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Value Chains or Social Capital? Producer Organizations in the Citrus Fruit Sector

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Abstract. The article studies institutional performance and specifically the effectiveness of producer organizations in agriculture in areas with low levels of social capital. It finds within the same region (Sicily) one case supporting an institutionalist reading (linking low performance levels to low levels of social capital), and one success case in which, despite the burden of low social capital, producer organizations united small farmers and developed a unitary brand for their products. The article finds that the difference in institutional outcomes is due to differences between value chains, and specifically due the extent to which the interests and power of wholesalers and producers in such institutions diverge.

Introduction: Sicilian Agriculture and Producer Organizations

Many accounts of what supports or explains formal institutions identify social capital as a key ingredient of how institutions come about or what underpins their functioning. But can formal institutions work in areas where social capital is low, or the forms it takes undermine rather than underpin effective institutions? Since the 1970s the European Union and the Member States have sought to support institutional change in agriculture mainly by encouraging more effective and more encompassing producer organizations. The expectation was that such organizations can unite small farmers and reach, on their behalf, institutional arrangements with retailers, offering farmers better prices in exchange for more stable and predictable production patterns (Camanzi et al., 2009; Bijman et al., 2012). Yet it is not at all clear whether and when such newly established organizations actually produce the intended institutional outcomes in regions with low levels of social capital. While many studies on producer organizations link the establishment and performance of producer organizations to social capital, this article offers an alternative account, one that is better suited to explain the performance of such organizations in areas with low social capital. While not aiming to test social capital theses, the article argues that the emergence and performance of producer organizations can be the result at

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times of how value chains emerge, and of whether producers rather than wholesalers can keep control over certain links in the value chain. The article uses a comparison between two initiatives to unite producers and their organizations around unitary brands in Southern Italy. Thus, in a region with notoriously low levels of social capital (Sicily), one of the initiatives indeed conforms to theoretical expectations about 'low' forms of or 'negative externalities' of social capital. The other initiative contradicts expectations, finding a successful institution in an area with arguably low levels of social capital. It finds that the difference can be understood in terms of how value chains emerge in the two cases and, specifically, of whether and how producers could develop the capacity to export products autonomously of wholesalers. Thus, data suggest that local wholesalers are far more powerful vis-à-vis producers in the case of the least successful initiative than in the case of the other initiative. The findings are thus broadly institutional: they suggest that responsibility for differences in economic conditions lies with the ways in which collective forces arise and interact to favour certain forms of economic organization rather than others.

Institutions, Social Capital and Producer Organizations

Ever since 1972, when the European Communities first emphasized the importance of producer organizations under the Common Market Organization framework, various European agencies and national authorities have taken up an ambitious attempt of institutional creation: trying to call into life and develop collective organizations of farmers. This attempt went hand in hand with the expectation that the concentration of farmers would bring beneficial results for agricultural development. In social science, numerous accounts indeed link development to institutional performance (Acemoglu et al., 2001; Rodrik et al., 2004; Rodríguez-Pose, 2013), in turn seen as largely determined by social capital differentials. Recently, a European-wide study of producer organizations (comparing the results of setting up such organizations between countries) argued that the variation in degrees of success is partly an effect of varying levels of social capital (Bijman et al., 2012, pp. 8, 88). In fact, much of what we know about producer organizations and institutions in general links these to social capital. Robert Putnam's initial argument linking institutional performance to his understanding of social capital and further to medieval political organization (Putnam et al., 1993) has received repeated confirmation in the econometric literature (De Blasio and Nuzzo, 2010; Becker et al., 2011, adapting the arguments to post-communist Europe; Di Liberto and Sideri, 2011; Petrarca and Ricciutti, 2013). One problematic aspect of social capital accounts of institutional performance is that they obviously bear negative implications for those areas that reflect the opposite historical legacies, low levels of social capital and, as a result, badly operating institutions; due to the formidable historical resilience of past political organization and social capital levels, improving the operation of institutions or creating effective institutions seems very difficult. Other authors, focusing on countries, regions and communities in Asia, Africa and South America, while also confirming the importance of social capital for development, discover variation in social capital levels down to the communal level and over relatively short periods of time (Grootaert and van Bastelaer, 2002; Casson et al., 2010). Consequently, in explaining this variation, they reached less rigid findings on social capital and its determinants, and to the initial explanatory factor of past political organization added several others such as present-day economic inequalities (Adhikari and Goldey, 2010; Savoia et al., 2010), 'legal institutions and state organization' (Fafchamps, 2006), differences in status and power in social networks (Serra, 2011), internal governance (of producer organizations, Bijman et al., 2012); and differences in organizational structures, institutional arrangements, and governance of markets (again writing about producer organizations, Tisenkopfs et al., 2011).

This article's findings are more in line with the second stream of literature, going beyond social capital in explaining institutional performance: a closer look at the reasons for the failure of producer organizations in drawing the participation of producers and a comparison with a success case in the same region show that these reasons have less to do with social capital levels, but with the constitution of the respective value chain. As suggested by the literature on global value chains, issues of who exerts governance in value chains and how are crucial for understanding the operation and inclusiveness of value chains (Gereffi, 2005, 2014; Lee et al., 2012; Ravenhill, 2014). Specifically, this article focuses on the position of wholesalers in value chains and the extent to which wholesalers can govern these, and it shows how, in the case of unsuccessful producer organizations, wholesalers divide producers between several competing producer organizations and product brands. This finding is in line with the typology offered in the literature on value chains for studying governance, depicting governance as the result of either 'buyer-driven' (i.e. retailer-driven) or 'producer-driven' value chains (see Lee et al., 2012, pp. 12327–12328). Thus the trend seen in the cases studied in this article is an aspect of a producer-driven chain, in which smallholders are confronted not so much with the power of retailers, but with that of 'large processors in the middle of the chain' (referred to as 'wholesalers' in this article; Lee et al., 2012, p. 12329).

Producer organizations are seen in the development literature as a crucial tool to deal with many of the problems assumed in this literature to impede development: high transaction costs, asymmetrical information, and incomplete property rights that obstruct the proper functioning of markets and especially coordination among market actors (Dorward et al., 2004; Bijman et al., 2012). Producer organizations help overcome some if not most of these problems, as they are seen as tools allowing small farmers to have bargaining power in negotiating prices and to form economies of scale (for a review, see Dorward et al., 2004). While we know how they can help small farmers, we know little about what causes their success or failure, and most of what we know was formulated in terms of social capital explanations (Megyesi et al., 2011; Tisenkopfs et al., 2011; Bijman et al., 2012). Some of these studies have tried to look beyond social capital – into what causes social capital differentials – focusing, for instance, on the effectiveness of internal governance (Bijman et al., 2012) or on the workings of different combinations of types of social capital (Megyesi et al., 2011). This article too sets out to look beyond social capital in explaining the effectiveness of producer organizations. It uses tools of production network analysis (Kaplinsky, 2004) to study producer organizations to show how value chains (and specifically how they emerge, and who holds most power in them) in turn also impact greatly on the effectiveness of farmer cooperatives. It specifically asks why, in a region with low social capital, producer organizations perform differently when it comes to uniting growers in their area and winning for them the quality certifications (such as Protected Designation of Origin) that would guarantee them better prices.

The article studies the emergence of an institutional arrangement in a region (Sicily) and an economic field (citrus fruit production) that seems to be the most likely case for a failure of institutional creation. Sicily is the region singled out in the social capital literature on Italy as having the institutional endowments that are the least conducive to economic development; in particular, the citrus fruit sector seemed to be dominated heavily by mafia clans historically, with one study arguing that it was this sector that favoured most the emergence of organized crime in Sicily (Dimico et al., 2012). Studying how and why institutions in Sicily emerge and survive or fail is relevant since, if the literature on social capital is correct, Sicily offers some of the most unfavourable conditions for institutional creation in Europe; consequently, lessons from institutional creation in the Sicilian context should be of interest and relevant also to those undertaking attempts at institutional change or creation in regions that are likewise negatively endowed with the prerequisites of institutional performance.

The article's next part presents a brief overview of key developments in Mediterranean agriculture, focusing on what is arguably its main field, citrus fruit production. It shows how in Sicily citrus fruit production has become increasingly problematic, especially since the 1990s, with production costs increasing several-fold and prices plummeting. However, while the eastern area around the city of Catania fully reflects these problems, in the area around Ribera, in western Sicily, production has expanded, prices remained well above (almost twice as high as) those for citrus fruits in the Catania area, and products are sold under a unitary, PDO-certified label. The second part argues that these differences are in part attributable to producer organizations: while in the Catania area the main producer organizations have faced big difficulties expanding and coordinating actions to use a unitary brand, in the Ribera area strong producer organizations secured market channels by achieving the PDO certification. The success of producer organizations in the Ribera area is down to the wholesalers in this area seeming to be less specialized and to exert less power in value chains than in the Catania area, where they historically enjoyed a far stronger position vis-à-vis producers.

The concluding part highlights several findings arising from the empirical material. It argues that while the development literature tends to treat producer organizations as devices helping producers overcome various asymmetries (from lack of scale economies to informational imbalances), one should not overlook that the creation of producer organizations can run against established interests and institutional arrangements, and against those actors that, in the case of the emergence of a value chain, would be best positioned to govern it (wholesalers in the context of this study). The creation of producer organizations and their existence needs to be seen as possibly far more conflict-ridden than has been done until now. Furthermore, at least in the Sicilian context, the lack of strong producer organizations seems not to be the effect of lacking social capital, but the effect of what has been in fact a highly developed and early modernized agricultural sector. An important implication is that the aggregation of farmers into collective organizations should be seen not so much as an effect of social capital, but of the economy's structure, allowing or not power in value chains to accumulate around wholesalers rather than producers.

In terms of methodology, the article relies on interviews with representatives of 27 farms in Sicily. Interviews took place during February–April 2014. The selection of interview partners for this qualitative study maximized variation in the sample in order to derive as much information as possible about the operation of producer organizations in Sicily. Thus interview partners differed strongly in terms of the type of products marketed, size and years in activity, membership of producer organizations, and geographical location. Appendix Table A1 presents the cases studied during fieldwork (referred to by the name of the respective town, village, or commune).

The Plight of the Citrus Sector in Sicily

Between 1977 and 2008 the worldwide citrus sector has seen massive increases in world demand and an ensuing 110% increase in production (Vaccaro, 2011, p. 68). Italy, once a major producer, has not been at the forefront of these developments over the last 40 years. The country's share in world citrus production decreased from 4.2% in 1982 to 2.8% in 2002 and to 1.8% in 2008, losing ground in the face of stronger competitors such as Brazil, China, and the United States (43% of world production in 2005–2008; Vaccaro, 2011, p. 72), and Spain, Greece, Turkey and Egypt in the Mediterranean area. Over the last decades, Spain and South Africa emerged as the world's biggest exporters. Spain in particular has dominated European exports since the 1990s, exporting some 10 times more tons of fruit than Italy in the late 1990s and late 2000s (and Greece exports some three times more). Italy's citrus production is overwhelmingly based in Sicily (other strong regions are nearby: Calabria, Basilicata, Puglia), taking up some 101 740 hectares, out of a national total of 175 520 hectares in the 2000s (Beccali et al., 2009, pp. 708–709).

Citrus fruit production and trade have played a crucial part in Sicily's economy for most of the nineteenth and twentieth centuries, at times being Europe's strongest production site for the export of oranges. In eastern Sicily, citrus production initially expanded in the areas around the port of Messina. Commercial structures emerged in and around that city already in the nineteenth century, providing strong continuity with the boom of mulberry and silk production in the seventeenth century. By the turn of the nineteenth century, Catania became the island's most important commercial centre, overtaking Palermo and Messina. Thus in the nineteenth century, citrus fruit production became Sicily's most profitable economic branch, and land used in citrus production was extremely valued, with its price estimated as 10 times higher than the price of vine orchards and 50 times higher than the price of land used for grain. It was in these years that the market for citrus fruits became an international one (the US being the main market for citrus fruits throughout the nineteenth century), with local production barely finding a regional or national market (Lupo, 1984, 1987, p. 82). Historian Salvatore Lupo argues that the Sicilian city of the nineteenth century played a crucial role for local agricultural products such as citrus fruits. However, this role did not consist of that of a regional market of consumers. Instead, cities such as Catania (together with the island's two other most important cities Palermo and Messina) mattered not as regional markets but as commercial centres, managing the export of existing production (in the words of Lupo (1987, p. 91): 'as a centre of entrepreneurial and commercial activity'). Thus, a large producer declared in 1908 that, 'As a market, Catania would not suffice as an outlet for our fruits, because only one garden in Acireale [a small town near Catania] would supply enough production to suffice for a city more populated than Catania' (Lupo, 1987, p. 91).

With local markets largely unable to consume production, a strong export orientation became one of the sector's main characteristics. A further important and enduring feature was specialization, with a very strict division of labour between producers – mostly located in rural areas or in rapidly increasing towns – and wholesalers, located in the larger towns and in the larger ports, such as Messina and most of all Catania. Thus, by the mid-nineteenth century and throughout the twentieth century the citrus sector showed many characteristics usually associated with a 'modern' capitalist economy: investment-led growth and expansion of the sector, strong export orientation, and production almost exclusively dedicated to the (overseas) markets rather than for private consumption.

In the twenty-first century Sicily still is Italy's main supplier of oranges, even though the sector is fraught with difficulties. Problematic was especially the sector's lack of capacity to resist competitive pressures stemming from other countries. While throughout the nineteenth and early twentieth centuries Sicilian production reached markets in most of Northern and Eastern Europe and the United States, market shares began to decrease already before the First World War. This is usually explained in terms of the location of other competitors, often far closer to final markets. It is also explained in terms of the too strict division among wholesalers or between wholesalers and producers particular to citrus fruit production in Sicily (see below). Throughout the second half of the twentieth century, Sicilian products kept considerable market shares only in mainland Italy, while competition in Northern European markets strongly intensified since the establishment of the Common Market and led to the loss of these markets, despite Italy's objective of becoming 'Europe's garden' (Vaccaro, 2011, p. 87).

Most accounts explain Sicily's lack of development – or at least Italy's failure to ensure Sicily's catching up with mainland Italian areas – in terms of the characteristics of the industrialization drive of the late 1950s and 1960s (Asso and Trigilia, 2010; Iuzzolino et al., 2011). Rapid industrialization in the 1960s meant that the larger cities began absorbing labour from agriculture, raising production costs for agricultural producers. However, agriculture – and in particular the citrus fruit sector – also plays an important part in explanations of Sicily's lack of development. Lupo (1987), for instance, shows how much of the sector's vulnerability was due in part to the difficulty of selling in overseas markets a product bought at high prices in home markets: the difficult task of estimating the revenues from sales in overseas markets brought extreme complications to producers and wholesalers. A negative difference between home and overseas prices meant the bankruptcy of many wholesalers and of those producers who tried to increase their profits by postponing the actual sale of the production.

Much as in the social capital-oriented development literature, the most recent research traces back the problems of Sicilian agriculture to the lack of natural assets of certain lands and to the lack of 'assets resulting from the organization of rural lands', the lack of 'autonomy of [landed] classes' (Casavola et al., 2011, p. 66). As to more current factors impeding the development of the sector, the authors stress the disunity of producers throughout Sicily, even though these producers face common 'threats', such as 'the control over price formation and sale conditions of grand international buyers'. In brief, for these authors, the sector remains 'too agricultural, [as it is] faced with an international market which encourages aspects of commercial and agro-industrial capacity' (Casavola et al., 2011, p. 67). The main problem is the lack of collective strategies and initiatives, and the main cause of the problem is explained in terms of too many producers still being able to prosper individually in the short term, while postponing developments – such as establishing or strengthening producer organizations – that might strengthen them on global markets in the long term (Casavola et al., 2011, p. 68). The situation of the citrus sector, discussed in this article, offers a somewhat different perspective. It is not that the cognitive and strategic capacities of producers somehow prevent them from distinguishing short- and long-term interests, but that the sector's internal divisions between producers and wholesalers – and the corresponding ways in which value chains emerge – can weaken existing producer organizations. The next section presents this idea in more detail.

Catania and Ribera

At a first glance, the Catania and Ribera areas could not be more different. The eastern area around Catania (Catania and Syracuse provinces) is far larger in terms of productive plots dedicated to citrus fruit production than the area around Ribera. The area having the city of Catania as its main export outlet consists of two administrative provinces – Catania and Syracuse – with citrus production their main agricultural activity: production levels are 2.5 (Catania province) and 3.5 (Syracuse province) times higher than the Sicilian average. For Agrigento, the province of which the Ribera commune is part, the same indicator stands at only 30% of the regional average. Citrus fruit production in eastern Sicily looks back at a history beginning in the nineteenth century, while around Ribera it took off only in the 1970s (even though citrus growing traditions around Ribera go back as far as early nineteenth century, as in the case of the Catania area). An important indicator is the size of the average plot of land, as it is has generally been argued that many of the problems of Sicilian agriculture are due to small plot size (impeding the creation of economies of scale; Casavola et al., 2011). The average plot size in agriculture is slightly larger in the eastern area: the average farm in 2010 had 4.5 hectares of land in Agrigento, and 5.9 and 7.6 in Catania and in Syracuse, respectively. The trend over the 2000s was one of aggregation, with plots of land almost doubling in Catania and Syracuse, and seeing a far slower increase in Agrigento (from 3.1 to 4.5). For citrus production, average plot size in 2010 was 0.8 hectares for Agrigento, and 1.7 and 1.5 for Catania and Syracuse, respectively, in the year (Istat, 2010).

Data on social capital offers a mixed picture, also because data at the provincial or communal level within Sicily are hardly available (and one would need such data if, following Robert Putnam, social capital is an attribute of collectivities rather than of individuals; Portes, 2000). Available data at the provincial and communal levels are on political participation in referenda and on organized crime rates, but only for the late 2000s; data on trust or associationism was publicly available only at the regional level. Political participation in referenda (a common social capital measure, at least in the literature following Robert Putnam's writings, see Fowley et al., 2001, p. 267) is higher in relative terms in the Agrigento province than in Catania or Syracuse. Since the Italian Ministry of Internal Affairs allows the disaggregation of participation data down to the communal level only since the 2011 referendum, this article can only rely on data from that referendum to make inferences about social capital differences between the Agrigento province and the eastern provinces: while participation in Agrigento was on average higher (59%, compared to 56% in Syracuse and only 49% in Catania), at the level of citrus-producing communes one finds higher participation in Syracuse than in Agrigento; furthermore, in absolute numbers twice as many people participated in the Catania province than in Agrigento.

A measure of lack of social capital (or social capital with 'negative externalities'; Grootaert and Van Bastelaer, 2002, p. 2) that covers more years and that also takes into account differences between provinces is a rather newly introduced set of indicators of organized crime activities: here Agrigento tops almost all other Sicilian provinces – not to mention most of Italy's except Calabria -– in terms of numbers of 'mafia associations' closed down by the police in the years 2004–2007 (in Sicily second only to Caltanisetta); in terms of homicides, extortions and usury, crime levels in Agrigento and Catania are comparable, while in Syracuse they are so low as to be comparable to levels in Northern Italy (Sciarrone, 2010).

Thus on the basis of the idea that plot fragmentation is problematic and that producers in the Ribera area are far less experienced,[1] with no discernable advantage in terms of social capital, one would expect the Ribera area to be worse off than the citrus production area in eastern Sicily. Even more problematic for the Ribera area seems to be the fact that it produces types of citrus that are fairly similar to those produced in other European countries, meaning that Ribera producers face even more competition – and ensuing pressure on the prices they can ask for their products – than citrus growers in the eastern provinces, whose products (pigmented types of oranges) are unique in Europe.

In effect, on the ground one finds that while producers in the eastern provinces and around Ribera started setting up large producer organizations in the 1990s, only producers around Ribera managed to create an organization that is effective, meaning one that established a unitary brand name for oranges produced in the respective area; for this brand name it also obtained the highest European certification, Protected Designation of Origin (PDO). In contrast, in the Catania area the main organization pursuing the goal of acquitting the PDO certification sees competition from a range of smaller producer organizations initiated by wholesalers and selling production under distinct brand names (described in the next section), with the result being intense competition between producers and a sharply declining price for citrus fruits.

Table 1 summarizes the data presented so far on production level and average plot size in three provinces, the time when local producers started exporting citrus fruits to national and international markets, the two social capital measures discussed above, the average price producers get, and the level of certification achieved by producer organizations.

Table 1. Citrus production in Agrigento, Catania and Syracuse provinces.

Province	Citrus production*	Plot size (ha)	Total citrus area, 2013	Exports since	Social capital - participation **	Social capital (crime) ***	Price (Euros)/ kg in 2010****	EU Certification *****
Catania	2.5	1.7	33 600	19th century	49%	1.86	0.16	IGP
Syracuse	3.5	1.5	24 052	19th century	56%	none	0.16	IGP
Agrigento	0.3	0.8	5,066	1970s	59%	5.30	0.40	PDO (highest)

Notes: * relative to the Sicilian average; ** in the 2011 referendum; *** in terms of mafia associations, 2004–2007; **** the price only refers to oranges of the Navelina sortiment (see Annex 2); ***** IGP and PDO are certification schemes for the quality of agricultural and food products in the European Union, with PDO considered the highest and most difficult to achieve.

Sources: * Census of Italian Farms; ** <http://elezionistorico.interno.it/>; *** Sciarrone, 2010; **** compiled during fieldwork together with agronomists from Sicily's professional Association of Agronomists; ***** <http://ec.europa.eu/agriculture/quality/schemes/index_en.htm>, accessed 9 October 2014.

It is highly plausible that Ribera producers faced an easier task than the ones in the eastern provinces also or mainly because the area or the number of producers they needed to unite was far smaller in absolute terms, approximately one fifth or one sixth of the surface dedicated to citrus production in the eastern provinces; even though average plot size is almost twice as small as in the eastern area. But respondents also suggested that there is at least one other important difference, namely in the structure of the citrus fruit sector: wholesalers in the Ribera area are not as strong vis-à-vis producers as in eastern provinces. Most importantly, in the Ribera area there are fewer wholesalers, they are grown out of producer structures, and they are easier to control: because there are fewer and locally known (as they are all former producers), producer organizations can thwart attempts of cartelization between these wholesalers.

Specifically, respondents (see Appendix Table A1 for an overview) reported that there are four main wholesalers, all of whom have developed trading activities *after* they have developed production in the area. The small number of wholesalers is an effect of production in the area taking off only in the 1970s, and of the relatively small size of production, at least in comparison to that in the eastern provinces. Furthermore, many other producers have initiated separate efforts to make sure that their production finds its ways to Northern Italian markets. Most importantly, the largest producers in the area keep parts of their personnel – most commonly family members – in the larger North-Italian cities for many months every year (up to six months). It is to these personnel that they send their production, and these personnel then distribute it to retail stores.[2]

In contrast, respondents in the Eastern provinces report that the scene of wholesalers in the eastern provinces is far more complex and larger, making it impossible to keep an overview of the number of trading agents in the area. An interview with a representative of Sicily's Association of Agronomists produced an estimate of some 200 wholesalers, out of which 20 were considered by the interviewee to be large enough as to determine the price for most of the others (Interview Trecastagni 2). Indeed, a short online search carried out in May 2014 seemed to confirm that there are far more wholesalers present in the Eastern provinces than anywhere else in Sicily (the website used was <misterimprese.it>, which is similar to Yellow Pages, though including more detailed information, allowing search categories to be narrowed down in terms of location and field). The search identified some 200 structures in the field of citrus fruits in Sicily, out of which only two located in the Agrigento province (both in Ribera and both emphasizing that they also deal with production). Most (132) were located in the province of Catania (followed by Messina with 43 companies and Syracuse with 38). In Catania, most companies listed concentrated in towns such as Palagonia (30), Scordia (27) and Paternò (16). Many – for instance, 20 out of 10 in Palagonia, 11 out of 27 in Scordia and 7 out of 16 in Paternò – emphasized that they only focus on trade or 'export'. This indeed seemed to confirm that there is a difference between Catania and Ribera in terms of specialization in trade, with far more numerous specialized wholesalers in the former province.

One hypothesis explaining the difference in trade specialization relates to the late development of mass production in the Ribera area. Citrus production from Ribera entered markets in the 1970s, at a time when Sicily had long lost its non-European markets, and this meant that there was no need for trading structures as broad and as complex as those inherited by the eastern provinces. In contrast, in the east the early entry into world markets seemed to have created a powerful and complex structure of trade, which in turn invested profits into expanding production areas ever more and ever farther away from the commercial centres of Messina and especially Catania. World markets were lost by the second half of the twentieth century, but Catania kept its position as main commercial centre and the citrus sector in the east kept a relatively – in comparison to Ribera – complex structure of wholesalers, as well as large areas growing citrus fruits. This structure preceded and partly impeded the growers' effort to organize collectively as argued further below.

The situation of the two citrus-producing areas can be envisaged as two institutional arrangements ordering the value chain between growers and consumers; or, to use the language of the 'global value chains' literature (Lee et al., 2012) two ways of governing the value chain: in the western area around Ribera the arrangement works in the form of several producer organizations offering the members of a relatively smaller (but also more fragmented) citrus-growing area the possibility to sell production to retail chains at a convenient price, using a single, unitary brand for the products of all affiliated members. In the eastern area, large wholesalers have made the step of creating their own producer organizations, convincing small producers in close proximity to them to join these and benefit from secure market channels. Wholesalers and the respective producer organizations set up several brands, competing with each other. To the extent that each wholesaler-led organization secures and keeps access to at least one retail chain, further cooperation and coordination to establish a unitary brand is unnecessary. The next section takes a closer look at the situation in the eastern provinces from the perspective of what has been said above. It asks why the larger collective organization – IGP Arancia Rossa – is not working as its counterpart in the Ribera area, Arancia di Ribera DOP. It shows how in the eastern provinces large wholesalers have set up their own initiatives to organize producers, dividing the sector between the growers in their organizations and everybody else. To the extent that these parallel organizations work well, there are few incentives to make the larger one (Arancia Rossa) work better in the sense of attracting a wider participation and securing a higher certification.

Beyond Collective Producer Organizations: Commodity Chains in Citrus Production in the Catania and Syracuse Provinces

One thing that stands out while comparing the two areas of citrus production in western and eastern Sicily is that, while both areas have their producer organizations, the western area (Ribera) sells its entire production under one brand name, the Riberella orange, which has recently (2009) acquired PDO status for Ribera oranges. In contrast, similar producer organizations in the eastern provinces could not achieve anything similar for their brand name Arancia Rossa. A key difference is that in the eastern provinces instead of one brand name (Arancia Rossa) there are at least four other ones that have pushed it to the side; the Arancia Rossa consortium has failed to turn its name into the unitary brand for products in any given area, and instead several others compete with each other throughout the eastern provinces. Behind these four brands there are strong wholesaler-initiated organizations of producers. The strongest among them – with cultivation surfaces totaling some 3,000 hectares – is the organization selling its products under the brand of Rosaria. Although these organizations adhere also to Arancia Rossa, they use exclusively their own brands (such as Rosaria) and not Arancia Rossa. For the purposes of this research, four such organizations were studied, all of them being nominally part of

Arancia Rossa. All four organizations share one important characteristic: they were initiated by trading companies, all of which are family businesses, three out of them having been in business for at least half a century (the oldest, Cavallino in the town of Lentini, was established in 1922). Two have chosen to become consortiums and unite growers in their areas into larger organizations, officially titled 'producer organizations' (OP Rosaria in Catania and OP Bella Rossa in Lentini). The other two are still basically trading companies, Ortopiù (based in Francofonte)[3] and Cavallino. Ortopiù was involved in the creation of a producer organization called Le buone terre,[4] from which it buys most of its production; currently, Le buone terre manages orange groves totaling 1,300 hectares. Only Cavallino did not seek involvement in the creation of producer organizations, choosing instead to buy up the production of producers affiliated to IGP Arancia Rossa (on its website it claims that it buys fruit only from affiliated producers, <http://www.cavallinosrl.com/?page_id=9>, accessed 28 May 2015), and selling it further, including in Northern Europe, using its own brand names.

Thus each of these structures sells its production under a different brand name. In interviews, their representatives mentioned the following reason why it is important for them to have their own brand names: they need these brand names as they have all developed their own 'market channels', linking them directly to the large food retail stores present in Italy (of French origin such as Carrefour, of German origin such as Lidl, or of Italian origin such as A&O, Esselunga, or Coop). Working under the conditions imposed by such large retailers is not easy and has come at a cost, such as most importantly the investments into modern storage facilities, and sorting and packaging lines. The head of one of the companies studied argued that individualizing their production by means of their own brand means making sure that they have identified and united several producers committed to work under the delivery and quantitative conditions imposed by the large retailers (OP Bella Rossa, Lentini), usually codified in the form of the GlobalGAP standard (see Lee et al., 2012, for a discussion how retail chains use this standard – a form of private regulation – to 'govern' the value chains for their products). However, the case of Ortopiù (or of Riberella) refuted this account, as the company is perfectly capable of working with international retailers without individualizing its products through own brand names, and instead it uses the Arancia Rossa logo for some of its products. Actually, it seemed to use the Arancia Rossa logo only for produce that did not come from the producer organization; whatever came from the latter, was sold under the corresponding brand name (Le buone terre). Hence, it is not so much that retailers impose the use of certain brands, even though they do have strict requirements regarding delivery times, quantities and quality (and codified as GlobalGAP); instead, it appears that trading companies and corresponding producer organizations such as Ortopiù, Rosaria, or OP Bella Rossa chose not to use the unitary brand preferring instead to own their brands, as their own brands allow them to mark the boundaries of the value chains that they have called into life.

Specifically, it was possible to collect the needed information regarding the detailed constitution of the value chain only for OP Rosaria and Ortopiù, as these companies either made that information public or shared it for the purpose of this study. In the case of both business entities, trading companies participated in and initiated the corresponding producer organizations. Thus Ortopiù was involved in setting up Le buone terre in 2005 (the owners of Ortopiù appear also among the six entities that established the producer organization). And the Pannetteri & C. Srl company plays a pivotal role in OP Rosaria, with family members holding chairmen positions in the producer organization.[5] Both companies organize all harvesting, storing, packaging and shipping operations. Their customers following the commodity chain include many national and international retail chains. Thus in the case of Ortopiù, the value chain looks the following way:

> Le buone terre (producer organization) > Ortopiù (wholesaler harvesting, storing, packaging, and shipping) > Carrefour (most important retail store)

In the case of the Rosaria brand, the commodity chain starts at the corresponding Rosaria producer organization:

> OP Rosaria (producer organization) > Pannetteri (responsible, within OP Rosaria, for all operations from harvesting to shipping) > large retailers, such as Coop

For Riberella and in the case of the first and largest affiliated producer organization the chain looks the following way:

> OP Makeda > Carrefour (among many other retailers, also in Sicily, and even in Berlin, Germany)[6]

Following Kaplinsky (2004) a full 'value chain' in the food sector comprises the following links: Seed design (1)[7] > Growing (2) > Post-harvest processing (3) > Exporting (4) > Retailing (5). The chains above correspond only roughly to links 2–5, as in the cases of Rosaria and Ortopiù wholesalers are involved already in link 2 (harvesting), and also organize shipping (4, exporting). In the case of the Riberella brand, producers control links 2–4; as mentioned, some 150 of them actually keep family members in northern cities to sell production there, in fact controlling links 2–5.[8] Wholesalers exist also in the Ribera area, and can participate in buying up produce using the Riberella brand, but producers have an alternative to selling to them, and no wholesaler-initiated brand has surfaced so far that could compete with Riberella DOP. According to an interviewed representative of Arancia de Ribera, wholesalers own only three packaging facilities, while producer organizations own two, and producers themselves nine others.

In conclusion, it seems that in the case of eastern wholesaler-led or wholesaler-initiated producer organizations wholesalers where in the best position to connect with large retailers and initiate the investments needed to meet the demand from food retail chains. In the citrus sector, in the eastern provinces, wholesalers have traditionally amassed many tasks that at times required employing high numbers of labourers and investing in storage houses and transportation means. Thus, although historical accounts about wholesalers may lead one to portray these as 'speculators' buying and selling citrus production without seeing it and with often only an office space as the main type of infrastructure needed in their activity, the reality on the ground is very different. In the citrus sector it is wholesalers, not growers, who organize the harvest: wholesalers find and hire the labourers needed in the harvesting process, build and maintain the storage houses to which the labourers transport the fruits, and (today) also often maintain a small fleet of trucks with which to ship production to clients. With the arrival or growth of food retail chains, it was such wholesalers – with their existing storage and transportation facilities – who were in the best position to undertake the technological improvements required by the retailers: packaging lines and computerized sorting machines needed to separate citrus production according to the size categories ('calibres') with which the retailers work.

In the Ribera area the late development of citrus production postponed or even prevented the rise of specialized wholesalers. When the opportunity to sell production to retailers first appeared, it was local producers who seized it, as some 150 (out of 4,000) had already developed the capacities to transport production to mainland Italy. The biggest packaging facility – built from the start to include sorting machines – appeared in the Ribera area only in the 2000s, and was built by one of the area's biggest growers (owning at that time some 30 hectares of land). In contrast, wholesalers in the eastern provinces formed an important part of the sector, historically responsible for harvest and storage, packaging and transportation. The biggest cases of 'producer organizations' were initiated by trading companies, and so were the first contacts with large national and international retailers. Thus these wholesalers have tried to create and promote brands only for the production and areas that they control and that guarantee them stable contractual relationships with retailers. What lies beyond the confines of these areas interests them less.

However, beyond these confines continues to exist another world of far smaller growers and wholesalers, one that characterizes the overwhelming part of the citrus sector throughout Sicily and certainly around Ribera. More than 60% of growers in Ribera or in the eastern provinces own land not bigger than a couple of hectares, and find it increasingly difficult to cover the yearly costs of growing citrus in Sicily (see Appendix Tables A2–4 for data on costs and prices supplied by the regional Agronomists Association). This reality used to be very different: up until the early 1990s, even small plots of land of 1–1.5 hectares could feed an entire family (D'Amaro, 2011). But with growing taxation and irrigation costs, and with falling prices, reality has changed dramatically for most small producers. This is in particular problematic for those growers who, because of the specialization prevalent in the sector in Catania, postponed any investment into facilities helping them harvest, store, and transport production. Such postponement made economic sense at the time, given that by leaving such facilities in the hands of wholesalers the sector could accomplish economies of scale despite the fragmentation of land ownership. But with the passing of time, what looked developed (specialized) became deeply challenging.

Revisiting Arguments about Producer Organizations and Institutions

Producer organizations should in principle help growers overcome high transaction costs, informational asymmetries between farmers and retailers, and incomplete property rights that impede the proper functioning of markets and especially coordination among market actors (Dorward et al., 2004). Producer organizations often allow small farmers to have bargaining power in negotiating prices with retailers and form economies of scale (Dorward et al., 2004; Bijman et al., 2012). This perspective depicts small farmers as too isolated, too uninformed, too under-credited, or not skilled enough to survive in the absence of producer organizations. The world of small farmers is rarely seen as a world in which actors actually end up opposing each other, as the ways in which their sectors change relative to global markets strengthen or weaken divisions in their sector, and particularly divisions along value chains. This study does not dispute the importance of producer organizations for development, but raises several questions about the conditions under which such organizations actually become effective in uniting producers.

Hence, we need to know more about when and how farmers come to face opposition to organizing collectively. This opposition might not be a function of differentials in some sort of informational or cognitive asset. Eliminating information asymmetries cannot eliminate the power differentials between growers and wholesalers resulting from the different location in the production network (the value chain): simply put, producer organizations might arise not only because producers realize their weakness in the supply chain, but because large retail chains actually demand the aggregation of supply as well as some stability in the supply. Producer organizations then resemble the captive suppliers of a lead firm – a wholesaler, for instance – depicted in the literature on value chains (Gereffi, 2014, p. 6). Wholesalers are better located not only to provide retail chains with information about the supply (which would be an informational asymmetry), but also to initiate the aggregation of supply and producer organizations, in particular in sectors where they have specialized in the assembly of agricultural products. That it is often the arrival of retailers and the conditions they impose that offer an important incentive to producers to organize is relatively well-known (Vorley, 2007); however, little is known about the processes through which production organizations emerge in response to retailers and about the actors in the supply chain that might oppose or limit the aggregation of small farmers into producer organizations. Specifically, it can very well be hypothesized, on the basis of the data presented in this article, that the rise of large retailers can favour a concentration of power in value chains around wholesalers rather than around producers, if it is wholesalers that are able to expand and maintain the necessary infrastructure. This might in turn suggest that governance of value chains stems not only from end-buyers (retail chains) and does not necessarily take the shape of certification standards (Lee et al., 2012), but also from wholesalers and takes the shape of organizations uniting producers around wholesalers.

In other words, it is important to check whether producers in producer organizations actually play a role as important as the name of the organization suggests. Such organizations might often not be really organizations of only producers, as wholesalers can play important roles – or even hold most power, as they can be far better positioned to call into life such organizations and to mediate between producers and large retail chains. This seems to be the rule in Sicily's eastern provinces, where the biggest producer organizations are in fact dominated by wholesalers or have been initiated by them. It is therefore highly questionable whether Italy has managed to achieve in this agricultural sector the aggregation of producers into organizations that it envisaged in the light of its offensive in the 2000s to create producer organizations in order to alleviate the problems of a highly fragmented agricultural sector. And it goes without saying that producer organizations in which wholesalers play such important roles are very far away from how the 'Common Market Organization' understood such organizations in 1972: 'as any organization of fruit and vegetable producers which is established on the producers' own initiative' (EC Regulation 1035/72 in Camanzi et al., 2009, p. 5).

Summing up, one can see in Sicily the operation of two different institutional orders (institutions understood as the rules of the game) defining and controlling the citrus market and the corresponding value chain, or, in other words, the space between producers and consumers. In the Ribera area, producers collude into several organizations around one consortium, representing them in front of the large retail chains that deliver their products to consumers. In the eastern provinces, traditionally strong wholesalers took the lead and aggregated producers into several organizations dealing with retail chains, competing against each other and at the same time leaving out the overwhelming majority of small producers in their areas (largely excluded from dealing with retail chains). This second arrangement does not exclude that the several organizations operating in the east will collude themselves to coordinate prices and quantities, but it is difficult to see why they would seek to extend membership indiscriminately to the small producers outside of their channels (instead of cherry-picking those that fit their requirements best). For these growers, one possible solution would be the arduous road of constituting their own producer organizations, in competition to those that wholesalers already established.

Conclusions

This article has studied the situation of citrus growers in Sicily. It has argued that even though development studies are well established explaining badly operating institutions in less developed regions in terms of low levels of social capital, we still do not know how to make sense of the variation in terms of institutional performance *within* regions with low levels of institutional prerequisites. This article found that such variation indeed exists within Sicily's citrus sector, with one area – Ribera in Western Sicily – capable of developing an effective aggregation of producers, and with another one – the far larger citrus cultivating area in the eastern provinces – failing to do so. It has also found that what could account for the variation is constitution of value chains, and specifically the early development of commercial structures in the eastern provinces, which placed wholesalers in the best position to initiate on their own the aggregation of some producers while at the same time keeping many others out. In other words, the situation of Sicily's citrus sector is somewhat paradoxical: it currently has (at least in the eastern provinces) tremendous difficulties competing internationally, but at the same time it once featured a hyper-capitalist, highly specialized structure, exporting most of its production. The argument advanced in this article is that the cause for the paradox is the institutional arrangement governing and ordering of the value chains between growers in the eastern provinces and consumers, preventing the formation of more effective and inclusive producer organizations.

Notes

1. Casavola et al. (2011), for instance, identify the know-how of producers in south-eastern Sicily as one of the factors explaining their performance.
2. Some 150 out of 4,000 producers in the Ribera area keep personnel in Northern Italy, (according to official data supplied by the Riberella Consortium (<http://www.aranciadiriberadop.it/>, accessed 8 October 2014).
3. Websites associated with this company are Agricola Ortogroup <http://www.agricolaortogroup.com> and Mammarancia <http://www.mammarancia.com/>, accessed 28 May 2015.
4. A presentation of the organization together with an overview of the entities that established it is available at Le buone terre <http://www.lebuoneterre.it>. Details on one of the organization's biggest members (with surfaces totaling some 60 hectares): Orange of Sicily <http://orangeofsicily.com/chi-siamo>. A background article offering information about the establishment of this organization is available from Ortofruttaweb <http://www.ortofruttaweb.it/italian/news/altro/al_002.htm>, all sites accessed 28 May 2015.
5. An overview of the positions held by members of the Pannetteri company within OP Rosaria can be found at Arancia Rosaria <http://www.aranciarosaria.eu/sicilia-Organigramma-96.asp>, accessed 28 May 2015.
6. An interview with the current (2015) chairman of the OP Makeda producer association can be accessed

through *Momenti* <http://www.momentiweb.it/index.php/233-tutte-le-arance-per-noi-hanno-un-prezzo?showall=1>. A presentation of the structure established by producers in Ribera to represent them in Berlin can be found at Biofruit <http://www.biofruit.it/assets/pdf/Flyer_italian.pdf>, all sites accessed 28 May 2015.

7. Since 'seed design' in the case of oranges refers to the produce of plant nurseries, and since buying plants (young trees) from nurseries is an investment usually made once in decades, it has been left out of the chains depicted above. However, often orange groves suffer attacks from the citrus tristeza virus, requiring producers to replace entire hectares (the virus represents a global problem, befalling orange groves worldwide). According to A. Pannetteri (Head of OP Rosaria), the demand for young trees is usually not met by local plant nurseries – themselves potentially affected by the virus, requiring more expensive imports (<http://www.italiafruit.net/DettaglioNews/23918/botta-e-risposta/verso-la-campagna-agrumicola-201314-volumi-in-crescita-e-una-stagione-sempre-piu-lunga-da-dicembre-fino-a-giugno-con-aurelio-pannitteri-presidente-op-rosaria>, accessed 28 May 2015).
8. One such producer (with surfaces of roughly 11 hectares) offers potential customers an overview of places in Nothern Italy, where he can be found selling produce (usually market places in cities and towns); an interview with the producer is available from Arance Pasqualino Borsellino <http://arance borsellino.it/chi-siamo/6-luoghi-di-vendita.html>, last accessed 28 May 2015.

References

Acemoglu, D., Johnson, S. and Robinson, J.A. (2001) *Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution*, NBER Working Paper No. 8460. Cambridge, MA: National Bureau of Economic Research.

Adhikari, K.P. and Goldey, P. (2010) Social capital and its 'downside': the impact on sustainability of induced community-based organizations in Nepal, *World Development*, 38(2), pp. 184–194.

Asso, P.F. and Trigilia, C. (2010). *Remare controcorrente. Imprese e territori dell'innovazione in Sicilia*. Rome: Donzelli Editore.

Beccali, M., Cellura, M., Iudicello, M. and Mistretta, M. (2009) Resource consumption and environmental impacts of the agrofood sector: life cycle assessment of Italian citrus-based products, *Environmental Management*, 43(4), pp. 707–724.

Becker, S.O., Boeckh, K., Hainz, C. and Woessmann, L. (2011) *The Empire is Dead, Long Live the Empire! Long-Run Persistence of Trust and Corruption in the Bureaucracy*, CEPR Discussion Paper No. DP8288. Published online <http://ssrn.com/abstract=1794878>.

Bijman, J., Iliopoulos, C., Poppe, K.J., Gijselinckx, C., Hagedorn, K., Hanisch, M., Hendrikse G., Kühl, R., Ollila, P., Pyykönen, P. and Van der Sangen, G. (2012) *Support for Farmers' Cooperatives: Final Report*. Brussels: European Commission.

Camanzi, L., Malorgio, G. and Azcárate, T. (2009) *The Role of Producer Organizations in Supply Concentration and Marketing: A Comparison between European Countries in the Fruit and Vegetables Sectors*. Presentation at the 113th EAAE Seminar 'A Resilient European Food Industry and Food Chain in a Challenging World', Chania, 3–6 September.

Casavola, P., Giunta, R., Manzo, G. and Pitti, G. (2011) *L'economia dei due angoli. Agricoltura dinamica nel Nord-Ovest e nel Sud-Est della Sicilia*, Fondazione RES Working Paper 04/2011. Palermo: Fondazione RES.

Casson, M.C., Della Giusta, M. and Kambhampati, U.S. (2010) Formal and informal institutions and development, *World Development*, 38(2), pp. 137–141.

D'Amaro, F. (2011) Il mercato dell'acqua Politica, istituzioni e conflitti nel distretto agrumicolo di Bagheria (XX sec.), *Meridiana*, 71–72, pp. 271–291.

De Blasio, G. and Nuzzo, G. (2010) Historical traditions of civicness and local economic development, *Journal of Regional Science*, 50(4), pp. 833–857.

Di Liberto, A. and Sideri, M. (2011) *Past Dominations, Current Institutions and the Italian Regional Economic Performance*, Centro Ricerche Economiche Nord Sud Working Paper 2011/15. Cagliari: University of Cagliari.

Dimico, A., Isopi, A. and Olsson, O. (2012) *Origins of the Sicilian Mafia: The Market for Lemons*, CREDIT Research Paper No. 12/01. Nottingham: University of Nottingham.

Dorward, A., Kydd, J., Morrison, J. and Urey, I. (2004) A policy agenda for pro-poor agricultural growth, *World Development*, 32(1), pp. 73–89.

Fafchamps, M. (2006) Development and social capital, *Journal of Development Studies*, 42(7), pp. 1180–1198.

Foley, M.W., Edwards, B. and Diani, M. (2001) Social capital reconsidered, in: B. Edwards, M.W. Foley and M. Diani (eds) *Beyond Tocqueville: Civil Society and the Social Capital Debate in Comparative Perspective*. Hanover, NH: University Press of New England, pp. 266–280.

Gereffi, G. (2005) The global economy. organization, governance, and development, in: N. Smelser and R. Swedberg (eds) *The Handbook of Economic Sociology*. Princeton, NJ: Princeton University Press, pp. 160–182.

Gereffi, G. (2014) Global value chains in a post-Washington Consensus world, *Review of International Political Economy*, 21(1), pp. 9–37.

Grootaert, C. and Van Bastelaer, T. (eds) (2002) *The Role of Social Capital in Development*. Cambridge: Cambridge University Press.

Istat (Istituto nazionale di statistica) (2010) *Censimento Generale dell'Agricoltura*. Published online <http://censimentoagricoltura.istat.it>, accessed 14 December 2015.

Iuzzolino, G., Pellegrini, G. and Viesti, G. (2011) *Convergence among Italian regions, 1861–2011*, Bank of Italy Economic History Working Paper 22. Roma: Banca d'Italia.

Kaplinsky, R. (2004) Spreading the gains from globalization: what can be learned from value-chain analysis?, *Problems of Economic Transition*, 47(2), pp. 74–115.

Lee, J., Gereffi, G. and Beauvais, J. (2012) Global value chains and agrifood standards: challenges and possibilities for smallholders in developing countries, *Proceedings of the National Academy of Sciences*, 109(31), pp. 12326–12331.

Lupo, S. (1984) *Agricoltura ricca nel sottosviluppo: storia e mito della Sicilia Agrumaria (1860–1950)*. Catania: Società di storia patria per la Sicilia Orientale.

Lupo S. (1987) Tra società locale e commercio a lunga distanza: la vicenda degli agrumi siciliani, *Meridiana*, 1, pp. 81–112.

Megyesi, B., Kelemen, E. and Schermer, M. (2011) Social capital as a success factor for collective farmers marketing initiatives, *International Journal of Sociology of Agriculture and Food*, 18(1), pp. 89–103.

Petrarca, I. and Ricciuti, R. (2013) The historical economics of corruption and development within Italy, *International Journal of Monetary Economics and Finance*, 6(2), pp. 186–202.

Portes, A. (2000) The two meanings of social capital, *Sociological Forum*, 15(1), pp. 1–12.

Putnam, R., Leonardi, R. and Nanetti, R. (1993) *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, NJ: Princeton University Press.

Ravenhill, J. (2014) Global value chains and development, *Review of International Political Economy*, 21(1), pp. 264–274.

Rodríguez-Pose, A. (2013) Do institutions matter for regional development?, *Regional Studies*, 47(7), pp. 1034–1047.

Rodrik, D., Subramanian, A. and Trebbi, F. (2004) Institutions rule: the primacy of institutions over geography and integration in economic development, *Journal of Economic Growth*, 9(2), pp. 131–165.

Savoia, A., Easaw, J. and McKay, A. (2010) Inequality, democracy, and institutions: a critical review of recent research, *World Development*, 38(2), pp. 142–154.

Sciarrone, R. (ed.) (2010) *Alleanze nell'ombra. Mafie ed economie locali in Sicilia e nel Mezzogiorno*. Roma: Donzelli Editore.

Serra, R. (2011) The promises of a new social capital agenda, *Journal of Development Studies*, 47(8), pp. 1109–1127.

Tisenkopfs, T., Kovách, I., Lostak, M. and Šūmane, S. (2011) Rebuilding and failing collectivity: specific challenges for collective farmers marketing initiatives in post-socialist countries, *International Journal of Sociology of Agriculture and Food*, 18(1), pp. 70–88.

Vaccaro, S.S. (2011) *La distribuzione dei prodotti agroalimentare e la catena del valore: il caso agrumi*. PhD Thesis, Catania University.

Vorley, W., Fearne, A. and Ray, D. (eds) (2007) *Regoverning Markets: A Place for Small-scale Producers in Modern Agrifood Chains?* Aldershot: Gower Publishing.

Appendix

Table A1. Cases studied during fieldwork.

Tag	Location (province)	Size (in hectares)	Product or Activity	Years in activity
Agnone 1	Syracuse	2	Oranges (blond)	25–30
Zafferana 1	Catania	5	Avocado	10
Lentini 1	Syracuse	11	Oranges (red)	3rd generation or more
Misterbianco 1	Catania	100	Oranges (red)	3rd generation or more
Lentini 2	Syracuse	2	Grain and bakery	2
Trecastagni 1	Catania	1	Bakery	4–5
Trecastagni 2	Catania	2.5	Wine	4–5
Augusta 1	Syracuse	3	Vegetables	3
Agnone 2	Syracuse	5	Oranges (blond	5
Santa Venerina	Catania	1	Citrus	3rd generation
Zafferana 2	Catania	3	Avocado, olives	10
Trecastagni 3	Catania	1	Goat's cheese	6
Viagrande 1	Catania	6	Citrus, other fruits, olives	3rd generation or more
Francofonte 1	Syracuse	50	Trade	3rd generation
Riposto 1	Catania	18	Lemons	2nd generation
Riposto 2	Catania	–	Trade	2nd generation
Licata 1	Agrigento	5	Goat's cheese	10–15
San Cataldo 1	Caltanisetta	100	Goat's cheese	10
Licodia 1	Catania	10	Red oranges, cactus pear	8
Trecastagni 4/ Francofonte	Catania/Syracuse	40	Oranges (Red)	2nd generation
Agnone 3	Syracuse	47	Oranges (Red)	8
Paterno 1	Catania	5	Oranges (Red)	3
Paterno 2	Catania	3	Oranges (Red)	10
Ragusa 1	Ragusa	–	Cow cheese	–
Viagrande 2	Catania	–	Olive products	5
Codavolpe	Catania	29	Red oranges, potatoes	2nd generation
Ribera 1	Agrigento	5	Oranges (blond)	2nd generation

Note: the cases are referred to by the name of the respective town, village, or commune.

Table A2. Overview of production costs for oranges for orange farms in Sicily.

Costs (EUR/HA)	1980	1990	2000	2010	2013
Real Estate Tax	0	0	300	300	750
Irrigation costs (water only)	18	105	220	320	450
Tax	90	110	130	130	200
Growing operations	106	180	310	700	800
Pruning	120	220	450	800	900
Electricity	95	200	310	920	1,200
Fertilizers	250	285	360	650	650
Foliar fertilizers	30	70	115	250	250
Fuel	15	45	65	280	350
Social security	25	40	120	300	300
Total	749	1,255	2,380	4,350	5,850

Source: compiled by agronomists in Sicily's Association of Agronomists.

Table A3. Overview of average revenues for orange farms in Sicily.

Product type	1980		1990		2000		2010	
	EUR/kg	EUR/ha	EUR/kg	EUR/ha	EUR/kg	EUR/ha	EUR/kg	EUR/ha
Navelina	0.30	7,500	0.28	7,000	0.22	5,500	0.16*	4,500
Tarocco	0.25	6,250	0.23	5,750	0.20	5,000	0.10	2,500
Valencia	0.60	18 000	0.30	9,000	0.20	6,000	0.18*	5,400

Note: * in Eastern provinces; 0.40–0.45 in the Ribera area.
Source: compiled by agronomists in Sicily's Association of Agronomists.

Table A4. Overview of average costs versus revenues for orange farms in Sicily.

Product type	1980	1990	2000	2010
Navelina	+6,751	+5,745	+3,120	+150
Tarocco	+5,501	+4,495	+2,620	–1,850
Valencia	+17 251	+7,745	+3,620	+1,050

Source: compiled by agronomists in Sicily's Association of Agronomists.