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Proximity Agriculture in Lima: Is a fairer production system emerging for producers and consumers?

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Abstract:

Lima, Peru's political and economic capital, is a city of over 9 million inhabitants that has risen to the challenge of food supply: products are sourced from throughout the country, and the city has faced no major supply shortfalls since the 1990s. Today, urban and peri-urban agriculture is a residual activity, often confined to the edges of the city or areas abandoned by the authorities. Indeed, urban agriculture appears to have taken a secondary role in terms of access to food, although its significance in the creation of a food system that is fairer to both consumers and producers has received little study. The urban proximity offers the opportunity to set up alternative food systems, as well as commercialisation chain that benefit to both producers and consumers, in particular through short food supply chains. However, these new initiatives are not accessible for all the operators. In order to bring producers and consumers close together, not only is the geographical position important, but also the setting up of networks that include independent operators.

Keywords: Urban and peri-urban agriculture, Lima, short food supply chains, alternative food systems.

Feeding the city of Lima, the economic and political capital of Peru with its over 9 million inhabitants, is a fundamental issue. It involves organizing commerce in products that are heavy and fragile while also ensuring that a population with a range of income levels has access to adequate amounts of quality products (Hattemer, 2012). The residents of Lima have access to various supply networks that are suited to the heterogeneity of their lifestyle: supermarkets, covered markets of

various sizes and neighbourhood grocery stores. Food and access to the food market do not appear among *Limeños'* concerns according to the annual report "Lima como vamos" [tr. Lima, how we're doing] on their needs. Other problems, such as safety or mobility seem to be the priorities. Malnutrition rates are much lower in Lima and the surrounding region than in the rest of the country: In 2011, the chronic malnutrition rate for children under the age of 5 years was 6.8% in Lima, 10% in the other urban areas of Peru and 37% in rural areas (Aldana, 2013). At the metropolis level, access to food is assured and the problem of food security is not a main concern. However, Lima is a socially very heterogeneous city, although the middle classes represent approximately 36% of the total population (APEIM, 2012). The food supply is uneven, both in terms of quality and quantity, depending on the neighbourhood, with certain products being rare, if not nowhere-to-be-found in working class neighbourhoods. Unequal access to food follows social inequalities; the problem can thus be stated in terms of food justice. This concept encompasses the issues of agricultural sustainability, environmental issues, public health, nutrition, social classes, etc. (Gottlieb and Joshi, 2010). This emerging alternative movement (Paddeu, 2012) ensures that "[tr.] the benefits and risks of the places, products, production means, transport, distribution, access and consumption of food are shared fairly" (Gottlieb and Joshi, 2010). Thus, food justice relates to the desire for a more equitable distribution of products in terms of quantity but quality as well, and may therefore gain traction in the case of Lima. At the same time, the concept also has the objective of reducing the inequalities in farm workers' working conditions and their unfair payment (Lang and Heasman, 2004). Food justice activists denounce the present food system and seek to create alternative systems, in urban areas in particular (Deverre and Lamine, 2010), in response to food security issues. It is often thought that urban and peri-urban agriculture is intrinsically a key to food justice (Allen, 2010; Morgan, 2015). This implied systematic connection between the local agri-food system and food justice has already been studied by a certain number of scholars (Allen, 2010; Warshawsky, 2014). It appears that initiatives promoting locally-sourced food have not, in any meaningful way, proven their ability to bring about sustainable social changes in urban areas suffering from social, racial and spatial inequalities. The

purpose of this article is to expand on these thoughts using a metropolis in the South as the basis.

The term “justice” can be addressed from three very broad perspectives. To frame our topic, we are excluding reflection on global considerations of food justice in favour of a more local approach focused on a Latin American metropolis. This means verifying the contribution of urban and peri-urban agriculture in the supply chain for the residents of Lima, particularly in terms of justice. Does it enable producers to obtain fairer payment thanks to adaptation to urban reality in terms of demand and opportunities? At the same time, is urban agriculture a means for Lima’s poor to supply themselves with quality food at a lower cost thanks to direct supply chains? Finally, do urban and peri-urban agriculture create new spaces where agricultural and urban stakeholders interface and meet (Perrin and Soulard, 2014)? Are these spaces equally accessible to the producers and consumers?

This reflection is based on a number of field investigations carried out in Lima between 2011 and 2014 with farmers and livestock producers in peri-urban areas, but also with founding groups of shared gardens within the city. These investigations were completed through a series of interviews with the officials of municipalities, districts, state agriculture support agencies, NGOs and universities¹. An all-encompassing on-site approach to agriculture in the city of Lima is made possible through this array of investigations. It involves both urban and peri-urban agriculture, thus allowing the similarities and differences between these two activities to be better defined, and making it possible to identify the contributions of each with regard to establishing greater food justice.

The aim of this article is to analyze the links between productive spaces in the city and consumers from a perspective of food justice. The first part introduces Lima’s agriculture and the difficulties encountered to ensure its legitimacy in the metropolis

¹ In total, 4 field visits were made ranging from 3 to 6 months in length. The repeated trips made it possible to observe how agricultural spaces were evolving and producers’ strategies in a context where changes in land use can take place very quickly, and thus with regard to the transition from agricultural to residential land use.

despite an excellent situation. In the second part, conversely, productive spaces will be studied that have been able to take advantage of urban demand, focusing on the vitality of certain producers and their ability to adapt. The third part will discuss spatial organization of the city in relation to the local food system, and emerging and abandoned productive spaces.

I. Is agriculture marginalized as well as being on the margins of the city?

Today, Lima's agro-pastoral activity is frequently restricted to neighbourhoods in the periphery, far from city centres and people's sight. However, the direct proximity of a market of 9 million consumers is an obvious opportunity for producers, provided they manage to adapt to the distinctive features of this novel context. The connection between geographic proximity and integration with the city is not always obvious and can bring both opportunities and marginalization for farming and its stakeholders. In Lima, agro-pastoral activity, in addition to being relegated to the edges of the city, is but scarcely acknowledged by city-dwellers. Farmers and livestock producers encounter certain difficulties in benefitting from their proximity to the city. Marginality can therefore be two-fold. Despite that, if we look closely at specific productions, this form of agriculture plays a significant role in providing the city's food supply.

1. Agriculture in the hands of small owners

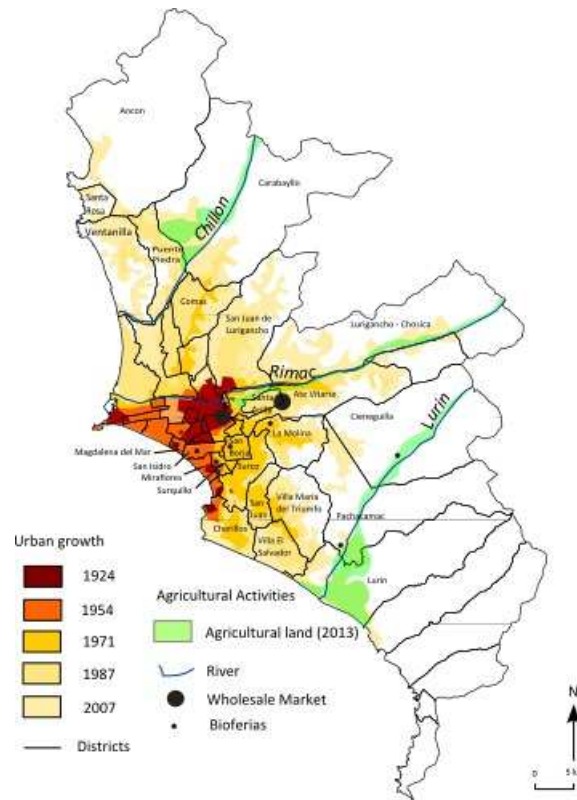
The parcels of land within the city limits of Lima are almost in their entirety the legacy of the former haciendas that surrounded the capital from the colonial period until the early 1970s. Since then, business has been a more important agricultural consideration than food crops in Lima. Following the 1969 land reform setting the upper limit for the size of properties at 150 hectares on the coast, the land was given to those who worked it and the haciendas disappeared. In the 1980s, the operators near Lima found themselves with parcels consisting of 3 to 5 hectares (Mesclier, 2000). Thus, the transition from the hacienda system to the dispersal of parcels took

place, including a period of community management of the land. Today individual farmers work the agricultural land, a situation that can be likened to a cottage industry (individual farmers decide on the crops, financing seasons and reinvestment of the earnings from previous seasons). By eliminating the monopoly of land as a source of income, the land reform also eliminated landowners as a class (Rémy, 1991). The land reorganization was very complicated (Mesclier, 2011), and the 1969 reform brought numerous restrictions but it helped to create fairer access to land by liberating many workers from an archaic system of domination (Valcárcel, 1995).

Agro-pastoral activity in Lima involves 8,852 producers in addition to which are about 100 corporations and businesses covering an area of nearly 40,000 hectares (INEI, 2012). The farm census indicates that over 58% of these producers work areas of 0.5 hectare or smaller. These official figures contradict the data collected in the field, according to which most producers work parcels generally consisting of 4 to 7 hectares. But the areas worked do not necessarily correspond to the areas in possession, and often, a single farmer may be in charge of a number of family plots, or lease a parcel adjacent to his own. It is very rare for an individual producer to own properties larger than 10 hectares, which are most often owned by companies or producers' associations (INEI, 2012).

So, the main stakeholders in Lima's agricultural activity are small producers, whose total income is based on their operations. The food justice issue here is to guarantee these stakeholders fair incomes for acceptable working conditions.

Figure 1: Limited agricultural land



Source: INEI, Minagri, satellite images, (Robert, 2013).

By: Leloup, 2015.

2. Urban proximity and the resulting intensification of production systems

Since the 1990s, truck farming is the main type of operation in Lima’s vallis (Chillon, Rimac and Lurín) (Alternativa, 1993), combined with the hard corn used as silage for the poultry farms encircling the capital. The adoption of this type of farming creates more labour- and/or capital-intensive production systems (Leloup, 2012). The distances between the production places and the intended markets are shorter, which ensure product freshness and is an advantage for local producers over operators in the provinces. The operations are intensive with significant investment, particularly in inputs. Production, which is mechanized, is entirely focused on sale. Like the majority of the rural peripheries of large cities, farming in the area around Lima is independent of natural conditions and the operators “are not afraid to spend to

reverse the order of nature” (Philipponneau, 1956). Truck crops also have the asset of short growing cycles, on the order of 1 to 3 months. A mediocre harvest due to low prices or pests can be compensated for in the next crop.

Despite these assets, peri-urban agricultural production remains a small percentage of the overall truck farm products going through the wholesale markets (Anicama, 2010). Certain crops stand out as exceptions, however, like coriander (cilantro), for example, of which 68% of production comes from Lima. Or turnips and Swiss chard at 67% and 56% respectively (Minagri, 2013). All in all, a significant percentage of the production of leaf vegetables and aromatic herbs comes from the area within the limits of the Lima metropolitan area. The great diversity of productions in the peripheral areas should also be pointed out. As a matter of fact, 31 of the 37 main vegetables sold in the markets are grown there. This is the only region having such diversity. Analysis of agricultural statistics also shows that yields per hectare are overall higher in the Lima metropolitan area than in other production areas, implying more use of technology and greater intensification than in the rest of the country.

The proximity of Lima and a sizeable market therefore enables farmers to develop profitable and especially dynamic production systems. In particular, producers have been able to develop intensive systems, getting the maximum from the land (Trívelli and Boucher, 2003), thanks to which they can cultivate a large number of species. The city thus enables small producers to be more competitive in the market and to support themselves in an agricultural setting alongside highly capitalistic agri-food companies.

3. Marketing constraints that the city’s proximity doesn’t resolve

The vast majority of products grown on the periphery of Lima is intended for the city’s main wholesalers: the historic *La Parada* market downtown or the new Santa Anita market resulting from a market modernization policy (Hattemer, 2012). The most frequent marketing pattern is selling the harvest on the plot to a wholesale middleman who will take care of reselling it to the markets. Taking their lead from the provinces of Lima, a dependency relationship has been created between the producers and the merchants, with the middlemen occasionally financing a portion of

the agricultural season by supplying inputs or seeds (Bey, 1995). Farmers taking this route therefore do not take advantage of the city's proximity to realize savings on transport or the cost of intermediaries' mark-ups. This form of marketing is widely dominant: a study by the Lurín agricultural agency indicated that 82% of producers in the valley still operate by selling on the plot to the wholesalers. The role of these middlemen can seem restrictive a first glance, but the producers' opinions vary. Some perceive this system as a bargain enabling them to concentrate on production alone, and keeping them from having to take expensive trips to the wholesale markets. Others, on the other hand, would like to eliminate this middleman in order to have a greater mark-up, and condemn the lack of transparency surrounding access to the wholesale markets (Bey, 1995; Huaman, 1999).

The ever-current question of marketing agricultural products highlights the incomplete integration of producers on the periphery with the city. For the most part, they do not take full advantage of the opportunities their location on the periphery offers them, by implementing direct supply chains, for example. The predominant marketing methods bring injustices, with the wholesalers making a significant mark-up on the harvests, and thus diminishing the profit the producers receive.

From the time the land reforms were implemented and the hacienda system ended, the city producers' environment has continued to change radically; operating systems have been updated and the producers are dealing with the growing urbanization of their environment. Local food systems present many advantages, particularly with regard to pricing, that are likely to satisfy producers and consumers alike (Chiffolleau and Prevost, 2013). In the case of Lima, however, local productions do not bring better pay to the producers and products are lost in the many deliveries on the wholesale market. The producers are aware of their advantage compared to the farmers in the provinces and have established production systems adapted to urban demand. However, the nearness of production and consumption places still does not give producers or consumers access to fairer food systems. Beyond the geographic situation alone, genuine political organization emerging from civil society initiatives is necessary for establishing genuinely fairer processes.

II. Do initiatives driven by urban demand promote a fairer food system?

The production methods of Lima's farming valleys tend to change based on urban demand, to meet city dwellers' various needs ranging from the search for healthier food to the creation of connections with producers and the search for recreational spaces. Many initiatives stem from the urban context, and have the potential to re-balance the injustices of the system in place, particularly those injustices linked with indirect marketing.

1. Short supply chains for renewed contact between consumers and producers

Reducing, if not eliminating, the number of middlemen is often a priority objective of short supply chains. Conventional supply chains such as those put in place in the peripheral areas of Lima leave the producers little bargaining power (Heinisch et al., 2015). Proximity of producers and consumers is a means for maximizing the low volumes of a diversified production and to thus reduce food injustices tied to the producers' earnings. By the same token, the consumers are increasingly attentive to the quality of the products they buy, as well as the production and distribution processes (Amemiya et al., 2008). The producers try to distinguish themselves from one another in order to meet consumer expectations. This phenomenon occurs in Lima, too, where the quality of food is of increasing concern among residents. For the last ten years, Lima's residents have been seeking healthier food hand-in-hand with the ongoing countrywide "gastronomy boom" (Matta, 2010). Obesity has recently become a major concern with the national obesity rate for adults reaching 62% in 2012 (Minsa, 2012).

To meet this dual objective of reducing economic injustices and production differentiation, since the early 2000s, farmers' markets called "*bioferias*" have developed, offering the direct sale of "organic" products. For the most part, these products are locally-sourced and certified organic only in some cases, but meet the demands of consumers seeking a healthy diet, food that is respectful of the environment and socially responsible (interview Silvia Wui and Gomez and Morales

2012). These direct sales at farmers' markets are becoming increasingly successful. The first *feria* was created in 2002 in Miraflores; today there are 8 spread over various districts of the city (see Figure 1).

The role of local authorities varies in the creation of these markets. The Cieneguilla market was thus created solely thanks to the perseverance of a small group of farmers. However, the support of local politicians is often essential for maintaining the markets over the long term. Establishing the *ferias* requires the agreement of municipalities in order to occupy public space, financial support and the occasional loan of equipment. Inaugurated in July 2014, the downtown Lima feria was created in partnership with a city of Lima program: "*Mi huerta*" ("my vegetable plot"). However, the change of the city government has called this market's long-term survival into question. In 2015, the "*Mi huerta*" program was discontinued and the market dissolved, despite its success with consumers (according to the organizers).

Figure 2: Miraflores *bioferia* stall



Photo: H.Leloup, 2013.

Farmer-driven initiatives have also been identified through which producers sell directly to restaurateurs, specialized businesses selling organic products, or through direct sales at people's homes. In this case, too, the neighbourhoods in Lima able to take advantage of this type of distribution are limited. These are the districts where

the most prestigious restaurants are located and the population is well-to-do: Miraflores and San Isidro mainly; Surco and San Borja to a lesser degree. These are the same districts where the *bioferias* take place every week.

The *bioferias* charge prices that are good for the producers but high for the consumers, which restricts access to certain classes of the population only. The same holds true for sales at home. In both cases, the prices are higher than those in the covered markets and most supermarkets. These new commercial supply chains therefore make it possible to offer new consumption alternatives to well-off populations by offering them more accurate tracking of the product's origin, but a large segment of the population remains outside these consumption spaces due to geographic distance or prohibitive prices. Figure 1 clearly illustrates the concentration of the *bioferias* in a limited section of the city, near the central coastline. The districts located in the north of the city are not concerned with the establishment of these types of markets and their residents have to travel long distances if they wish to go to them.

Although short supply chains help to re-create justice for the producers by offering fairer payment, they are exclusionary for the poorest consumers and those living in the periphery, far from the city centre.

2. Farm gardens: spaces created by and for urbanites for providing food security

Lima's growth starting in the 1940s and up until the last decade, was fast and anarchic (Metzger et al., 2014). Like Cairo, "the urban front advances steadily, forming a continuous urban mass with few detached built spaces and few free spaces within" (Tricaud, 1996). Many of Lima's neighbourhoods therefore suffer from a lack of public green spaces and have high-density populations.

To remedy this situation, the inhabitants of these neighbourhoods devote themselves to greening their environment by growing plants in the interstitial spaces left vacant by government authorities. Often, these are ornamental plants, helping to brighten up the neighbourhoods, but shared gardens have also been created for growing vegetables, allowing the residents to grow produce for their own consumption. They

are mainly created on vacant publicly-owned lots that are often full of rubbish. As in other cities of the South (Poulot, 2013), agriculture in these spaces is used for adding some green to the city and “making it tolerable”. By way of an example: in 1993 the Comas district had a density of over 8,000 inhabitants per km², and the Villa El Salvador district over 7,000 inhabitants per km² (INEI, 1993). By 2012, these figures had increased considerably with Comas and Villa El Salvador showing densities of 10,723 inhabitants/km² and 12,800 inhabitants/km² respectively. Figure 3 gives a general idea of the environment these gardens are in: surrounded by dwellings, they are often the only green spaces in the neighbourhoods.

For the inhabitants of these modest neighbourhoods, which may or may not be part of a development plan, gardening is a pastime and not a means of subsistence. The residents refer to the garden as an attractive place in the neighbourhood and feel that it helps reduce their stress. It is a source of personal satisfaction, particularly because of the work undertaken to rehabilitate the land. Agriculture becomes enjoyment. Both men and women take part in urban gardening but the projects are primarily the work of women. The activity becomes an opportunity to increase the amount of food available to families as well as providing control over its quality (Smith and Trivelli Avila, 2001). By growing their own vegetables, families reduce their weekly expenses. If there are surpluses, these can be sold for extra income. This is done either directly on the plots with the neighbourhood residents coming to buy the produce for immediate use, or the growers can also go to their local markets, improvising spots often right on the ground. The growers count on their personal networks to be recognized among the population as local producers. The agricultural activity thus better enables them to be part of life in the neighbourhood. The network RAE (*Red de Agricultores Ecológicos Peru*, i.e. Organic Farmers’ Network of Peru) which supports small-scale agriculture in Peru by encouraging environmentally-friendly practices, also hopes to increase the appreciation of the crops from these shared gardens. Thus, from July to December 2014, the gardeners of Comas were able to sell their produce at the downtown *bioferia* on a weekly basis.

Figure 3: Shared garden in Comas



In the foreground, various horticultural plants: celery, Swiss chard and fennel. In the background, residential area of Comas, suburban area north of Lima (Photo: H.Leloup, 2014).

The produce gardens therefore make it possible for a population with limited income to have access to a variety of fresh products, deemed to be high quality and good enough to be sold in the city produce markets, which generally target higher class populations. By producing for the gardeners, on the one hand, but also for their immediate neighbours, the community gardens contribute to greater equity with regard to access to fresh products. The urban gardens make it possible to respond to the two-fold issue of quantity and quality, simultaneously ensuring better food accessibility and more dietary diversity. A link can be found between the example of Lima and what is seen in the United States and Canada where community and collective gardens are increasingly successful. Created mainly in poor neighbourhoods of large cities, they simultaneously respond to problems related to a lack of distribution infrastructure for fresh products, but also play an important role in the social insertion of marginalized populations (Colasanti et al., 2012; Duchemin

et al., 2010; LaCroix, 2010). Thus, urban gardens fully contribute to the establishment of fairer food systems.

This phenomenon also illustrates the ability of populations to take charge of their daily lives, to improve their standard of living and the environment in which they live. This capability can be associated with the history of neighbourhoods, which are frequently self-built (Wagner, 1988). The development of community gardens is therefore consistent with residents' involvement in their neighbourhood's urban projects.

The city has the potential to inspire initiatives promoting agriculture that pays its stakeholders better, based on the demands of urban populations. For the most part, these initiatives are driven by civil society and the government or city policies only play a secondary regulatory role.

However, these initiatives do not appear to be open to everyone, whether producers or consumers. To grasp the importance of such initiatives in the daily lives of Lima's population, the options for access to these short supply chains by the greatest number should be examined.

III. The producers' organization: a condition for access to the urban market

The location of agricultural spaces on the city's margins, whether commercial plots in the periphery or shared gardens, does not prevent the stakeholders from implementing creative initiatives suited to their immediate environment. If urban agriculture is properly connected to city markets, it has the potential to provide greater earnings than activity in the rural environment because the middlemen can be eliminated.

But access to these networks remains limited to a minority. These new opportunities offered by proximity agriculture exacerbate the inequalities.

1. Producers in the city are unequally integrated depending on which valley they are in

The farmers' and organic food markets (*bioferias*) with limited spaces, bring the risk of creating multi-tier agriculture: one that is integrated with the city and has the advantage of institutional support, and another continuing to take more traditional marketing routes, without technical and/or financial assistance.

Many producers apply for access to the *bioferias*. Producer associations and organizations have the advantage; there are no individual producers in this type of market. Producers gain access to the market through the RAE (Organic Farmers' Network). This network originally created the *bioferias* and this same network selects the producers. It especially supports small-scale family farm operations and does not support the commercial farmers in the periphery, which were described above as independent business people, working on larger plots. These producers have been able to create their own supply chains over time for getting inputs and seeds, and hiring day labourers, but also for marketing their harvests. They are therefore in contact with a multitude of stakeholders up- and down-stream from production but have very little contact with other producers. This lack of contacts can cause problems, such as the over-representation of a crop on the markets, which can cause a drop in the price.

This trend towards isolation must, however, be qualified. In the Lurín valley, farmers have formed groups. Their objective is two-fold. By becoming partners, the producers are trying to organize better among themselves so that productions are optimally distributed between operations and in time. The second objective of the groups is to enable producers to join forces to respond to pressure on the land that they are subject to due to Lima's growth. They want to have some influence in municipal policies. Although the sale of land proves to be very profitable in the current context, the producers are staying the course and have no immediate plans to sell their parcels. While the producers created these groups, the support of local institutions such as the Lurín valley farm bureau or the valley's irrigators' commission has also been instrumental. There are other stakeholders in the area whose purpose is to add value to local agriculture and preserve "Lima's last green valley". Accordingly, the RAE

network gives priority to these already organized groups. The same holds true for the NGOs, which have more ability to set up educational workshops in settings where producers are already brought together.

The area south of the city has more advantages than the other valleys. It has the greatest concentration of farmland in the city and has a well-off population that is involved in conservation of the valley. This means that a body of stakeholders supports the farmers: the associations and NGOs that struggle against illegal urbanization but also the residents themselves who appreciate the rural countryside created by the plots being farmed. The producers have easier access to technical supports for forming groups. These groups then facilitate access to the direct supply chains. Conversely, the producers in the northern and eastern valleys seem less integrated into the city's systems and have less influence in dealing with urbanization, particularly of the illegal variety.

2. New opportunities for previously isolated agricultural territories

The city's impact extends beyond its administrative peripheries; the neighbouring provinces are also experiencing changes related to the proximity of the urban market. Land speculation, more exchanges between the city and the provinces that border it, and expansion of the market are a few examples of these new dealings between Lima and the nearby countryside.

An expanded area of influence for the agglomeration comes along with the phenomenon extending the urban areas ever farther into the peripheral areas. On the one hand, speculation on farmland affects the most remote valleys: Huarochiri, Huaral and even Cañete. As a matter of fact, many of the producers questioned in the peripheries near Lima shared their future plans to sell their land in order to purchase a new plot in these provinces. Due to urban growth, the value of the land they cultivate today has increased greatly, and can exceed \$100 per square metre. The sale of several hectares of land in the periphery can make it possible to buy a much more sizeable piece of land in Huaral or Huarochiri. Relationships can be strong between the peripheries and these adjacent regions, and the ties more direct and numerous than between the peripheries and the rest of the city (Calderón, 2009). The strength

of these relationships can be confirmed by means of the knowledge that the producers have of these spaces. The producers in the peripheral areas more frequently go to the neighbouring regions than to downtown Lima and consider these areas hubs, and more specifically, potential areas for jobs. Similarly, the centres that have developed in the peripheries attract populations from the neighbouring regions. This is the case, for example, of km 22 in Carabayllo, and the junction of the pan-American and Tomas Valle Avenue in Lurín. These two places have become local key areas, particularly for farming and livestock as there are shops specializing in the sale of inputs and veterinary products, farm bureaus, and irrigator groups. They attract producers from both Lima and more remote regions. These producers, who were formerly outside the agricultural hubs, take advantage of the city's advance to reduce the imbalances compared with Lima's producers and to create a fairer farming environment.

Paralleling the production primarily of vegetables found in Lima, fruit farming (strawberry, clementine and apple productions are significant compared with the rest of the country) is the specialty of the surrounding provinces. As is observed in the city, yields per hectare tend to be higher than in the other provinces (Minagri, 2013), implying intensification of operations and a higher degree of technology, perhaps due to the proximity to the capital.

Finally, these provinces are also able to supply Lima's new markets. As a matter of fact, a number of the producers for these markets are originally from Huarochiri and Cañete, which testifies to the development of a new proximity between these provinces and the capital. The dynamics of the capital therefore enable these provinces to develop new production systems and make them more competitive.

These types of observations highlight the ambivalent nature of producers' integration with the city: the producers in the nearby peripheral areas can be excluded from new markets while producers from farther away can be integrated. Once again, it is first and foremost the producers' organization that determines the establishment of fairer production systems for both producers and consumers alike.

Conclusion

The objective of this article was to demonstrate that urban and peri-urban agriculture could make fairer access to food possible. This role is partially fulfilled to the extent that direct sale initiatives are developed enabling consumers to expand their choice of food through the *bioferias*, in particular. But the supply is not uniformly distributed throughout Lima's territory and many of the city's neighbourhoods do not have this type of infrastructure. Although alternatives exist, particularly through community gardens, they remain limited. Moreover, the vast majority of the city's producers do not have access to direct sales markets. The urban market via short food chains primarily benefits organized producers. The RAE network plays a key intermediary role in Lima providing links between the small-scale producers and the well-to-do residents of the capital. Similar to what is observed in the rural spaces of the Andes, "local multi-stakeholder alliances", built around peasants, are what allow short food supply chains to be established and developed (Heinisch et al., 2015). In countries of the North, this networking is proof of the success of short supply chain systems (Hochedez, 2008). Lima, like many cities in the North and particularly in France², is renewing its links between consumption spaces and the territories which supply them, thus creating new spaces for dialogue (Chiffolleau and Prevost, 2013).

However, for the time being, the effect of these urban initiatives and producer organization appears limited. Many producers remain outside these supply chains and are faced with the degradation of their production environment. In countries of the North and South alike, short supply chains currently show modest results with regard to producer support and access for the most disadvantaged populations (Mundler, 2013). The systems established through proximity to the city are not within everyone's reach. In Lima, needs for buildable spaces remain significant, because the city continues to spread due to the population's natural growth. The role of agricultural land in Lima is still uncertain, between the reserve of land intended for urban expansion, as frequently observed in cities of the South (Dabat et al., 2006), and common property able to generate food justice.

² The association "Terres en ville" offers many examples through research available at www.terresenville.org.

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