lama erano largamente usati per concimare il terreno (qui è opportuno richiamare ancora la fragilità dell'ecosistema dell'Altopiano meridionale, mantenutasi nel tempo appunto anche grazie all'equilibrio lama/quinoa). Alcune organizzazioni di produttori hanno delle norme per i loro associati in merito ad un numero minimo di lama per ogni ettaro di terra in produzione, ma come detto tali organizzazioni diventano percentualmente sempre meno rilevanti
- Gestione del prezzo: il prezzo oggi è ritenuto adeguato dai produttori, eccessivamente alto dai buyers e soprattutto dagli esportatori, che temono la domanda di quinoa possa spostarsi verso altre zone di produzione. I farmers sono ovviamente consapevoli che attualmente il livello dei prezzi dei prezzi derivi dall'incremento della domanda estera, ma rispetto al destino della produzione non attribuiscono una preferenza *a priori*, anzi identificano come una delle priorità quella di aumentare il mercato interno. Gli esportatori invece come detto auspicano una diminuzione dei prezzi, ma dichiarano non desiderabile una qualche forma di controllo, ipotizzando che i prezzi possano diminuire con l'incremento della produzione ed un miglioramento delle tecniche;

c'è da dire però che la tendenza sembra invece opposta, con un incremento progressivo nei costi di produzione negli ultimi anni³⁰.

³⁰ Elaborazione effettuata da PRONPA negli anni 2008 e 2011

CONCLUSIONI

Nel corso dell'indagine è stato effettuato un esercizio con i produttori intervistati, proponendo diverse strategie (legate alla produzione e commercializzazione della quinoa) che possono influire sul loro benessere, il cui risultato è espresso nella tabella seguente³¹:

ESTRATEGIA	SCORE
Luchar contra el deterioro del medioambiente	4,33
Aumentar el consumo interno	3,91
Distinguir la quinua del salar de otra quinua	3,41
Estabilizar el precio	3,33
Aumentar el precio	3,30
Aumentar el consumo exterior	2,74

Allo stesso modo, veniva chiesto (stavolta senza fare necessariamente riferimento unicamente al settore della quinoa) il tema più rilevante in tema di una strategia di sovranità alimentare:

ESTRATEGIA	RANK
Producir respectando el medio ambiente	4,80
Apoyar la agricultura familiar	4,08
Promover el mercado interno	3,70
Promover los productos con fuerte identidad cultural	3,30
Aumentar las exportaciones de productos agriculos	2,86

³¹ Nel corso dell'intervista veniva chiesto di mettere in ordine le 6 strategie proposte, dalla più importante a quella meno; nella tabella qui presentata, per maggiore chiarezza il dato viene capovolto attribuendo il punteggio di "6" alla strategia ritenuta più importante e "1" a quella meno rilevante

Bajar las importaciones	2,27
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Appare evidente come il tema della salvaguardia ambientale sia il tema percepito come maggiormente rilevante dai farmers, che attribuiscono ad esso la doppia valenza di principale “capitale produttivo” di cui dispongono ed ovviamente di elemento costitutivo del contesto socio-economico di riferimento.

L'affermazione della quinoa, come si è visto nei paragrafi precedenti e come ormai noto in letteratura, ha mostrato forti le potenzialità di questa coltivazione sia per il suo valore commerciale che per il ruolo che potrebbe avere (ma ancora non svolge pienamente) ai fini del consumo interno.

Nel confronto fra gli attori coinvolti, sembrano emergere due modelli, a seconda che si privilegi il suo potenziale commerciale o il suo legame con il territorio, modelli che possono rappresentati dall'essere centrati sulle caratteristiche del prodotto o dal legame prodotto>produttore>territorio:

	Product focused model	Farmer focused model
Governance driving	Buyer	Producer
Price level	Low	High (but associated with public policy to promote domestic consumption)
Product policy	Standardization	Specification and diversification
Producer specialization	Yes	No (do not detach quinoa VC from other economic activity, e.g. lama VC)
Policy demanded	Support to increase productivity	Support to domestic market
Market priority	Exports	Domestic

Risks	Environmental sustainability, low productivity, new country entries (suppliers)	No rise in domestic consumption (and resulting price and income decrease)
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La legge 144 ("Ley marco de la Revolución productiva") annovera la quinoa fra i "prodotti strategici per la sicurezza e la sovranità alimentare dello Stato) ma sotto questo titolo sono riuniti sia prodotti indirizzati al consumo interno sia prodotti ritenuti strategici grazie alla possibilità di generare entrate commerciali (si pensi alla soia e/o al cacao); la quinoa potenzialmente presenta entrambe tali caratteristiche, ma sul piano delle politiche pubbliche concrete tutti gli attori intervistati hanno sottolineato la sostanziale assenza di interventi specifici da parte del governo.

Il paradigma della sovranità alimentare sembra allora offrire uno schema per indirizzare lo sviluppo del settore della quinoa che, non negando il beneficio commerciale, permetta anche di gestire alcuni dei nuovi rischi generati proprio dal successo di questi ultimi anni; è evidente allora che l'oggetto di politiche pubbliche appropriate (si pensi che la Bolivia è uno degli Stati ad aver inserito in Costituzione il tema della sovranità alimentare) potrebbe essere proprio quello di sostenere uno sviluppo in questo senso, ad esempio ponendo la questione dell'aumento del consumo interno anche attraverso programmi di intervento specifici come progetti di *desayuno escolar*.

Dal punto di vista metodologico, lo studio della catena del valore ha messo in luce l'articolazione del settore ma anche come il concentrarsi unicamente sulle relazioni *interne* fra gli attori coinvolti non permette di comprendere a fondo legami esistenti fra catena e contesto territoriale in cui essa si sviluppa: il tema della complementarità (e della sua rottura) delle attività di agricoltura della quinoa e allevamento di lama ne è un esempio.

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