

Have Private Supermarket Norms Benefited Laborers? Lemon and Sweet Citrus Production in Argentina

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ABSTRACT *It has been assumed that the high cost of phytosanitary requirements in northern countries and of the certification required by commercial chains negatively affects the earnings of laborers. Using case studies of two citrus industries in Argentina, a middle income country, we argue that field laborers can profit from good agricultural practices and from the more orderly managerial practices demanded by certifiers. Producers also re-evaluated the transaction costs of cheap labor practices after becoming aware of the importance of responsible performance. We also note that producers granted wage increases only after the unions threatened to strike and that higher wages did not pull laborers out of poverty since in counterseasonal horticultural export industries the period of employment is usually short.*

Se asume que altos costos de los requisitos fitosanitarios y certificaciones requeridas para exportar a países del norte afectan negativamente los ingresos de los trabajadores en países productores. Datos recogidos en dos industrias cítricas Argentinas, un país de ingresos medios, nos permite aducir que los trabajadores se han beneficiado con la introducción de las buenas prácticas agrícolas y reorganización de la gestión, requisitos necesarios para exportar a países del norte. Estos cambios han impulsado una re-evaluación de costos de transacción de mano de obra barata y del valor de tareas ejecutadas con responsabilidad, que se tradujeron en salarios más altos pero solo después de amenazas de huelga. Estas mejoras no lograron sacar a los trabajadores de la pobreza, ya que el período de empleo es de corta duración en la mayoría de las industrias frutícolas de exportación.

Introduction

Debates about changes in the retail and wholesale chains of importing countries lead to questions about how they affect the well being of laborers. Critics assume that the added costs of meeting the new certifications that are now required by powerful retailers will be passed down the commodity chain and will be absorbed by the most vulnerable participants, small farmers and laborers. There is no question that the added costs are problematic and may explain the exclusion of peasants and small family farmers from global markets. But critics' arguments fail to explain why agricultural laborers working for export industries often earn higher wages, as is the case in the two citrus industries of this study (lemons and sweet citrus). Furthermore, in their arguments critics depict producers and laborers as passive respondents and disregard the role of political institutions and associations in addressing, advocating and protecting vulnerable actors. Critics' line of reasoning is also based on simplistic and overly structured depictions of the production, export, and distribution of fresh horticultural produce that disregard the cost of controls set by importing states (phytosanitary norms) to protect their own producers from the economic impact of new pests. In the next three sections, we outline the significant commercial changes in importing countries. We also review critiques and counter critiques of demands imposed on foreign producers and outline the procedures required to meet phytosanitary (plant health) and retailers' certifications (i.e., Eurep-GAP). It will become clear to readers that the impact of retailers' certifications cannot be evaluated without considering also the demands imposed by phytosanitary regulations. It should also become clear that, at least in countries with established exporting experience, the proliferation of certifying firms is unlikely to dislodge the regulatory role of public agencies.

In the last two sections we recognize that the new exigencies (European phytosanitary norms and Eurep-GAP norms) have led lemon producers to invest in cost-cutting technologies and management practices in order to position themselves as important suppliers to the European Union. But these demands initially discouraged sweet citrus producers, who faced more stringent economic conditions, from participation in global markets. Some of the new technologies and management practices that lemon producers adopted have served to highlight the transaction costs of cheap labor policies and have encouraged producers to favor more experienced and responsible workers. Among the first producers to respond were agronomists, younger managers with some business or academic training, and those who escaped the legacy of social practices infused with authoritarianism. These managers were willing to negotiate with laborers, offer incentives, and enter into partnerships with other producers. However, not all producers were keen to re-evaluate their practices and risk investments, particularly when they could sell their fruit in the national market, as was the case for sweet citrus producers.

Our argument has certain caveats. It applies to laborers in countries with considerable exporting experience and an infrastructure of institutions in agricultural research and services. Furthermore, in the two industries here discussed, laborers received limited benefits only after their union threatened industrial action. Most of the fringe benefits that laborers are entitled to receive date back to past political struggles and have been codified in Argentine labor legislation. Furthermore, the two most prominent norms demanded in the European market, phytosanitary entry regulations and Eurep-GAP norms, offer little guidance to producers in matters related to the labor process. The norms say nothing about 'fair wages' and only indicate that producers must conform to national labor legislation.

Argentine Citrus Exports and European Safety and Quality Standards

Prior to 1970, most of the fruit produced in Argentina was consumed nationally or processed and exported as juice, oils and dehydrated fruit or peel. It was not until the 1990s that counterseasonal production of fruits for export took off. Argentina became the fifth most important exporter of pears, followed by lemons, apples, and the tenth exporter of sweet citrus (oranges and tangerines). As Argentina began to demonstrate signs of economic stability and global demand for fresh produce increased, producers responded by increasing output. In 2004, Argentina became the second major global exporter of lemons and the third most important exporter of pears; other fresh fruit trailed behind. The dynamism of the fruit sector was facilitated by Argentina's established network of service, information systems and research centers. But the export of fresh fruit over long distances is risky and logistic problems had to be resolved. Lemon producers, who became dependent on their foreign clients, were the first to try to reduce exporting problems by improving quality of fruit. Sweet citrus producers followed their example in recent years.

These developments were accompanied during the middle of the 1990s by a reorganization of commercial chains in European countries. Mindful of consumers' growing concerns about the environment and food safety, supermarkets began to shift from a cheap food sourcing strategy to one that would gain the trust of food shoppers without affecting supermarkets' profit. In 1997, supermarkets jointly embarked on the design of a production standard reflecting consumers' concerns (Dolan & Humphrag, 2000). The new standard, which became known as Eurep-GAP, did not come into full effect until 2004.

At about the same time, the European Union (EU) shifted from a trade barrier system of controls to a complex but flexible tariff system and tighter phytosanitary controls (Diopp & Jaffee, 2005; Henson & Jaffee, 2006; Henson & Loader, 2001). The tariffs were designed to control the inflow of cheaper imports by linking the tariff rate to the wholesale prices of the imported fruit. Argentine producers and exporters discovered that it was unprofitable to compete with low quality cheap fruit (Diopp & Jaffee, 2005). Over the years, the phytosanitary controls have become progressively more onerous and hard to surmount. Although these controls were originally designed to protect crops in importing countries from new infestations, phytosanitary controls are often used to shield producers from foreign competitors.¹

The EU market was too important to ignore (Table 1). Producers' associations and government agencies were mobilized to negotiate counterdemands and to devise strategies and guidelines to cope with the new export obstacles. Orchards were redesigned, new varieties were introduced, and producers invested in new harvesting systems. Packers continued to expand capacity and updated their equipment. In the province of Tucumán, where 88% of the Argentine lemons are produced, the major vertically integrated firms were the first to respond to the challenge. In the province of Entre Ríos, where about 52% of Argentine sweet citrus is produced, growers were slower to respond. At first only the financially well-endowed growers and vertically integrated packers invested in orchard and packing plant improvements. Since then, others have followed suit and fresh sweet citrus exports began to grow.

By 2001 producers, packers and the Citrus Association of Tucumán became convinced that it was important to compete only with high quality fruit and to seek certification as a potential supplier of European supermarket chains. However, certification is an expensive, slow, and protracted process. By 2004, only the five large vertically integrated lemon producing firms and seven smaller independent firms in Tucumán achieved Eurep-GAP certification. These firms handle nearly 80% of the fresh lemons exported, of which 68% were sent to the EU.

Table 1. Production and export to European Union of lemons (Tucumán) and sweet citrus (Entre Ríos), in metric tons

Fruit	2001			2006		
	Total production	Exports EU	Exports other countries	Total production	Exports EU	Exports other countries
Lemons	1,150,000	151,036	148,295	1,316,300	176,020	138,631
Sweet citrus	727,072	n.i.	n.i.	708,915	53,197	103,964

Note: Information on lemons from ATC; information on sweet citrus from INTA-EEA Concordia, Entre Ríos.

In Entre Ríos the six vertically integrated sweet citrus firms and two producers' consortiums received Eurep-GAP certification. Other independent packers may soon be certified. All noncertified firms have to sell the fruit they export either to old clients or through wholesale markets or ship it to countries outside of the EU.

Critiques of Regulations and Standards

Objections have been raised about the impact of the cost of compliance with phytosanitary and Eurep-GAP norms and the documentation required to prove it. To enter European ports shipments must be accompanied by an official document drawn by a state agency competent to evaluate sanitary and pest contamination risks. In countries, like Argentina, with wide networks of state agricultural research and extension services, farmers bear a small fraction of the cost of monitoring infestations and granting phytosanitary certificates. But the critics' major concern is the potentially high cost of Eurep-GAP certification, since this organization only accredits independent private sector firms to become their certifiers; few of these firms are not-for-profit firms.² Critics also note that Eurep-GAP certification costs are highest for producers in poor nations with inadequate infrastructure (Busch, 2005; Henson & Jaffee, 2006; Henson & Loader, 2001). Although Argentina has had a national not-for-profit accrediting institution since 1935, Eurep-GAP certification fees are unaffordable to small producers. Furthermore, the fees represent only a small part of the total cost entailed. Firms and farmers must also pay for periodic audits and certification renewals. Farina and Reardon (2000) argued that in some cases the newly required agricultural practices increased production cost above the improved revenue. However, it is difficult to document which one of the added costs relate to newly required investments or to inflationary trends.

Researchers have expressed concern that private sector certifying firms, which are focused on profit rather than social issues, may slowly encroach on the regulatory activities of public agencies. While this could be a serious problem in countries with weak economies and government institutions, it is not the case for countries with growing economies and established exporting experience (Henson & Jaffee, 2006). In the latter, private and public agencies collaborate in the training of controllers and jointly design solutions to technical requirements. Moreover, the governments of Argentina, Chile, Costa Rica, and Mexico are trying to build international confidence in their exports by establishing national norms and certifications. But harmonization of competing private norms and between private and public norms has yet to be achieved.

One of our major concerns is that even when private norms attempt to address the plight of laborers in the horticultural export industries they do so only superficially and often with misguided universal solutions. The norms are often based on the ILO convention, which despite its intrinsic value, fail to capture local conditions, social tensions and obligations, and cultural perceptions in specific horticultural exporting regions (Aparicio, 2007; Dolan, 2005; Du Toit, 2002). To be effective and fair, national representatives of labor organizations and relevant government agencies should participate in the design of the norms whenever they affect the rhythm of work or risks faced by workers.

Implementation of Phytosanitary Requirements and Retailers' Norms

In this section we review only the phytosanitary norms that must be complied with to enter the EU and the certifications required by most supermarket chains (Eurep-GAP, HACCP, and Traceability). These requirements define the agricultural practices used to produce most of the lemons grown in Tucumán and sweet citrus for export produced in Entre Ríos.

As we examine certification procedures it will become clear that public institutions are not marginalized; quite the contrary, public institutions have been forced to protect the competitiveness of national exports in global markets. Furthermore, phytosanitary certifications and controls, although mostly handled by a government agency, involve the collaboration of producers' associations. However, small producers and labor organizations are notoriously absent from any deliberations.

The review of the certification process serves to identify other positive unintended consequences for laborers. The documentation required of producers has made clear to them that harvesters as well as qualified permanent laborers play a significant role in the creation of value added. It has served to alter producers' rhetoric about quality incentives and responsible labor and to consider the financial disadvantage of cheap labor strategies.

Norms Regulating Agricultural Practices within Orchards

Since the year 2000, SENASA has assumed responsibility for registering and inspecting all orchards to insure that fruit for export meets the phytosanitary standards demanded by importing countries. In Tucumán orchards covering 28,829 hectares are now registered for export to Europe (about 80% of total hectares). In Entre Ríos, however, only 1,000 hectares have been registered. SENASA now requires registering producers to include a map of each of the exporting orchards, listing the particulars of each of them, including buildings and roads. Once registered, the orchards are inspected to determine if there are signs of insect infestation and presence of unwanted pathogens. In a separate booklet, producers must list and document the treatments that are applied throughout the season to control insects and fungus, acreage of orchards, the variety and species planted, number of trees, date of harvest, volume of fruit harvested, and estimates for the forthcoming season. Producers must ensure that shoes, wheels, hands, and all instruments that come in contact with the fruit are disinfected upon entry to orchards and that only relevant personnel are granted entry. They must also make sure that no plant debris remains in the groves. SENASA inspects the farms once again before the harvest to determine the effectiveness of disease controls. These reports are reviewed by SENASA before an export permit is granted. The information is then passed to the packing plant and is included in the records that must accompany each shipment. SENASA's chemical treatment recommendations are constantly updated to reflect changes in EU's list of tolerable products and changes in the

phytosanitary conditions of the region. These treatment recommendations are drawn in consultation with other competent regional organizations.³ Furthermore, they have to be altered when phytosanitary barriers fail to control the entry of pathogens.⁴

In 2001, the European association of retail chains empowered a council to design and set the terms for an ongoing review of agricultural practices to be required in the Eurep-GAP normative. In 2004, this normative became an imperative to access their commercial chains. Tucumán producers were prepared since discussions about the design of the normative had already started in 1997 and the registration of orchards was already in place. SENASA, the Association of Citrus Producers (ATC), and all accredited certifying institutions began to organize training seminars. In Tucumán, the private Research Center Obispo Colombres responded by setting up a laboratory capable of monitoring the presence of pesticide traces on the fruit ready for harvesting. Eurep-GAP organized a working group in Argentina to help coordinate with local authorities, to promote harmonization of norms and the passage of required legislation. The group included representatives of relevant government organizations and associations of fruit producers (www.alcuefood.org).

However, only accredited private agencies are allowed to certify producers and packers. In the case of the Tucumán lemon industry, producers can choose amongst four agencies. Applicants must submit information similar to what SENASA requires for export certification. The certifying agency evaluates the information and makes its recommendations. It might take from six months to a year before a producer receives the needed certificate, as the agency has to inspect the orchards to determine the conditions and conformity with recommendations. Initial fees are too high for smaller independent producers and have to be renewed every few years. To reduce these costs, producers are offered the option of forming associations or consortiums and applying for certification as a group. It is unclear how many of the independent producers are taking advantage of this option, but in Entre Ríos there are two consortiums of producers, one with 25 members.

The Eurep-GAP normative builds upon the phytosanitary requirements of the EU but focuses on how to attain them while using good agricultural practices and careful disposal of hazardous substances. For example, it allows soil fumigation but only when necessary, passing the burden of proof to the producer. It also insists on certified root stocks in Tucumán, a task that is being assumed by Obispo Colombres Agricultural Research Center. In order to protect the environment and the health of consumers, Eurep-GAP norm recommends minimal and appropriate spraying of chemicals already approved by the EU. It stresses the role that laborers play to maintain good agricultural practices and food safety by insisting on the training of harvesting personnel. The Eurep-GAP normative also shows a concern for environmental degradation, clearly expressed with the addition of new requirements in the 2007 update: the evaluation of energy and water use efficiency, an assessment of nonchemical pest controls, the identification of sources of pollution, and conservation plans for unproductive areas.

The Eurep-GAP normative includes requirements other than a reduced use of chemicals, which enhance both sanitary and labor conditions in the field: mobile toilets, safe and healthy working conditions, and, when necessary, habitable onsite quarters. Producers must insure that laborers receive safety training in the use of equipment and that emergency procedures in case of accidents are clearly posted. Laborers must also be trained in the use and disposal of chemicals and be issued protective clothing, goggles, and respiratory equipment when necessary. Accrediting institutions should record information on all workers and subcontractors and evaluate overtime regulations and conformity with local labor laws and contractual agreements with labor representatives. But noncompliance does not affect certification.

Norms Regulating the Operation of the Packing Plants

The added cost of producing fruit for the EU culminates in the packing process. In some cases buildings had to be reconditioned to provide adequate storage facilities, separate lines for the fruit going to different markets, lunch rooms for laborers, adequate toilets, showers, towels, and locker rooms. Constant sanitation of premises, upkeep of dedicated lines, and provision of appropriate clean garments for line workers can also be costly. Additionally, there is the cost of qualified supervisors, inspectors, and the training of all personnel.

Installations used to pack fruit exported to the EU must be inspected and certified by SENASA. Inspectors trained by this institution have to be present to supervise ongoing operations. SENASA must also inform packers about their orchard's reports. When the fruit arrives at the plant it must be disinfected and stored in sanitized facilities to prevent contamination. While traveling through the belts, the fruit is sanitized, washed with potable water, and waxed to protect consumers, eliminate spores, and avoid contamination in transit. The packing process is structured to exclude low quality and contaminated fruit, which is redirected to industrial plants, and to grade the fruit by quality standards. This task is performed by experienced sorters and/or high technology. The process is also structured to isolate fruit intended for the EU from fruit for other markets. Once boxed, inspectors determine whether or not the fruit meets the standards required by the intended export market. Boxes rejected by inspectors because they show some damaged fruit may be sent to less demanding national markets. The boxes destined for the European Community are then piled on pallets, which, since 2005, have to be made of certified wood.

Traceability from Farm to Store

Since 2005 all pallets arriving in Europe have to be accompanied by documentation about agricultural, packing, storage, and transfer practices of fruit based on carefully kept records. The certifications granted to producers and packers must also be included as well records of controls at port of exit and arrival. This bar-coded information helps trace shipments when they have to be recalled and offers a lot of data about production and packing practices which will eventually become very accessible to suppliers.

The Lemon and Sweet Citrus Industry

Seen from the great port of Rotterdam or the aisles of Tesco and Carrefour, producers in the far south blend into generalized schemes of commodity chains. Such images fail to capture the range of technical and sociopolitical forces that determine production and labor management strategies. They also fail to fully capture the characteristics of units of production and the forces at play in the competition to participate in the export market. The contrasts between the lemon industry of Tucumán, in the northwest region of Argentina, and the sweet citrus industry of Entre Ríos in the northeast region demonstrate a wide range of responses to changes in export trade. Some of the firms have certified their orchards and packing plants. Others, instead, have concentrated on industrial processing or the national market. It is a choice that relates to how they manage to position themselves in the exporting chain and their own entrepreneurial visions (Table 2).

Our case studies suggest that production and management adjustments are delayed when either less lucrative, demanding national markets are available or when the fruit can be gainfully

Table 2. Production and destination of lemons (Tucumán) and sweet citrus (Entre Ríos)

Year and fruit	Production (tons)	Destination of harvested fruit (%)		
		Total exported	National market	Industry
Lemon				
2001	1,150,000	22	5	73
2004	1,270,000	29	1	70
2006	1,316,300	26	5	69
Sweet citrus				
2001	727,072	13	62	25
2004	575,945	22	61	17
2006	708,915	22	62	16

Note: Information on lemons from ATC; information for sweet citrus from INTA-EEA Concordia.

industrialized. Vertically integrated firms that export their own fresh fruit are the first ones to seek certification. Next in line are the consortiums of producers that pack for export or packers that are linked to exporting firms. Since only the laborers working in certified orchards or packing plants are likely to profit from the Eurep-GAP norm, we focus here only on producers who send fruit to Europe.

The Lemon Industry in Tucumán

Lemons (*citrus limonium*) have been produced in Tucumán since the beginning of the twentieth century and were first exported to Europe in 1973. But export activities gained significance only when the demand for fresh fruit in the national market shrank during the 1990s. Since then they have aimed to position themselves in key niches within the commodity chain to the European market. To do so, producers began to expand orchards and improve management practices to cater to export-market demands, doubling the productivity per hectare between 1988 and 1999. Producers also felt that they had to continue to reduce costs by becoming less dependent on permanent laborers who were unionized and received many fringe benefits. Growers evicted resident laborers, terminating their contracts and hiring seasonal laborers in their place, initially through ‘fake labor cooperatives’ and later through labor contractors (Ortiz & Aparicio, 2006a, 2007). While these solutions cheapened the cost of laborers, it also meant a loss of control over performance. About half of the fruit produced for export during the decade of the 1990s never made it to the packing plants because it was harvested either when climatic conditions were inappropriate or was carelessly cut and poorly handled and transported. The discarded fruit was sent to industrial plants. Cheap, fast, and irresponsible labor was a good strategy when the prices of juice, dehydrated peel, and oil were rewarding. But that changed after 1997.

It was also a feasible strategy before the laborers organized effective protests and were able to negotiate collective agreements. In 1991 the Argentine Union of Rural Workers and Stevedores (UATRE) represented citrus laborers in their negotiations of a new industry-wide collective agreement. The union’s counterpart was not the labor contractors but a committee of representatives from the vertically integrated firms, smaller farmers, and packers. This committee was

selected by the ATC and represented a formidable block for UATRE to counter. UATRE did not manage to extract wage benefits during the negotiations, or gain compliance with existing labor laws. When in 1994 the two parties failed again to reach an agreement, laborers went on strike with protest spilling over to the streets. The strike ended in partial success but only after the governor of the province intervened. Laborers gained a small wage raise and the right to be transported in buses instead of crowded and dangerous trucks. After this confrontation the union turned less combative, limiting its efforts to ensure compliance with labor laws and the collective agreement.

By 2000, high quality became the driving call of the Association of Citrus Producers of Tucumán (ATC). The industry was then controlled by four vertically integrated firms which owned 52% of the land planted in lemons, packed and exported 62% of the fruit that was sent to Europe, and processed 88% of the fruit that was industrialized. Since then there is a new vertically integrated firm. These five firms have storage facilities, packing plants, and factories and have Eurep-GAP certifications. Smaller independent packers, most of whom also have their own orchards, handle 27% of the exported fruit. The rest is handled by exporting firms, seven of which have Eurep-GAP certification. The major goals of the vertically integrated firms and well-endowed producers have been to improve orchard conditions, harvesting systems, and transport methods in order to reduce the percentage of infested or damaged fruit. Accompanied by agronomists, they traveled across the globe to observe new practices and technologies. Nurseries were expanded, orchards renovated and redesigned. Trucks were replaced by tractors with trailers and eventually by bins next to the tree where laborers cut the fruit. The large firms also set up their own laboratories and increased the number of qualified technicians. Packing plants were also upgraded with optical scanners and other labor-saving technology.

Technological solutions helped to improve fruit quality but the percentage of discarded fruit was still high and during some years the loss could not be absorbed by industrializing the fruit. Some of the more creative large firms and even smaller independent producers invested in more training of laborers, managers, and supervisors, organized problem-solving workshops, and offered incentives to laborers for quality performance (Ortiz & Aparicio, 2006b). Harvesters working in the orchards of these firms responded positively but still felt that they were not fully rewarded for responsible performance. Managers were still adamant that they could not afford to accord higher wages as production and exporting costs were rising.

When in 2002 Argentina defaulted on its debt, the value of the peso dropped and the real value of wages plummeted. The union regained its political power in 2003, as President Kirchner moved away from neoliberal policies and enforced supplementary payments to ease escalating poverty. In 2005, the union once again took a strong stance during negotiations of a new collective agreement. Eventually the union walked out of negotiations and ordered laborers to block the major highways that served as conduit for transporting lemons to packers (Rau, 2006). Although the union was only able to obtain a third of the increase in wages it had demanded, when compensatory payments decreed by federal government were added, it brought the real wage above what laborers received under the previous collective agreement. We suggest that this first significant success of the unions also rests on the large firms' awareness of the role played by a responsible, experienced labor force in the attainment of fruit meeting quality and safety standards. This awareness emerged while growers reviewed data they had compiled to satisfy requirements set by SENASA and Eurep-GAP (see next section for details). Since then inflation has eroded earning gains but the union was able to negotiate a 12% wage rise in April 2007 and a 27% wages rise in April 2008. The new increases are in line with those granted in other industries and may represent small gains for citrus laborers.

Sweet Citrus in Entre Ríos

Until 1971 all of the oranges (*citrus aurantium*) and tangerines (*citrus nobilis loureiro*) produced in this province were absorbed by the national market. With the opening of global markets, Pindapoy SA, a once leading regional firm, began to export fruit (Tadeo, 2006). However, unlike Tucumán, the economic policies of the 1990s had a counter effect on this region. Producers also had to sustain a shrinking national market and climatic disasters that destroyed many orchards and brought farmers close to bankruptcy. Orchards deteriorated and exports decreased. It was not until 2002 that the sweet citrus industry managed to reactivate exports, in part due to the influx of investments from firms from Tucumán and neighboring provinces. Producers invested in orchards and equipment but not to the same extent as in Tucumán. They also reduced the number of permanent laborers and continued the practice of hiring occasional laborers through ‘fake labor cooperatives’ and labor contractors. As in Tucumán, wages were very low during the initial stages of the reactivation of the citrus industry and dropped again in 2002 when the Argentine peso was devalued. But, unlike Tucumán, growers did not have to contend with a strong labor union during the initial economic reactivation period. The Fruit Laborers’ Union did not manage to challenge the ‘fake labor cooperatives’ or the wide practice of failing to register workers. Only recently have laborers gained the right to be transported in buses instead of trucks, more than a decade after harvesters in Tucumán. In recent years the ‘fake labor cooperatives’ began to disappear and the number of registered laborers has increased, thanks to more active controls by government agencies and the labor union.

Production took off in 2002 and grew 18% between 2002 and 2006; export grew by 39% during the same period. Since then exports have fluctuated but only because of climatic vicissitudes or market saturation. Most of the fruit exported is produced by six integrated firms and two consortiums of producers (one with 25 members). These firms are now paying more attention to training their permanent laborers responsible for pruning, spraying and phytosanitary controls. As quality gains in importance, many of these exporting firms and producers have shifted to hiring laborers without the use of intermediaries. All of them have their own packing plants, none of them as mechanized as the major packers in Tucumán. The integrated firms also have their own plant nurseries and cold storage facilities. However, unlike Tucumán, all producers and firms must rely on the testing services of INTA, the National University of Entre Ríos or laboratories in major centers for quality controls that require precision. Integrated firms do not have industrial plants to produce juice. All of the fruit that has to be discarded is sold to independent juice processors; it is not a major industry.

Fruit not directly exported by producing firms or consortiums is handled by associated packing firms or by packing firms in joint ventures with large foreign and Argentine fruit-exporting firms, one of which is the major lemon producing firm from Tucumán. In 2007, nearly 51% of the exported fruit carried Eurep-GAP certification. For most producers of sweet citrus, however, the national market will remain for some time as the major outlet for their fruit.

Laborers in the Lemon and Sweet Citrus Industries

In both regions harvesters and permanent laborers are unionized and employers must register them, though many fail to comply (Ortiz & Aparicio, 2007; Tadeo, 2006). Once registered, laborers are entitled to social security benefits, family subsidies, health care coverage, vacation

pay, double pay on holidays, and a Christmas bonus. Seasonal laborers have to be recalled in subsequent years and can accumulate seniority. Once hired, seasonal and permanent laborers automatically become union members.

Permanent laborers, most of whom are skilled and handle equipment, work in the nursery or supervise occasional day laborers; they are paid a monthly salary in accordance with their skill. According to the collective agreement, these laborers earned between 3% and 11% over the salary of unskilled laborers, which in 2001 was well below what a family needed (*La Gaceta*, 2005). Occasional laborers are paid a day wage commensurate to the salary of unskilled permanent workers. In 2005, the wage of unskilled laborers nearly doubled. This increase allowed married laborers with two young dependents to earn about 10% over the line of poverty, if they worked full time. In 2007, the wage rose again from 965 to 1,082 Argentine pesos but it is unclear whether the gain covered increases in the cost of living.⁵

Harvesters, however, are paid by amount harvested in accordance with a piece rate also specified in the collective agreement. While a good fast worker could earn a considerable income working full time, he is seldom given a chance to do so. Most harvesters are called only when the weather is appropriate and when there is a demand for fruit. At the beginning and end of the harvest they are called about two to three days a week and most of the time they are allowed to cut fruit only a few hours a day. Thus, harvesters' earnings are linked not only to their ability but also to climatic conditions, demand in foreign markets, the state of the orchard, the harvesting technology used, the efficiency of the firm, and the labor contractor who hires them. During August 2001, the high point of the season, only 50% of the harvesters earned above what a family with two dependents needed to cover monthly expenses (Ortiz & Aparicio, 2007). The 2007 collective agreement corrected this inequity by forcing employers to pay harvesters a minimum wage even when they were only called for a few hours. None of these increases were automatically granted; they were won by UATRE after bitter negotiations and highway protests.

Efficient and responsible service firms attract clients with productive orchards and well-managed harvesting systems, most likely those who export to the EU and have Eurep-GAP certification. Their workers constitute the elite sector of the harvest season labor market and enjoy a greater earning potential while employed. The harvesting system used by these firms also had a dramatic effect in slowing the pace of work and improving the mood within the orchard. In part, this is due to supervisors' recognition that speed risks fruit damage but also because it is associated with new harvesting modes. In Tucumán, forklift tractors bring the bins next to the row of trees where a group of four self-selected harvesters work; each one receiving an equal share of what the group harvests. The group is formed amongst friends who are capable of working at a similar rate; in general they collaborate and support each other. There is no frantic running to prop the ladder against the most rewarding branch, nor the tiring and time-wasting walk to unload the fruit. When the bin is filled a new one is brought to them. Each bin is identified with the number assigned to the group of laborers, the location of the group in the orchard, and the day the fruit was harvested. Trained personnel sample fruit for quality either in the orchard or when it arrives at the packing plant. All of this information is recorded in a spreadsheet and the crew leader and labor contractors are informed about the performance of the laborers. This information is analyzed and used to evaluate contractors, crews, and managerial decisions. This harvesting system has increased the productivity of labor and improved fruit quality (Ortiz & Aparicio, 2006a, 2007). In accordance with Eurep-GAP requirement, SENASA is supposed to monitor that mobile toilets are installed near where harvesters work.

In Entre Ríos the union failed to ensure field laborers a living wage. In August 2005, an unskilled permanent laborer in the sweet citrus industry earned 787 Argentine pesos a month (a 25-day month) or 19% less than in Tucumán. By 2007, the disparity between the two zones was only 6%. In Entre Ríos producers still depend on an older and less productive harvesting system, used mostly by smaller producers in Tucumán. Each harvester must carry his or her bag to a row of bins, placed at some distance, where the fruit is quickly inspected before he is allowed to deposit it. Records are kept of what each laborer harvests and laborers are paid by the number of bags brought and accepted. Packers do return to growers the bins of unsuitable fruit and, if the volume is large, this is likely to affect harvesters' earnings. Piece rates vary from farm to farm and no information is available about average earnings; which are likely to be lower than in Tucumán. Mobile toilets are available at each orchard, a welcomed addition for women harvesters in particular.

In both regions, the new limitations on the application of chemicals and demands for better training in the handling of equipment have also improved the mood and probably the health of laborers. But we have no information on the incidence of work-related illness to corroborate whether practices have changed. Control of effluents and of local water sources will certainly improve the life of working families who live within the citrus areas. Creeks and drainage canals were polluted even within the major cities of Tucumán in 2001.

Working conditions at most packing plants in both regions have not improved, except in a few state-of-the-art plants where many of the tasks have been mechanized. But even there women are placed at key spots to pick up whatever the machine misses. In most of the packing plants the selection process is still done manually by women standing for long hours over moving lines in a very noisy and cool environment. It is a physically stressful task because they have to stand still while reaching for lemons, with hardly any rest periods. Furthermore, alertness has become even more important in the selection and grading process in recent years. Slightly damaged or infected fruit must not be allowed to pass and high quality must be recognized. To ensure concentration these workers are not allowed to talk or snack while sorting. Only drinking water is allowed and brought to them when requested.

The packing plant, the last step of the production process, is where tensions are most intense and issues of quality and discipline are greatest. But issues about monitoring quality also involve preconceived notions about the need to control workers, dating to a period when members of the elite owned the major industry of Tucumán. This industry depended on migrant laborers from poor regions and neighboring countries. Although these notions are slowly being challenged, particularly in the packing plants, some supervisors still find it difficult to surmount even minor differences in social standing and perceived moral values. Under these circumstances, trust evaporates.

Export packing plants must be free of fruit contaminant. They are constantly cleaned and disinfected but we have no information as to how these procedures may affect workers. However, laborers profit from other requirements: access to toilets and shower facilities, provision of appropriate clothing, changing rooms, and locked storage facilities. If workers eat on the premises, an appropriate separate area has to be provided. Since SENASA's monitors must now be present when fruit is being packed for the EU, it is likely that all such packing facilities conform to the rules.

In Tucumán, wages paid to packing plant workers are based on what was negotiated in the collective agreement. Semiskilled laborers received 10% higher wages than day laborers. Since sorters and packers have to work overtime, the day earnings are estimated on the basis of an hourly wage. In Entre Ríos earnings are based on the day wage stipulated by

the collective agreement plus a productivity payment negotiated in each plant with a representative of the union. Other fringe benefits are identical to those received by field laborers. In the Entre Ríos firms exporting to Europe, where concerns about quality and hygiene are stressed, managers prefer to hire, train, and recall the good workers and INTA supervises their training. Direct hire is more transparent, and personnel are more stable and easier to monitor. Many of the large integrated firms still subcontract the hiring of personnel but their activities are now closely monitored by the Department of Labor. The labor office and union representatives routinely check that all workers are registered and receive benefits due to them.

Conclusion

Citrus production is an old industry in Argentina that started exporting fruit nearly 40 years ago. In the two regions examined here, the industry positioned itself in different markets and evolved in different ways in response to regional political events, produce specifications, market demand structures, the social origins of the entrepreneurial class, the coordinating capacity of producers' associations, and opportunities captured and missed. How and when each evolved also determined differing modes of integration to global markets and the impact of private certification systems. It is a viewpoint often missed when we analyze export commodity chains only from the perspective of consumers and commercial chains in receiving countries. We urge the integration of both perspectives to explain variable impacts.

Growers in Tucumán favored technical solutions to deal with quality problems, training a small group of permanent laborers to perform certain key tasks and hiring qualified agronomists to supervise the orchards. Growers in Entre Ríos were cautious investors and delayed the expansion of exports. None of the producers in both regions were initially ready to become dependent on more experienced harvesters, even after they decided to improve fruit quality to meet the foreign expectations. Seasonal laborers were offered a wage that would only appeal to the young or unemployed regional residents with little education. At the same time, producers began to insist on discipline and attendance, often to no avail. Attitudes toward laborers changed only when exporting producers and managers began to systematically record in spreadsheets the production information required to comply with EU norms and Eurep-GAP requirements. The analysis of gathered data made exporting producers and managers aware of the impact of harvesters' competence and responsibility in the transformation of a simple fruit to a valuable commodity. It took some time for this recognition to be translated into higher wages. Wage improvement had to await the resurgence of union power, which was slower to emerge in Entre Ríos than in Tucumán. Nevertheless, laborers profited from changes in the harvesting system, managerial practices, and greater compliance with labor regulations. Recent greater compliance was not the result of monitoring activities by private certifying agencies but was due to greater efforts by relevant government agencies in collaboration with the union.

What Eurep-GAP or any other well-meaning normative cannot address is the poverty of working families in counterseasonal export industries. When the lemon harvest ends in the orchards of Tucumán, about 25,000 laborers lose their jobs and cannot be absorbed by any other regional industry. That is one of the burdens of overspecialization that can only be relieved if the industries can diversify and produce also for the national market. It is a structural problem that can only be resolved through regional incentives and planning rather than a realignment of commodity chains.

Notes

- 1 Phytosanitary norms attempt to prohibit the entry of insects and pathogens not present in importing regions. But it is not a simple matter to determine the presence and absence of detrimental insects and pathogens within large regions that cover farms and residential areas. In some cases the signs appear belatedly. The second issue is that it is unrealistic to expect exporting areas to be free from contaminants. The issue is to evaluate the extent of the infestation in the producing foreign region and to estimate whether it is controllable. The third issue is that importing countries or unions of countries may not be uniformly economically affected by the entry of a particular pathogen. While the entry of a fungus spore in Florida may have a devastating effect in the citrus industry, it would do little damage in dry Arizona. The fourth issue is whether the risk of infestation from imported plant material is higher than the risk of infestation from other areas or neighboring countries. When lemons from northern Argentina were allowed entry into the United States, the permit restricted entry to citrus producing states where a fungus spore would not affect any of the local agricultural industries. Thus, lemons from northern Argentina were not allowed entry to California. Yet, in 2001, California citrus producers sued the Department of Agriculture for allowing the entrance of Argentine lemons to other states. In the suit, they contended that Argentina's certifying public institutions were not responsibly monitoring the lemons that were exported. The suit is being contested. In 2003 Spain indicated that it had received a consignment of citrus with prohibited pathogens and imports were stopped. Spain has since insisted that the EU increase controls but authorities in Brussels rejected this demand. In 2004 the entry ban was lifted just before the harvest. Two other major European citrus producers (Italy and Greece) have on various occasions demanded barring the entry of lemons.
- 2 Norms required to access particular supermarket chains ('Nature Choice' required to access Tesco, or Eurep-Gap required to access a group of EU supermarket chains) or to reflect on to the moral stature of a firms (Social Responsibility certification) have been summarily identified as 'private norms'. These norms are designed by committees that include representatives of the commercial firm(s), large suppliers, and technical experts, and perhaps other agents. Private norms differ from state regulation in that they address clients' concerns beyond those of food safety. There are many other norms (e.g., organic, fair trade, ethical trade, rainforest alliance) emerging from social movements that focus on special concerns about food quality, environment, protection of small producers, or the plight of laborers. These norms fall between public and private norms (Busch, 2005; Hatanaka et al., 2005). Although there is considerable overlap between the three categories of norms and implementation of regulations, they differ in their central goal and choice of accreditation agencies.
- 3 In Tucumán SENASA consults with the Phytosanitary Organization of Northwest Argentina (AFINOA), which was created in 1991 and represents regional producers, regional universities, and state and private research institutes. In Entre Ríos, the regional branch of the National Agrarian Institute (INTA) played a central role in SENASA's deliberations. INTA is an agricultural research and service center created by the Department of Agriculture in 1962.
- 4 Tucumán is free of canker B (caused by *xanthomonas axonopodis aurantifolii*) but not black spot (caused by *phyllosticta citricarpa*) and to minimize the number of preventive treatments the movement of plant material must be controlled. The creation of phytosanitary barriers has become the responsibility of AFINOA and the Phytosanitary Regional Committee of Northwest Argentina (CORENOA). CORENOA is integrated by representatives from regional governments, SENASA, the private Experimental Station Obispo Colombres, INTA, and regional universities.
- 5 In 2007 the National Department of Statistics changed its methodology for estimating inflation and the line of poverty. Hence, we cannot determine if real wages have risen. Furthermore, the estimates have been challenged and accusations have been made in the press that data have been altered to hide growing inflation rates.

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